HITACHI

Catalogue 2022



Cooling & Heating

Pure air, peace of mind, it changes everything

Explore our catalogue for the latest innovations and exclusives, as well as our full range of before and after-sales services, dedicated to any application.



Our high-performance heating and air-conditioning solutions are all aimed at the ultimate user comfort and ease of implementation for air-conditioning engineers.

They are designed in a sustainable way to better meet the requirements of your customers.

Our development in the UK and Ireland depends above all on the proximity and unique support capacity of our network of Hitachi experts. Our teams strive to support you by establishing a real relationship of trust, with a desire to bring you the best possible service, every day.

The *Net Zero* scheme makes the ecological turnaround a strategic objective. It's something we are proud to be a part of and proud to be at your side. We are committed to developing sustainable partnerships and offering you pioneering and exclusive solutions, tailored to all the challenges of new and renewable energy.

#airislife*

hitachi-hvac.co.uk

*Air is life

Summary

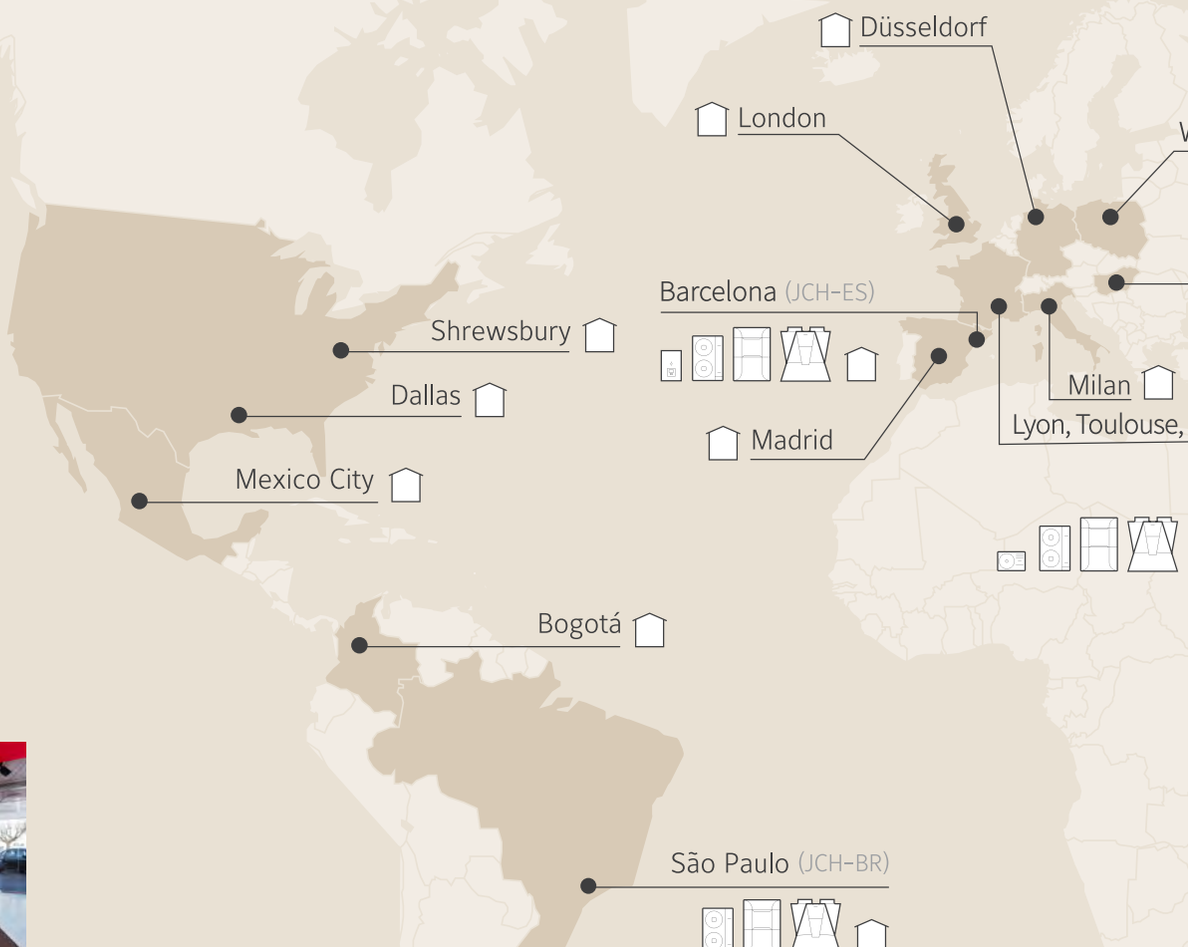
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16. Chillers indoor units	Available in 2022. New Katana range: Fan convector consoles, ducted units, ceiling units, cassette units. Whatever your requirements, please contact your sales representative. P. 314 to 315 NEW							



Welcome to Hitachi Cooling & Heating solutions



Johnson Controls – Hitachi heating and air-conditioning solution factories across the world















Enjoy an exclusive factory tour

The Johnson Controls – Hitachi factory in Barcelona (Spain) is responsible for the design, manufacture, and verification of every appliance made there. It supplies Europe, Africa, parts of South America, and Oceania.

Its location allows us to have products specially suited to the European market. The rigorous design and manufacturing process ensures the highest quality, reliability, and durability for our customers in each piece of equipment they buy. This factory is also our European spare parts center.

It currently produces the following product lines: the commercial range with VRF systems, the Chillers range, and the Yutaki Air/Water heat pump range, representing almost the entire Hitachi equipment series.

Johnson Controls

HITACHI
Air conditioning solutions

Johnson Controls – Hitachi Air Conditioning offers the world's most extensive range of heating, air-conditioning, and air handling products in the world.

15,000
people employed worldwide

15 factories
worldwide; the one in Barcelona serves the European market

Always at the cutting edge of technology, Johnson Controls – Hitachi Air Conditioning develops products with everyone's comfort in mind, in work and home environments, for new builds and renovations.

Respect for the environment is also our priority, from product design and production through to installation and commissioning.

Whatever your expectations, the Hitachi network is here to support you and offer you the right solutions.



UK Regulations and incentives



Renewable Heat Incentive (RHI):

The government launched the Domestic RHI scheme on 9th April 2014. In summary, the scheme was set up to displace existing fossil fuel boilers with a renewable energy heat source such as air to water heat pumps like Yutaki.

Since its inception, the tariff for air to water heat pumps has increased meaning for each kW/hr that the Yutaki unit generates, the owner of the unit gets paid a “deemed” amount each quarter for a duration of seven years which is administered by Ofgem.

The process starts with the obtaining of an Energy Performance Certificate (EPC) which determines the total heat demand for the property. This figure is what is used to calculate the RHI payment and this is why it is “deemed”, unless for a more complicated installation such as a bivalent or hybrid system where the heat from the heat pump needs to be measured.

Total RHI payment over 7 years

£8,775.49

assuming 1% inflation

The efficiency of the heat pump affects the amount paid. Please see example below of a standard property:

Total Heat Demand	14,805 kW/hrs
Heat Pump installed	RASM4.0VNE (11kW Yutaki M)
Design Flow Temperature	45ºC
Tariff	10.92p/kW/hr

To ensure qualification of the RHI scheme, the product and the installer need to be Microgeneration Certification Scheme (MCS) approved. The entire Yutaki range is MCS approved, so it qualifies for the RHI incentive.

Yutaki also complies with the Energy Related Products (ErP) directive.
For more information please contact us.

Call us on: + 44 (0)203 901 0912 - Business hours: Mon - Fri 9am - 5pm, or
Email: aircon.uk@jci-hitachi.com
For more information on Yutaki, please visit **www.hitachi-hvac.co.uk**
or for any schematics, please visit **www.yutaki-applications.com**
and for product selection software, please visit **www.hitachi-hitoolkit.com**

All information correct at time of printing.

More than 130 years of innovation



1883

In 1883, Warren S. Johnson obtained a patent for the first electric ambient thermostat. His invention gave rise to the control sector for buildings and Johnson Controls.

1910

In 1910, Namihei Odaira founded an electrical equipment repair shop at Kuhara Mining in Hitachi (Ibaraki, Japan). The company has been a technological leader ever since.

1936

First fully air-conditioned office building.

1952

First air-conditioning unit in Japan.

1958

First integral centrifugal chiller with water condenser on delivery.

1962

First heat pump in Japan.

1978

First cooler with variable speed drive.

1983

First DC Inverter air-conditioning unit in the world.

1999

First graphical user interface board (GUI) on a cooler.

2005

After acquiring the York® brand, the Group becomes the Number 1 one-stop supplier of Heating Ventilation Air-conditioning & Cooling systems.

2006

- First 6 -output multi-split unit on the market.
- First air/water heat pump.

2008

- First console dedicated to the heating market.
- First IVX on the market.

2010

Johnson's head office receives LEED Platinum certification. This eco-building label, awarded to programs at the cutting edge of energy and environmental design, is a scheme developed by the Green Building Council in the U.S.

2011

- First split thermodynamic tank on the market.
- First 2-pipe / 3-pipe VRF on the market.

2013

First ultra high-temperature heat pump, the NF.

2014

- First dual-service heat pump.
- VRF Eurovent-certified range.

2015

On October 1, the new company Johnson Controls – Hitachi Air Conditioning is launched.

2016

- New Yutaki air/water heat pump range.
- Hi Kumo app for connected heat pumps.

2017

New Hydro-Free solution (hot water production in VRF).

2018

- Triple C solution, the first multi-split storage water heater.
- New VRF Sigma range.
- New full range of Samurai chiller units.

2020

- FrostWash's exclusive self-cleaning feature for improved indoor air quality.
- New VRF SET FREE Mini with horizontal fan blower.
- New Yutaki R32 air/water heat pump range.
- New CSNET centralized management solution.
- Hi Kumo PRO, new remote maintenance solution for air/air and air/water heat pumps.

2021

- New Summit 2 wall unit and Summit 2 Multi-split units.
- airCloud and airCloud Pro.
- New Refrigerant in water cooled chiller.
- New Primairy R32 range dedicated to retail.
- New groups of chillers, Samurai air cooled units.

Products Highlights

PAC

R32 Primary 5 and 6Hp Monophase models

Launch date: 2021

Complete range with Monophase power supply for top selling capacities



Energy savings

High seasonal performances: SEER A++ / SCOP A+

Complete and consistent range

From 7.1 to 17.0 kW, including new 8.8 kW units
New 12.5 and 14.0 kW units in single and three phase

Easy selection and installation

Universal outdoor units

High Static & compact dimensions for Ducted indoor units

40 Pa & 190 mm height for 3 HP unit
120 Pa & 268 mm height for 3.5/4.0 HP units



Flexible floor-ceiling installation for all application

Can be installed either on the floor or on the ceiling



Environment friendly solution

New R32 refrigerant

Fresh air intake

Dye-cut intake in all indoor units for air renewal

Control applications

Group control compatible : up to 8 units, with new wired remote WRC HCWA21NEHH
Compatible with HLINK controllers: available with gateway HCAA01NEWI



Capacity HP	3.0	3.5	4.0	5.0	6.0	6.5
Single phase	•	•	•	•	•	
Three phase				•	•	•

• New capacities

PAC

New PAC standard range

Launch date: 2021

New PAC standard range: First Hitachi PAC solution with simultaneous control

Wide range to match with all applications

Double line-up: R410A and R32
R410A: from 4 to 6 HP
R32: from 3 to 6 HP
Single, Twin, Tri and Quadri combinations with simultaneous control

Easy selection

Compatibility with System Free indoor units

Compatible with FY22 novelties:

- New ducted range (RPI-FSRE)
- New mini cassette range (RCIM-FSRE)
- Iconic panel (P-GP160*AP*)

Controls:

HLINK compatibility
CSNet
New G2.5 wired remote control
airCloud Pro compatibility

Wide operation range:

Heating @ -15ºC







Capacity HP		3.0	4.0	5.0	6.0
R410A	Monophase		•	•	•
	Triphase		•	•	•
R32	Monophase	•	•	•	•
	Triphase		•	•	•

VRF

New mini IVX range

Launch date: 2021

New mini IVX range: IVX-C successor for R410a, first Hitachi R32 mini VRF!

Wide range to match with all applications

Double line-up: R410A and R32
R410a from 4 to 6 Hp
R32 from 4 to 6 Hp
Individual control up to 4 indoor units

Easy selection

Compatibility with System Free indoor units.
Compatible with FY22 novelties:
- New ducted range (RPI-FSRE)
- New mini cassette range (RCIM-FSRE)
- Iconic panel (P-GP160*AP*)

Controls:

HLINK compatibility
CSNet
New G2.5 wired remote control
airCloud Pro compatibility





Capacity HP		4.0	5.0	6.0
R410A	Monophase	•	•	•
	Triphase	•	•	•
R32	Monophase	•	•	•
	Triphase	•	•	•

VRF

New RPI(L)-FSRE ducted unit

Launch date: 2021

Compact and installer friendly ducted units range with static pressure

Matches all applications needs

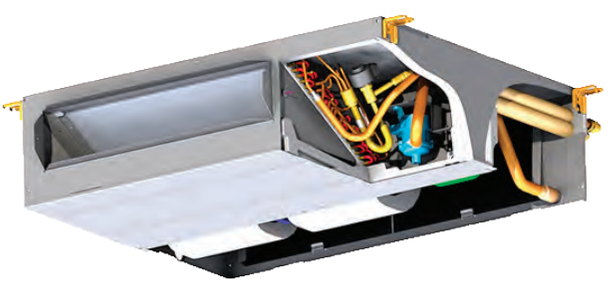
Compact: 750 mm width up to 2 HP and 197 mm height up to 1.5 HP
Large range of static pressure:
from 100 Pa for 0.4-1.5 HP and up to 200 Pa for 4-6 HP
Compatible with motion sensor
R32 compatible

Easy to install

Bottom or rear air inlet
Connections at the rear
Detachable electrical box
Disconnectable drain pump

Easy service

Easy filter access without tool



Capacity HP	0.4	0.6	0.8	1.0	1.5
Range LS: 0-100 Pa	•	•	•	•	•
Dimensions (mm)	750 x 197 x 600				

Capacity HP	1.5	2.0	2.5	3.0	4.0	5.0	6.0
Range MSP: 150 Pa	•	•	•	•	•	•	•
Dimensions (mm)	750 x 240 x 600		1084 x 240 x 600		1474 x 240 x 600		

Capacity HP	4.0	5.0	6.0
Range HSP: 200 Pa	•	•	•
Dimensions (mm)	1474 x 340 x 600		

VRF

Design panels for new cassette 800 x 800

Launch date: 2022
4 new panels for new cassette RCI-FSR

4 models:

Standard Black (P-AP160KA3)
Iconic (P-GP160NAP)
Iconic black (P-GP160KAP)
Iconic elevated (P-GP160NAPU)

Unique design panel recognized by the iF Design Award

Opportunity to spec in and create connections with architects, building owners and promoters

Premium product

Aligned with our brand image and positioning







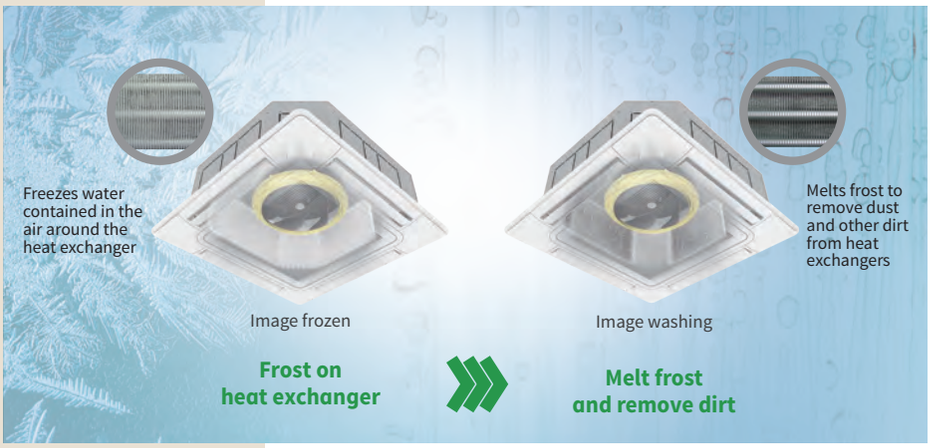
VRF

FrostWash with Sigma

Launch date: 2022

Indoor unit self-cleaning by FrostWash

Maintain heat exchanger efficiency
Improve air quality



Several choices for FrostWash operation

Manual
Automatic
On schedule (set with new remote control)

Available on:

Cassettes 800 x 800 RCI-FSR
Cassettes 600 x 600 RCIM-FSRE
2W Cassettes RCD-FSR
Ducts RPI(L/H)-FSRE
Ceiling RPC-FSR



Set Free Sigma



New LCD controller

Heating

New Yutaki indoor unit

Launch date: 2022

Hydraulic module renewal to better match customers expectations

New external aspect

Modern design providing premium quality perception
Compact dimensions (600 x 600) for easy integration and installation

New sanitary hot water tank

One single capacity = 220L
Active anode as an accessory
Easy maintenance

New LCD controller

Fully new aesthetics: new shape, coloured display
User friendly to improve user experience

Easy installation and maintenance

All components accessible from the front panel
All pipings aligned on top of the unit

EUROPEAN PRODUCT DESIGN AWARD



New LCD controller



Capacity HP	2.0	2.5	3.0	4.0	5.0	6.0	8.0	10.0
Yutaki S	•	•	•	•	•	•	•	•
Yutaki SCombi	•	•	•	•	•	•		

Controls: PAC/VRF

Primary HLINK gateway

Launch date: 2021

New Primary HLink gateway: Primary range is now compatible with HLINK controls

Compatibility with all Primairy ranges

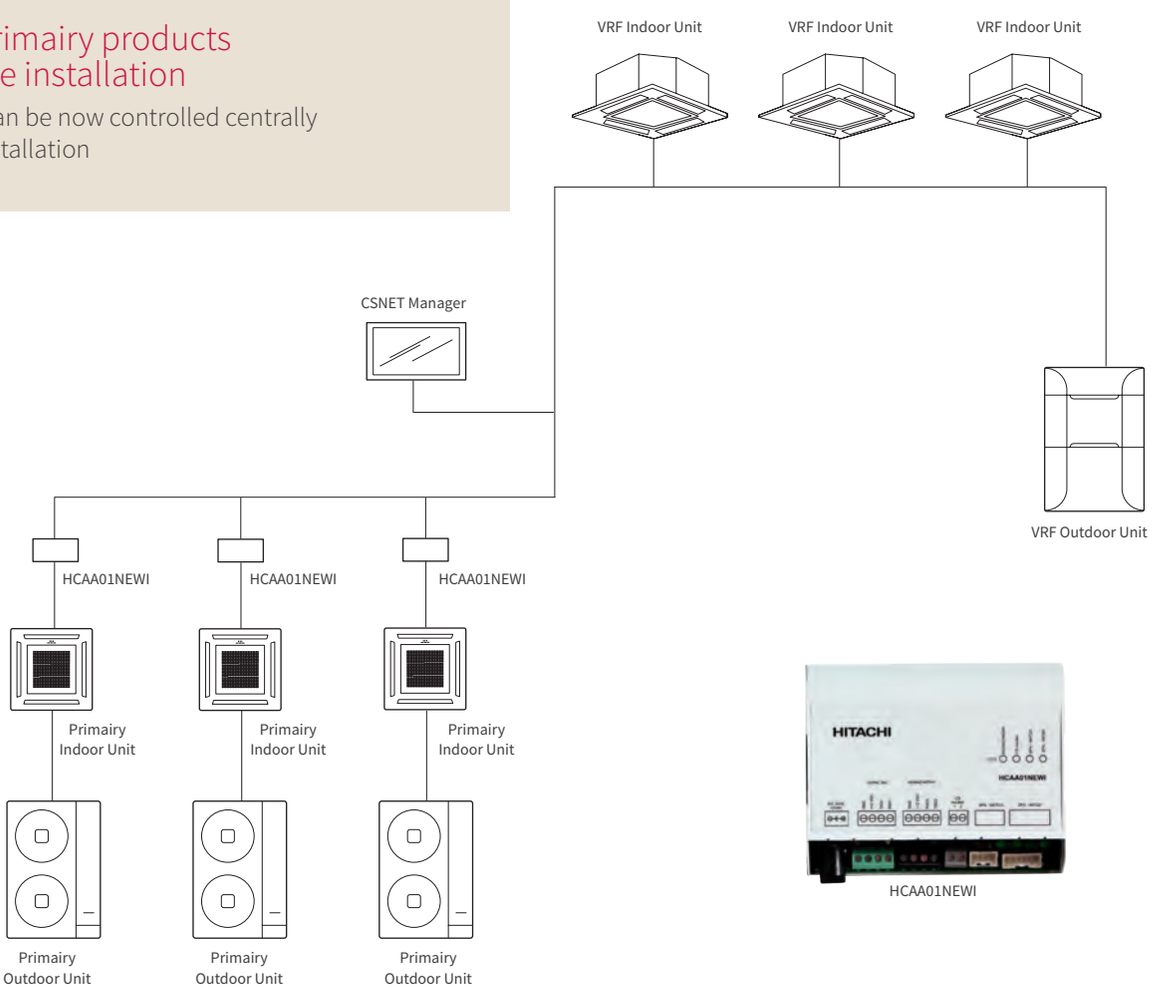
Primairy R410a inverter
Primairy R32 inverter

Compatibility with HLINK VRF controllers

Central control feasible with CSNET manager
or airCloud Pro

VRF and Primairy products at the same installation

Both ranges can be now controlled centrally
on a mixed installation



HCAA01NEWI

Controls: RAC

airCloud Home

Launch date: 2021

New WiFi gateway and iOT platform for RAC

Remote control of AC units

airCloud Home gateway allows to connect an air conditioner to the cloud via home WiFi network
Air conditioners can be controlled from anywhere by simply installing **airCloud Home app** on **iOS 10.0** and **Android 8.0** smartphones or later versions

All standard features available:

On/off, operation modes, temperature setting, fan speed, weekly timer, holiday mode, display error codes

New features available:

FrostWash, smart geo-fencing, several accounts for one home, several homes for one account

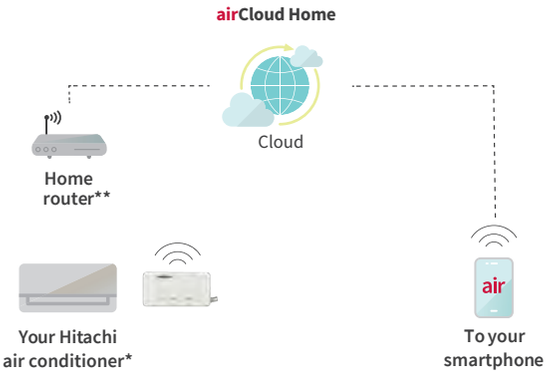
Voice command through Google Home and Amazon Echo

Available in many European languages

Compatible with R32 air-to-air RAC indoor units (D, E and F generation)

Easy and discreet installation

Compact dimensions (80mm x 40mm x 16.5mm), light weight (80g)



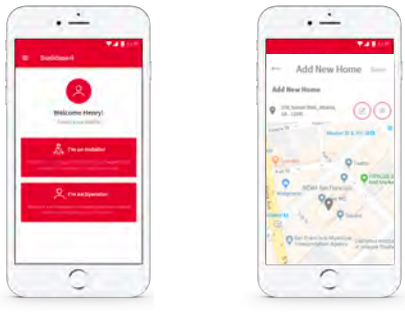
*Compatibility varies depending on air conditioner models.
**Router shall be able to support 2.4GHz band.



airCloud Home Adapter



Amazon Echo Google Home



Centralized controllers: VRF

NEW

CSNET Manager

Launch date: 2022
Software update version 2.02

CSNET Manager 2 software is updated to version 2.0, bringing new key features to manage VRF systems

Server rooms management
Back-up & rotation functions

Compatibility with:
Hydrofree and Yutaki units, to manage all ATW and ATA systems from CSNET

Advanced multitenant features
Management of pulse power meters with CSNET Lite to record 3rd party energy consumption with CSNET Manager

12 New languages for EU
(22 languages available for EU)







Centralized controllers: VRF

NEW

airCloud Pro

Launch date: 2022
First release date in Europe

iOT solution for VRF:

Cloud based system to control VRF installations from a dedicated App

Specific HLINK gateway HC-IOTGW to control up to 64 indoor units

80 units max possible; possible combination of several HC-IOTGW to control very large systems

Basic control functions dedicated to Air-to-Air VRF indoor units

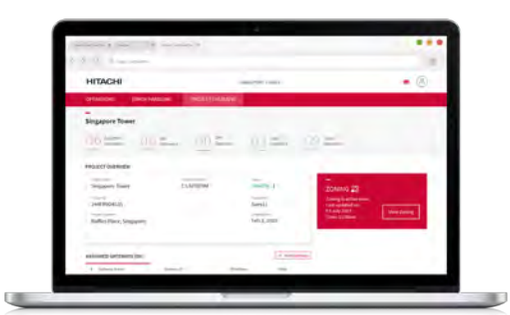
Simple weekly timer, alarm notification and history

More features expected during FY22

(power consumption for Hitachi AC units, advanced maintenance, multitenant billing system)







Chiller

NEW

New water cooled screw models

Launch date: 2022
New R513a version: lower environmental impact all current capacities and performance remain unchanged

Lower Global Warming Potential range

GWP reduces to 573, from 1430 (60% reduction)
All performance parameters same as R134a version





Capacity HP	40	50	60	70
Samurai L - RCME-WX1	•	•	•	•

Fan coils

NEW

New chilled water fan coil range

Launch date: 2022

New product range: fan coils for hot water heating and chilled water cooling

Complete range of fan coils

Hitachi Branded, Eurovent approved
2 Pipe & 4 Pipe versions

Convertible Model

With/without casing for floor, wall, ceiling and ducted installation AC motors throughout the range

Cassette Models

3 sizes (600x600, 800x800, 870x870)
AC or EC motor versions

Ducted Model (med static)

Horizontal or vertical installation
Up to 80 Pa static pressure, 5 speeds
(3 factory connected)

Ducted Model (high static)

Horizontal installation, 5 speeds
(3 factory connected)
Up to 160 Pa static pressure





Cassette (AC)	Capacity (kW)	2.3	2.7	3.8	4.4	6.3	8.6	9.7
RCI(M)W		•	•	•	•	•	•	•
Dimensions (mm)		600 x 600				800 x 800		

Cassette (EC)	Capacity (kW)	2.7	3.9	4.5	6.5	9.7	11.6	13.6
RCI(M)-ECM		•	•	•	•	•	•	•
Dimensions (mm)		600 x 600			800 x 800		870 x 870	





Ducted (AC)	Capacity (kW)	2.2	4.3	5.4	5.9	6.2	7.8	8.6
RPIW-M (up to 80 Pa)		•	•	•	•	•	•	•

Ducted (AC)	Capacity (kW)	5.8	8.0	10.5	13.5	16.7
RPIW-H (up to 160 Pa)		•	•	•	•	•



Convertible (AC)	Capacity (kW)	1.2	1.8	2.5	3.1	3.5	4.7	5.5	6.3	7.4
RPFCW-(CB-CFV-CFH-USD)		•	•	•	•	•	•	•	•	•



Our new home

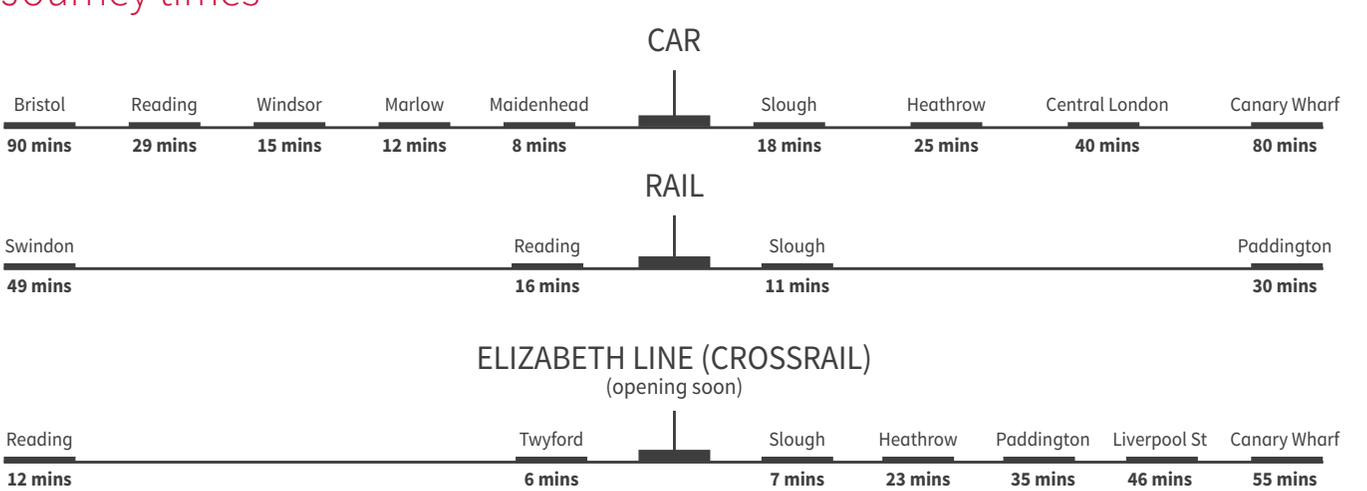
In 2021, we relocated our UK and Ireland headquarters to a new location in leafy Maidenhead, Berkshire benefiting from great transport links, plenty of visitor parking and onsite café.

Great transport links

Foundation Park sits in the Thames Valley, just two miles from the M4 (junction 8/9), 14 miles from the M25 and 16 miles from Heathrow airport and just a few minutes from Maidenhead railway station by shuttle bus or taxi.

We're enjoying the beautiful grounds and making use of the outside seating areas for informal meetings, and we look forward to welcoming you to Building 7 soon.

Journey times



Shuttle bus

At peak times, two dedicated Foundation Park Shuttle buses leave Maidenhead Train Station every 15 minutes

- Only 10 minute journey time
- Additional lunchtime services

Foundation Park is also conveniently located in the heart of the Thames Valley for access by car.

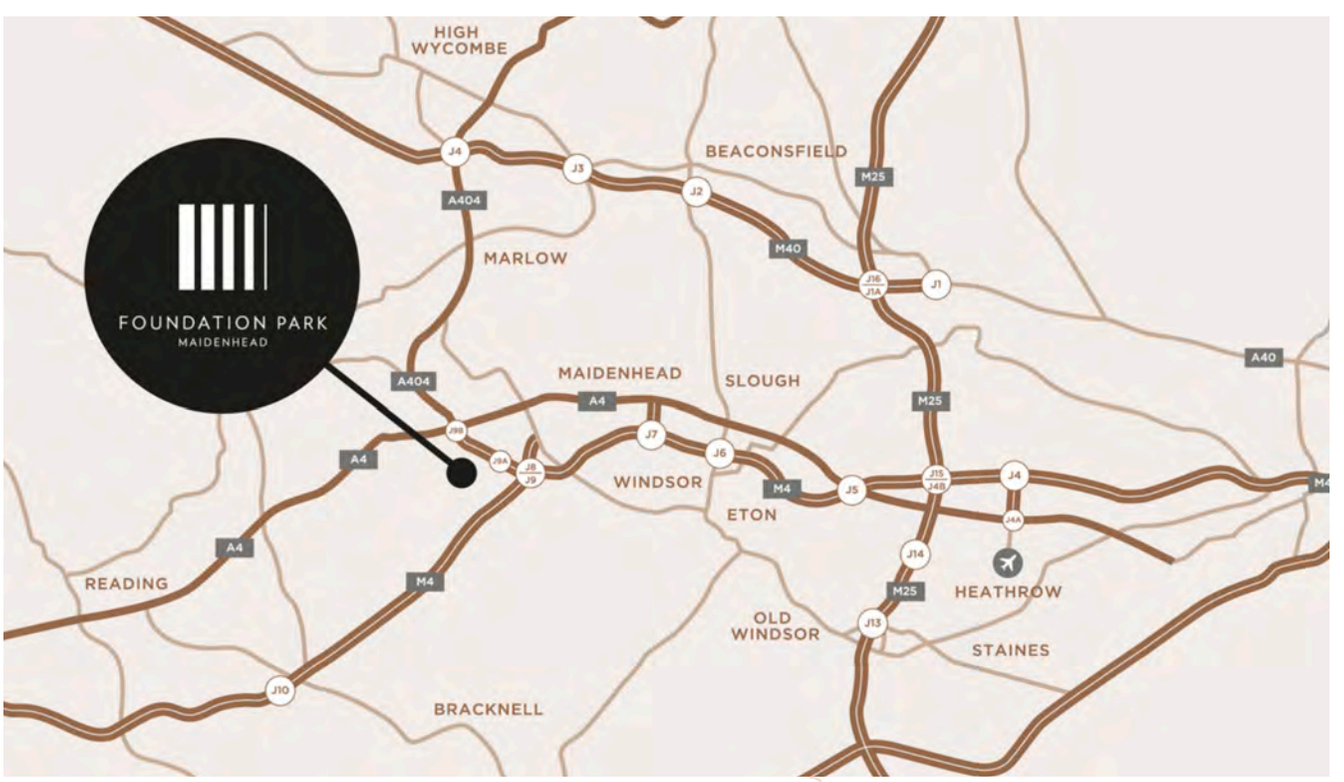


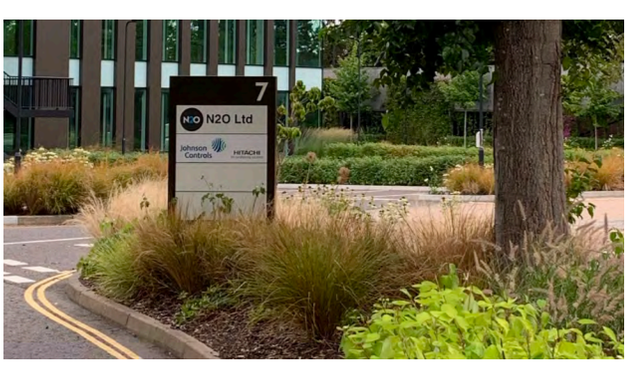


Train

Maidenhead's mainline rail station provides a direct link to London Paddington and Reading.

Maidenhead will be a major station on the route strengthening its links across the national rail network and the new Elizabeth line will provide a new east-west route across Greater London, shortening travel times further still.







Hitachi training

Aircademy training suite

Our new aircademy training suite has been completed and we're ready to support sales and service engineers, contractors and installers increase their product knowledge and expand their horizons to maximise the potential of their future sales.

Training designed for you

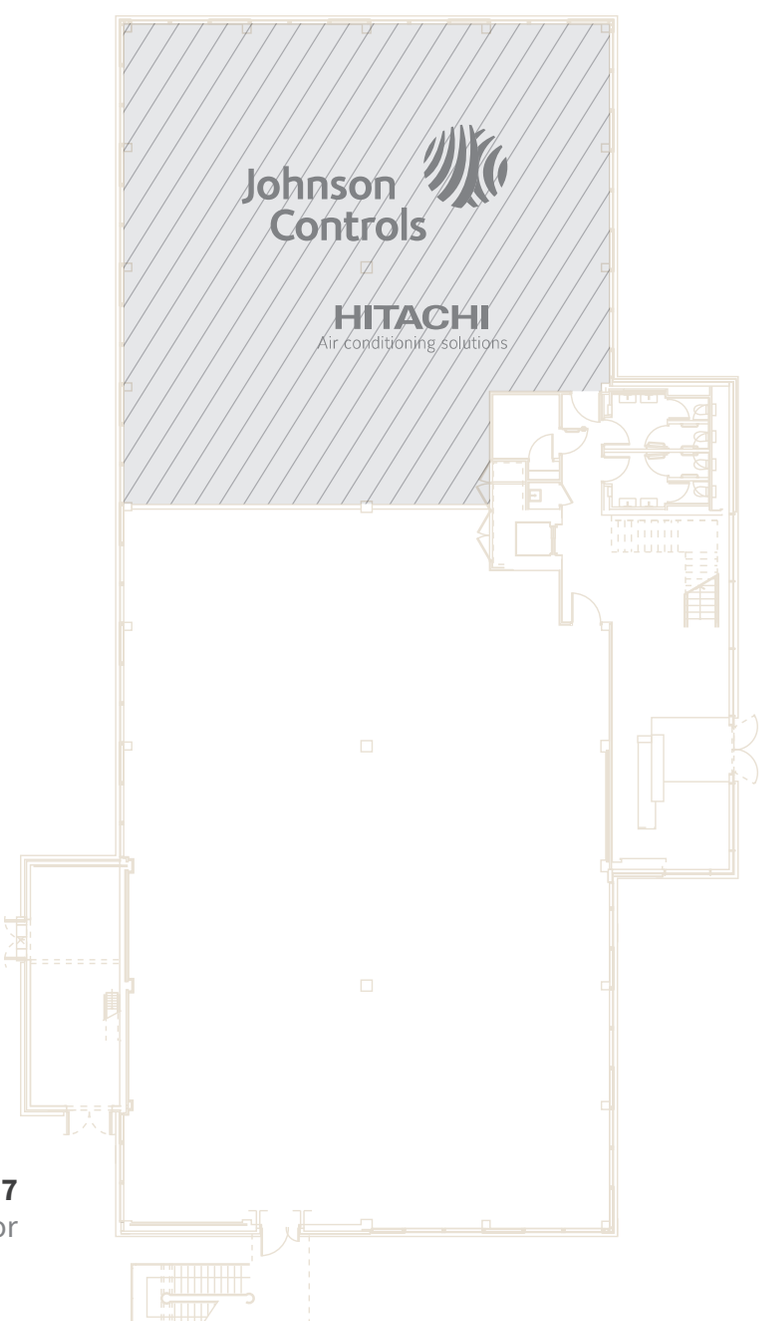
With the UK government announcing £5,000 homeowner grants for installing heat pumps, we're ready to train plumbers to install our refrigerant-free monobloc air source heat pump, and expand air conditioning engineers' skills with training on our full range of Yutaki air source heat pumps.

In addition, our air conditioning products are on display and equipment is fully operational and used 'hands on' throughout our product-specific training programme.

Simple wired controllers through to CSNET Manager and BMS interfaces facilitate our fully-interactive training sessions.

Contact your Hitachi sales representative, preferred distributor or email the Hitachi training team for full course content, available dates and to book.

Aircon.training@jci-hitachi.com



Building 7
Ground floor

Courses

Our product-specific one-day training courses are hosted at Hitachi's UK headquarters in Maidenhead, Berkshire and led by our experienced trainers. Numbers are limited to ensure courses can be tailored to participants' requirements. Course materials and refreshments are included.

Installation and commissioning

BUSINESS
PUBLIC

Set Free VRF for Field Engineers

- Pipework design and installation
- Electrical installation and control wiring
- Dip switch settings
- Refrigerant cycle operation
- Controller installation and operation
- Inverter control and operation
- Optional functions
- Commissioning and system set up
- Troubleshooting and system interrogation
- "Hands on" system testing
- CSNET Manager and BMS interfacing overview

VRF Selection and Design

- Selection software demonstration
- Product application
- Pipe work selection
- Unit application
- System limitations
- Controls and BMS

BUSINESS
PUBLIC
RESIDENTIAL

Room Air Conditioners for Field Engineers

- System operation
- Refrigeration pipe work design and installation
- Electrical installation and control wiring
- Refrigerant cycle operation
- Controller installation and operation
- Inverter control and operation
- Optional functions
- Commissioning
- "Hands on" system testing
- CSNET Manager and BMS interfacing overview

Controls for the Field Engineer

- System explanation
- Software and hardware set up
- IP address set up demonstration
- System commissioning
- Direct connection and connecting to LAN
- BMS integration

BUSINESS
RESIDENTIAL

Yutaki Air to Water Heat Pump for Field Engineers

- System operation
- Water pipe work design and application
- Controls
- Electrical installation and control wiring
- Refrigerant cycle operation
- Controller installation and operation
- Inverter control and operation
- Optional function
- Commissioning
- "Hands on" system testing

" On behalf of George McBride and myself who attended the Hitachi training course, I would like to thank the fantastic Hitachi Training Team on their presentation, technical support and understanding, smallest of manual detailing and outstanding hospitality. It was a great pleasure and we look forward to putting our new skills and knowledge of your products into keeping Scotland warm!"

Mark Haughey
Managing Director, Xpert Renewable Services



We're here to help you

Trusted systems with the customer service that you deserve

For product training dates and all the latest news from Hitachi, HVAC industry & renewables updates plus trends in engineering and social innovation follow us on twitter.

@hitachiairconUK

Hitachi official technical service

For fast, efficient technical help please contact our Hitachi trained engineers. They have an in-depth knowledge of the whole Hitachi range and can attend site to aid commissioning and or troubleshooting if required.

UK & Ireland Technical
(+44) 0203 901 0913

Aircon.technical@jci-hitachi.com

Spares

New European spares warehouse means most common spares available for immediate dispatch. Hi-Parts is an intuitive and simple to use online tool for spare parts enquiries and orders.

http://www.hitachi-hvac.co.uk/apps
(+44) 0203 901 0912

Aircon.spares@jci-hitachi.com

Warranty

Login securely, place and track warranty claims online whenever it suits you.
We believe in the quality of our product and so our warranty is with the equipment and remains it with it for the duration so you and your customers can believe in it too.

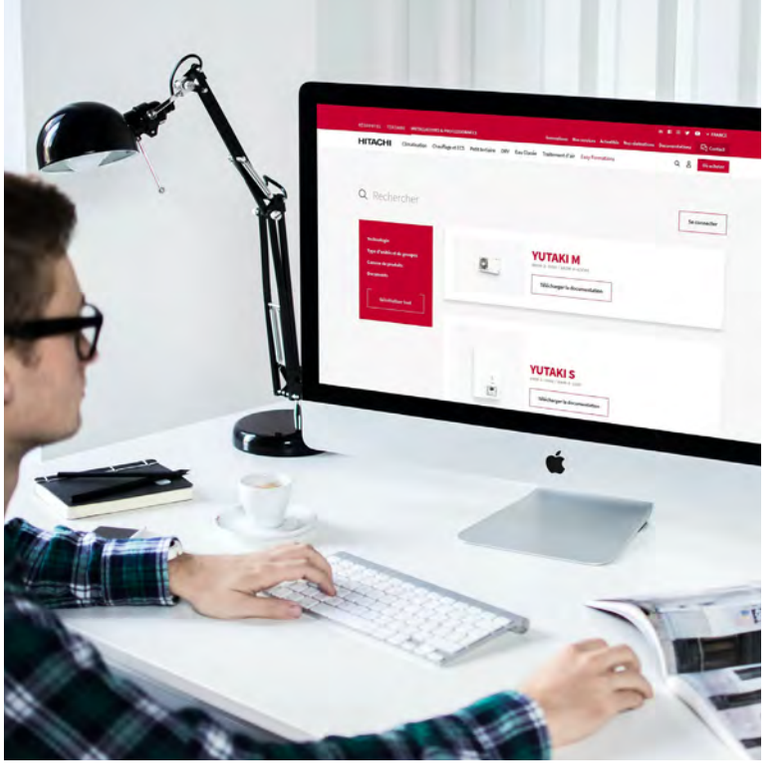
http://www.hitachi-hvac.co.uk/apps
(+44) 0203 901 0913

Aircon.warranty@jci-hitachi.com

Standard warranty terms are:

- RAC – 3 years
- IVX Utopia, System Free, Primary, Sigma VRF and Yutaki – 5 years (7 available subject to terms)
- Samurai L – 3 years
- Samurai M & Samurai S – 18 months.





Call us on:
Tel: + 44 (0)203 901 0912
Business hours: Mon - Fri 9am - 5pm

Or send an email to:
aircon.uk@jci-hitachi.com or
aircon.ireland@jci-hitachi.com

Erp labels for Eco design

Generate energy labels for all products covered by the EcoDesign Directive, including Lot 1, Lot 2, Lot 6, Lot 10 and Lot 21 products.

Free product training

We run a series of one day product specific training courses run from our aircademy training centres in Maidenhead, Dublin and Glasgow.

Contact our training team for the latest available dates.

Aircon.training@jci-hitachi.com

Alarm Codes

24/7 Troubleshooting with explanations and error code descriptions.

BIM Library

Find BIM files of our products for your projects.

A variety of useful tools are available for your use from our website

https://www.hitachi-hvac.co.uk/apps

Hi-toolkit for home

Online selection software for air to water heat pumps for domestic applications.

Yutaki Schematics

Access to hydraulic schematics and terminal board configuration for simplified installations.

Eurovent Certification. First Japanese manufacturer to certify its products at Eurovent

Hitachi's climate control systems are Eurovent certified for full reassurance in all types of installations. Certification guarantees the performance of our systems under the most demanding conditions giving consultants, installers and end users the peace of mind that the Hitachi systems they have selected will perform as specified.

EUROVENT CERTIFIED PERFORMANCE
www.eurovent-certification.com

The Yutaki range of air source heat pumps use latent heat in the ambient air to generate renewable heat energy and can provide all the heating and hot water needs in a home.



Heat pump Air/Water



Heating, cooling, and DHW

Yutaki S



p. 44

Yutaki S Combi



p. 50

Yutaki S80



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Yutaki M



p. 62

Selection guide

	Yutaki S	Yutaki S Combi	Yutaki S80	Yutaki M
				
	Heating, cooling	Heating, cooling and DHW	Heating	Heating, cooling
Range	**RWM-2~3NR1E** **RWM-4 ~10N1E**	**RWD-2~3RW1E-(220)S/K** **RWD-4~6NW1E-(220)S/K**	**RWH-4~6(V)NFE**	**RASM-2~3VRE** **RASM-4~6(V)NE**
Applications	Low temperature radiators, under-floor heating/cooling, fan convectors, DHW, and pool heating. Ideal for new housing and for replacing wall-mounted boilers.	Low temperature radiators, under-floor heating/cooling, fan convectors, built-in DHW, and pool heating. Ideal for homes with little space, thanks to the built-in DHW tank.	Low and/or high temperature radiators, under-floor heating, fan convectors (heating only), and pool heating. Ideal for facilities requiring high temperatures, such as replacing oil-fired boilers.	Low temperature radiators, under-floor heating/cooling, fan convectors, DHW, and pool heating. Compact appliance perfect for facilities with less inside space.
Rated heating capacity (kW)	4.3 - 24	4.3 - 16	11 - 16	4.3 - 16
COP 7°C outside/30 - 35°C water	5.25	5.25	5	5.25
Rated cooling capacity (kW)	4 - 17.5	4 - 10.5	-	4 - 10.5
EER 35°C outside/7 - 12°C water	4	4	-	3.54
Max. water outlet temperature °C	60	60	80	60
Heating operating range °C	-25 ~ +25	-25 ~ +25	-25 ~ +25	-25 ~ +25
Cooling operating range °C	+10 ~ +46	+10 ~+ 46	-	+10 ~ +46
DHW temperature Max. °C	-	+60	-	-
Compressor	Scroll & Rotary DC Inverter	Scroll & Rotary DC Inverter	Scroll DC Inverter	Scroll & Rotary DC Inverter
Efficiency	A+++	A+++	A+++	A+++

Yutaki 4.3 to 8kW R32: Refrigerant pipe diameters

		External unit		Refrigerant pipes		Indoor unit	
		Dimensions of the pipe connection		Between the outdoor unit and the indoor unit		Dimensions of the pipe connection	
Model	Pipe length	Gas pipes	Liquid pipe	Gas pipes	Liquid pipe	Gas pipes	Liquid pipe
2 HP	3~50 m	Ø12.7 (1/2")	Ø6.35 (1/4")	Ø12.7 (1/2")	Ø6.35 (1/4")	Ø15.88 (5/8") (*)	Ø6.35 (1/4")
2.5 HP	3~50 m						Ø9.52 (3/8") (*)
3 HP	3~27 m	Ø15.88 (5/8") (*)	Ø9.52 (3/8") (*)	Ø15.88 (5/8")	Ø6.35 (1/4")	Ø15.88 (5/8")	Ø9.52 (3/8") (*)
	27~50 m	Ø15.88 (5/8")	Ø9.52 (3/8")	Ø15.88 (5/8")	Ø9.52 (3/8")	Ø15.88 (5/8")	Ø9.52 (3/8") (*)

*For 2/2.5/3 HP models, the refrigerant pipes and the pipe connections of the indoor units and outdoor units have different diameters, which is why you must use adapters for the refrigerant pipes. These pipe adapters are provided with the outdoor unit:

	Pipe adapter	
Model	Gas pipes	Liquid pipe
2 HP	Ø15.88 → Ø12.7	-
2.5 HP	Ø15.88 → Ø12.7	Ø9.52 → Ø6.35
3 HP	-	Ø9.52 → Ø6.35 (x2)

Range of Air/Water heat pumps

			R32			R410A						
	Power (kW)		4.3	6.0	8.0	4.3	6.0	11.0	14.0	16.0	20.0	24.0
Split solutions	Yutaki outdoor units On all models	 Size 2.0 to 3.0 Size 4.0 to 10.0	RAS-2WHVRP1 (Single)	RAS-2.5WHVRP1 (Single)	RAS-3WHVRP1 (Single)			RAS-4WH(V)NPE (Single / Three)	RAS-5WH(V)NPE (Single / Three)	RAS-6WH(V)NPE (Single / Three)	RAS-8WHNPE (Three)	RAS-10WHNPE (Three)
			+ Outdoor units are the same for all Yutaki split models									
	Yutaki S Heating cooling		RWM-2.0R1E (Single)	RWM-2.5R1E (Single)	RWM-3.0R1E (Single)			RWM-4.0N1E (Single / Three)	RWM-5.0N1E (Single / Three)	RWM-6.0N1E (Single / Three)	RWM-8.0N1E (Three)	RWM-10.0N1E (Three)
								+ The single/3 phase hydraulic modules of these models are identical				
	Yutaki S Combi 200L / 260L Heating cooling DHW		RWD-2.0NRW1E-(220)S / K (Single)	RWD-2.5NRW1E-(220)S / K (Single)"	RWD-3.0NRW1E-(220)S / K (Single)			RWD-4.0NW1E-(220)S / K (Single / Three)	RWD-5.0NW1E-(220)S / K (Single / Three)	RWD-6.0NW1E-(220)S / K (Single / Three)		
								+ The single/3 phase hydraulic modules of these models are identical				
	Yutaki S 80 Heating							RWH-4.0(V)NFE (Single / Three)	RWH-5.0(V)NFE (Single / Three)	RWH-6.0(V)NFE (Single / Three)		
Packaged solutions	Yutaki M Heating cooling DHW	 Size 2.0 and 3.0 Size 4.0 to 6.0	RASM-2VRE (Single)		RASM-3VRE (Single)			RASM-4(V)NE (Single / Three)	RASM-5(V)NE (Single / Three)	RASM-6(V)NE (Single / Three)		

(V) = Single

Ultra reliable



Hitachi's Scroll & Rotary DC Inverter compressor was designed to increase seasonal efficiency and reliability by reducing energy consumption.

The compressor is particularly effective in between seasons, offering high efficiency under low partial loads.



The high-performance Yutaki range

“When your needs change, Yutaki adapts”

Every day you have to deal with the varying needs of your customers: heating, cooling in summer, DHW all year round... but many also want to connect their equipment to solar panels and heat their pool.
So, it is important to have a tailored system to be able to meet every kind of requirement. The Yutaki range is compatible with all types of water heating emitters: radiators, underfloor heating/cooling and fan convectors.
You can also ensure thermal comfort by area, with radiators upstairs and underfloor heating downstairs.

The Yutaki Monobloc and split range of heat pumps now incorporates R32 refrigerant for improved performance at less power for the new-build market. The retrofit ranges still use the R410A refrigerant.

High performance certified by its energy label

With the Yutaki range, you use less electricity, enjoy greater savings and cause less impact on the environment – with all its equipment awarded an energy rating of A+++.

The largest power range on the market

Yutaki Monobloc

The Hitachi monobloc system is designed for installation in any type of property, especially homes with limited space.

Being a compact system with a single unit installed outdoors means the available space indoors remains unchanged. Units provide hot water, heating and cooling without refrigeration connections so can be installed by a plumber.

Yutaki S and S Combi

Discover all the advantages of the Yutaki S and S COMBI that combine performance, efficiency, design, and ease of use.

① A low-energy pump
This low-consumption pump adapts its flow rate to the needs of domestic heating, achieving cost-savings of up to 60% compared to a traditional pump.

② A solution tailored to your needs
Even if there are additional power requirements, three-level electrical backup heater ensure heating comfort and DHW.

③ Reversible for year-round comfort
Enjoy the dual function that allows you to warm up in the winter and cool off in the summer (only on underfloor heating or fan convectors).

④ Built-in DHW
(on the Yutaki S COMBI model)
The stainless steel tank (220l) meets the DHW needs of a family of up to 5. The tank has dual protection for outstanding durability: with film coating and magnesium anode.

⑤ Clean water
With its anti-legionella properties, the DHW tank (220l), prevents bacteria from spreading, even if it is out of action for prolonged periods.

Yutaki S 80

Ideal for renovations

An exclusive 2-level compression system

① A first compression stage, in the shared outdoor unit of the entire Yutaki R410A range).



* 7°C outside / 35°C water.

A bundle of technology

Wizard

An intuitive 10-question configuration assistant to get your installation up and running in just 2 minutes. Simple, fast and always tailored to your needs.

Yutaki S



Yutaki S Combi



⑥ Simplified management by Hitachi

Hitachi thought up simplicity! Benefits:
- Intuitive interface.
- The timer-based program settings.
- Control of your ambient temperature settings and of DHW.
- The scope for managing a second heating zone.
- Heating management for your swimming pool.
- Electrical consumption reduced in standby mode.
- Management of your backup boiler.
- The control interface that can be used remotely (wired).

⑦ Energy savings with Inverter technology

The compressor developed and manufactured by Hitachi incorporates inverter technology. This enables the heat pump to modulate its operating performance to meet the needs of residential heating precisely. Inverter technology reduces consumption by 30% compared to a traditional compressor, creating a reduction in your electricity bill.

⑧ High-end DHW tank insulation

The use of NEOPOR technology offers much higher insulating properties than other insulation. Green and efficient, Neopor requires less material (5mm) for better performance and minimal energy losses.

⑨ Easy cleaning

The filter valve allows for quick cleaning without having to drain the system.

5.00

A HIGH COP
or 1KW consumed
=5.00kW heating

80°C

Yutaki S80
11.5kW to 16kW

② A second layer of compression for extremely cold temperatures, in the hydraulic module.



Yutaki S80 only

CONSTANT POWER -15°

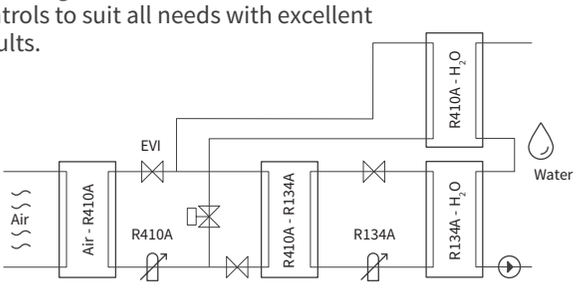
Uninterrupted comfort in cold weather

Your heat pump heats up your home, over one or multiple floors. Down to outside temperatures of -15°C, it provides constant heating power while continuing to produce water at 80°C in your radiators, without the need for heater elements.

Smart Cascade controls

The Yutaki S80 range features a Smart Cascade cycle. This exclusive Hitachi concept intelligently optimizes the performance of the heat pump. Several parameters regulate how one or two compressors work, resulting in significant energy savings and high annual performance.

4 exchangers and Smart Cascade controls to suit all needs with excellent results.



List of accessories and compatible combinations

	Description	Yutaki S	Yutaki S Combi	Yutaki S80	Yutaki M
PC-ARFH1E	Wired remote control for Yutaki	•	•	•	•
ATW-FCP-01	Front panel	•	•	•	
ATW-ITS-01	Wired temperature sensor	•	•	•	•
ATW-RTU-04	On/Off wireless thermostat	•	•	•	•
ATW-RTU-07	Intelligent wireless thermostat – Circuit 1	•	•	•	•
ATW-RTU-06	Intelligent wireless thermostat – Circuit 2	•	•	•	•
ATW-AOS-02	4-port auxiliary output box	•	•	•	•
AHP-SMB-01	Hi-Box: Hi Kumo and Hi Kumo PRO home-automation boxes (requires interface ATW-TAG-02)	•	•	•	•
1811527	Somfy Tahoma home-automation box	•	•	•	•
ATW-TAG-02	Hi Kumo / Hi Kumo PRO / SOMFY communication interface (requires interface AHP-SMB-01)	•	•	•	•
ATW-KNX-02	KNX communication interface	•	•	•	•
HC-A16MB	Modbus communication interface for Cascade (8max), with or without Cascade controller (2max), or to mix with VRF	•	•	•	•
ATW-MBS-02	Modbus Single communication interface	•	•	•	•
ATW-CKS-01	Yutaki S reversible kit 4.3 to 8kW	•			
ATW-CKS-02	Yutaki S reversible kit 11 to 16kW	•			

	Description	Yutaki S	Yutaki S Combi	Yutaki S80	Yutaki M
ATW-CKS-03	Yutaki S reversible kit 20 to 24kW	●			
ATW-CKM-01	Yutaki M reversible kit				●
ATW-CKSC-02	Yutaki S Combi reversible kit 4.3 to 16kW		●		
ATW-YCC-01	Cascade controller	●	●	●	●
ATW-YMM-01	Mirror box control				●
ATW-2TK-07	Non-integrated 2-zone mixing kit (Wall Mounted)	●	●	●	●
ATW-2TK-08	Integrated 2-zone mixing kit, only on model 220L		●		
ATW-AQT-01	Safety aquastat for underfloor heating	●	●	●	●
ATW-3WV-01	3-way directional inversion valve – application; DHW, swimming pool	●	●	●	●
ATW-DPOV-01	Differential discharge valve	●	●	●	●
ATW-HSK-01	Hydraulic Separator	●	●	●	●
ATW-WTS-02Y	Universal sensor for sanitary, hydraulic decoupling, 2nd circuit, swimming pool, solar, DHW tank if not DHWT Hitachi	●	●	●	●
ATW-2OS-02	2nd Outdoor temperature sensor	●	●	●	●
ATW-FWP-03	Kit to install separate DHW tank			●	
WEH 6E	Backup heater			●	●

Tools for your projects

Hi-Toolkit for Home

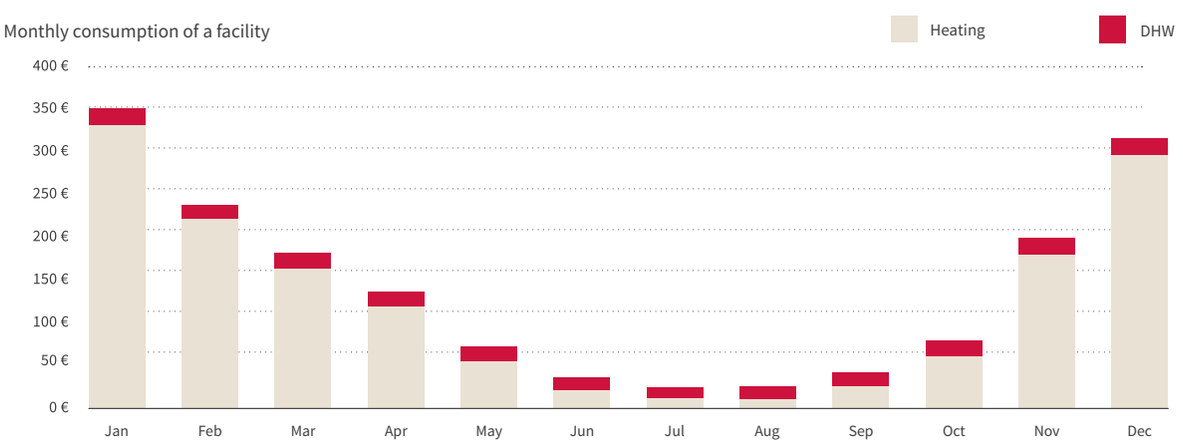
Weigh up the energy savings of installing Yutaki equipment.

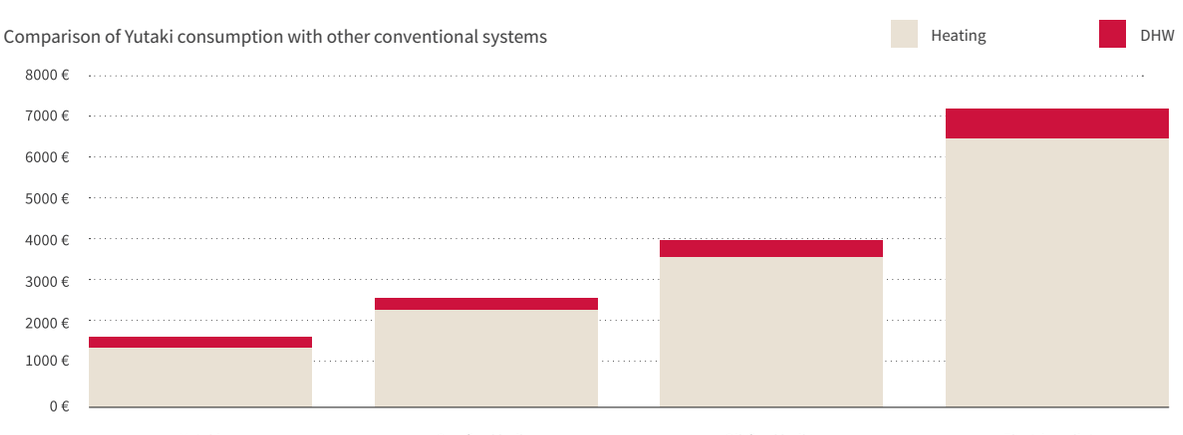
Hi-Toolkit for Home, air-source energy selection and simulation software.

This software allows you to select all the equipment from Hitachi's Yutaki air-source range in a very quick and easy way by generating an extensive report with all the information from the selected unit.

It includes a complete database of the annual temperatures of major cities so you can carry out an annual energy simulation for 8,760 hours of the year. After this simulation, the software also compares energy consumption and CO_2 emissions with other conventional heating equipment to assess the energy savings of installing Yutaki air-source equipment.

Use this link to go to the website:
www.hitachi-hitoolkit.com/heating





Get your hydraulics diagram in just a few clicks

Yutaki Applications, the free online tool for generated simplified hydraulic diagrams for the entire Yutaki range.

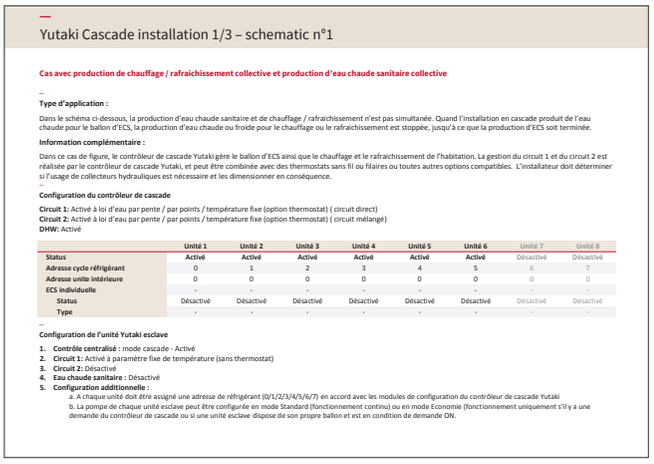
You can make a diagram of your system's main elements in a few simple steps, by answering a few basic questions.

It also makes it easier to install in the field by telling you exactly where each sensor, pump, and all the system's elements are connected on the electrical terminal board.

Use this link to go to the website:
www.yutaki-applications.com/en

Hydraulic setups

Get in touch with your usual contact at Hitachi for much more detailed hydraulic diagrams and the setup diagrams specific to your installation.



Yutaki Cascade installation 1/3 – schematic n°1

Cas avec production de chauffage / rafraichissement collective et production d'eau chaude sanitaire collective

Type d'application :

Dans le schéma ci-dessous, la production d'eau chaude sanitaire et de chauffage / rafraichissement n'est pas simultanée. Quand l'installation en cascade produit de l'eau chaude pour le ballon d'ECS, la production d'eau chaude ou froide pour le chauffage ou le rafraichissement est stoppée, jusqu'à ce que la production d'ECS soit terminée.

Information complémentaire :

Dans ce cas de figure, le contrôleur de cascade Yutaki gère le ballon d'ECS ainsi que le chauffage et le rafraichissement de l'habitation. La gestion du circuit 1 et du circuit 2 est réalisée par le contrôleur de cascade Yutaki, et peut être combinée avec des thermostats sans fil ou filaires ou toutes autres options compatibles. L'installateur doit déterminer si l'usage de collecteurs hydrauliques est nécessaire et les dimensionner en conséquence.

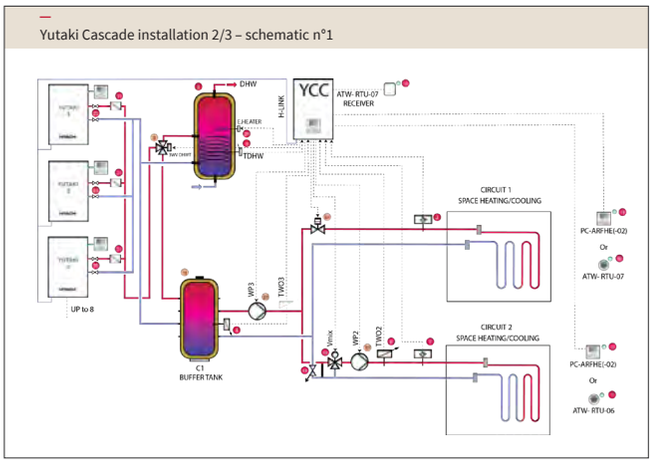
Configuration du contrôleur de cascade

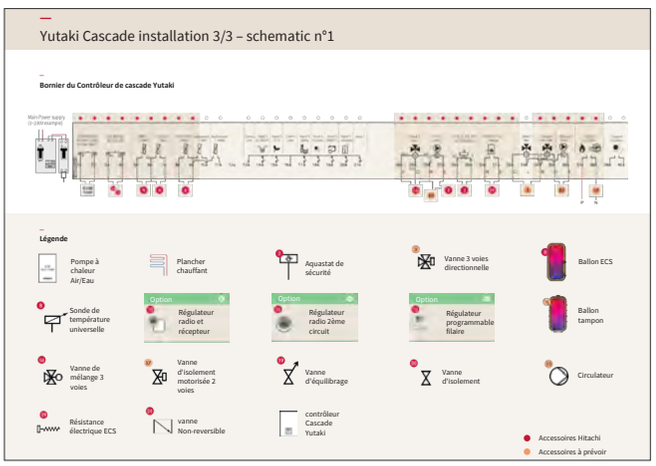
Circuit 1: Activé à loi d'eau par pente / par points / température fixe (option thermostat) (circuit direct)
Circuit 2: Activé à loi d'eau par pente / par points / température fixe (option thermostat) (circuit mélangé)
DHW: Activé

	Unité 1	Unité 2	Unité 3	Unité 4	Unité 5	Unité 6	Unité 7	Unité 8
Status	Activé	Activé	Activé	Activé	Activé	Activé	Désactivé	Désactivé
Adresse cycle réfrigérant	0	1	2	3	4	5	6	7
Adresse unite intérieure	0	0	0	0	0	0	0	0
ECS individuelle								
Status	Désactivé	Désactivé	Désactivé	Désactivé	Désactivé	Désactivé	Désactivé	Désactivé
Type	-	-	-	-	-	-	-	-

Configuration de l'unité Yutaki esclave

1. **Contrôle centralisé :** mode cascade - Activé
2. **Circuit 1:** Activé à paramètre fixe de température (sans thermostat)
3. **Circuit 2:** Désactivé
4. **Eau chaude sanitaire :** Désactivé
5. **Configuration additionnelle :**
   a. A chaque unité doit être assigné une adresse de réfrigérant (0/1/2/3/4/5/6/7) en accord avec les modules de configuration du contrôleur de cascade Yutaki
   b. La pompe de chaque unité esclave peut être configurée en mode Standard (fonctionnement continu) ou en mode Economie (fonctionnement uniquement s'il y a une demande du contrôleur de cascade ou si une unité esclave dispose de son propre ballon et est en condition de demande ON.





Hi Kumo PRO

The remote maintenance solution for our entire residential and small commercial buildings range.

Why choose Hi Kumo PRO?

Based on the Hi Kumo app, Hi Kumo PRO goes even further. It enables you as the installation technician / maintenance company to suggest a seriously high value-added service to your customer: remote maintenance. Via a web platform, you are just a click away from access to operating data in the event of an error code or malfunction. An end to wasting time on traveling between multiple sites. Diagnostics can be done remotely, very rapidly, even before a problem has an impact on your customer.
A gain in productivity for you, and increased satisfaction for your customer!

Functions

Fast diagnostics to optimize interventions thanks to a simple and user-friendly interface.



Access to real-time machine operating data*
- Operating status / mode
- Setpoint and actual Temp°.
- Temp° of the gas / discharge / evaporation.
- Compressor current / frequency.
- Water flow and temperatures.
- Pump speed.
- V3V position.



Access to 3 months of system records, simultaneous display of 6 parameters from a total of more than 80, including:
- Operating statuses.
- Alarms.
- Compressor frequency.
- Flows/temperatures…



Check the status, reboot and update Yutaki systems from the interface.



Access to the entire system library:
- Map or list view.
- Options to save systems as favorites.



Alarm data and troubleshooting help:
- Automatic email notifications.
- Online access to descriptions and troubleshooting help.
- Download the troubleshooting guide to email directly to the onsite technician.



Remote control:
- Access to the same control functions as the Hi Kumo solution except weekly programming.

https://hi-kumopro.com/#/login

* For Air / Air products, access restricted to data from the internal unit

What are the benefits of the Hi Kumo PRO service?

1. **The installation/ maintenance engineer** or the maintenance company purchases its annual license and makes a registration application to Hi Kumo PRO through its Hitachi dealer. The dealer provides them with the documents needed for Hitachi to create their PRO account.
2. **The end customer** acquires the Hi Kumo solution and its associated interfaces. The end user does not need to have a license.
3. **The installation/ maintenance engineer** or the maintenance company sends an access request to the end customer via its PRO space* (*Access may expire if the annual license is not renewed).
4. **The end customer** accepts the access request and the data processing policy.
5. **That's it, installation/ maintenance engineer** or the maintenance company has access to all the operating data, for unrivaled service.



Communication interfaces for AIR/WATER heat pumps (from 2016) + storage water heaters

AHP-SMB-01 *Hi-Box interface*
+
ATW-TAG-02 *Hi Kumo interface***
+

Annual license (for the maintenance company). Please contact your Hitachi retailer.

**Max. 1 interface per Hi Box



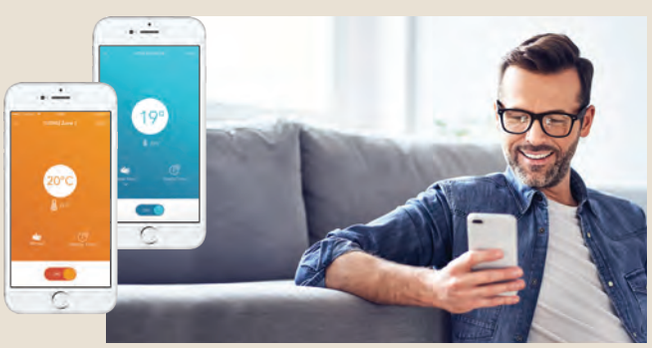
Even more services for the end customer with

Operate all of your new Hitachi residential equipment items remotely with a single application.

HI-KUMO

Hi Kumo

The IOS and Android Application





Functions

Range of Air/Water heat pumps

- Start/Stop
- Temperature control
- Fan speed
- Choice of sweeping direction
- Weekly programming
- Error code display

The Hi Kumo solution lets you remotely manage the entire range of Hitachi Air/Air or Air/Water heat pumps or thermodynamic tanks. A simple and user-friendly application brings real comfort to the end user. You think you forgot to turn off your air-conditioning when you left? Do you want to cool down or heat up a little before you get home? It couldn't be easier, with the Hi Kumo app!



Compatibility interface
Range of AIR/WATER heat pumps + storage water heaters

AHP-SMB-01 *Hi-Box interface*
+
ATW-TAG-02 *Hi Kumo interface***
+
ATW-HCD-01 H-Link adapter

** 1 max / Hi-Box interface

somfy.

Tahoma® from Somfy

The entire Hitachi residential range is now compatible with the Tahoma® range from Somfy.



Somfy® home-automation box



Communication interface for Air/Water Yutaki S, S Combi, S80, M and heat pumps

Yutaki S

All-in-one compact system: cooling and heating



NEW

Meets every requirement

Wide range of rated power outputs from 4.3 kW to 24.00 kW in heating mode and 4.00 kW to 17.50 kW in cooling mode.
11 to 24 kW model have a three-phase power supply.

Smaller dimensions

Its compact design and ease of installation make it ideal for small spaces. Models from 4.30 to 8.00 kW will even fit in a kitchen cupboard.

One of the best returns on the market

The Yutaki S range has one of the highest COP ratings on the market: up to 5.25.

It achieves the maximum energy rating of A+++, which translates into less energy consumption and bigger savings.

New remote control included as standard

An intuitive interface that can handle two zones, and features an ambiance sensor to be used as a separate modular thermostat.

Exclusive design to work in the most extreme conditions

Its wide operating range allows the equipment to work in extreme outdoor conditions: from -25°C to 46°C.

Less consumption

A water outlet temperature of up to 60°C even at -5°C outside, without the need for an additional electrical heater, for significant savings.

Controls and remote controls (see page 48)

Wired remote control

PC-ARFH2E

Included

Wireless Intelligent Thermostat

ATW-RTU-07

Other

- 2-zone mixing kit with 3-way valve and wall-mounted

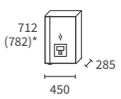
  ATW-2TK-07

- Hi-Box
  AHP-SMB-01
- Hi Kumo interface for Hi-Box
  ATW -TAG-02

(for more, see p.42-43)

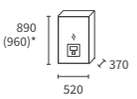
Indoor units

Yutaki S Mini



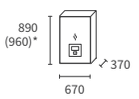
RWM-2.0R1E
RWM-2.5R1E
RWM-3.0R1E

Yutaki S Medium



RWM-4.0N1E
RWM-5.0N1E
RWM-6.0N1E

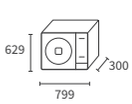
Yutaki S Big



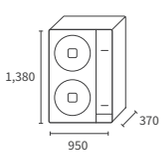
RWM-8.0N1E
RWM-10.0N1E

Outdoor units





RAS-2WHVRP1
RAS-2.5WHVRP1
RAS-3WHVRP1



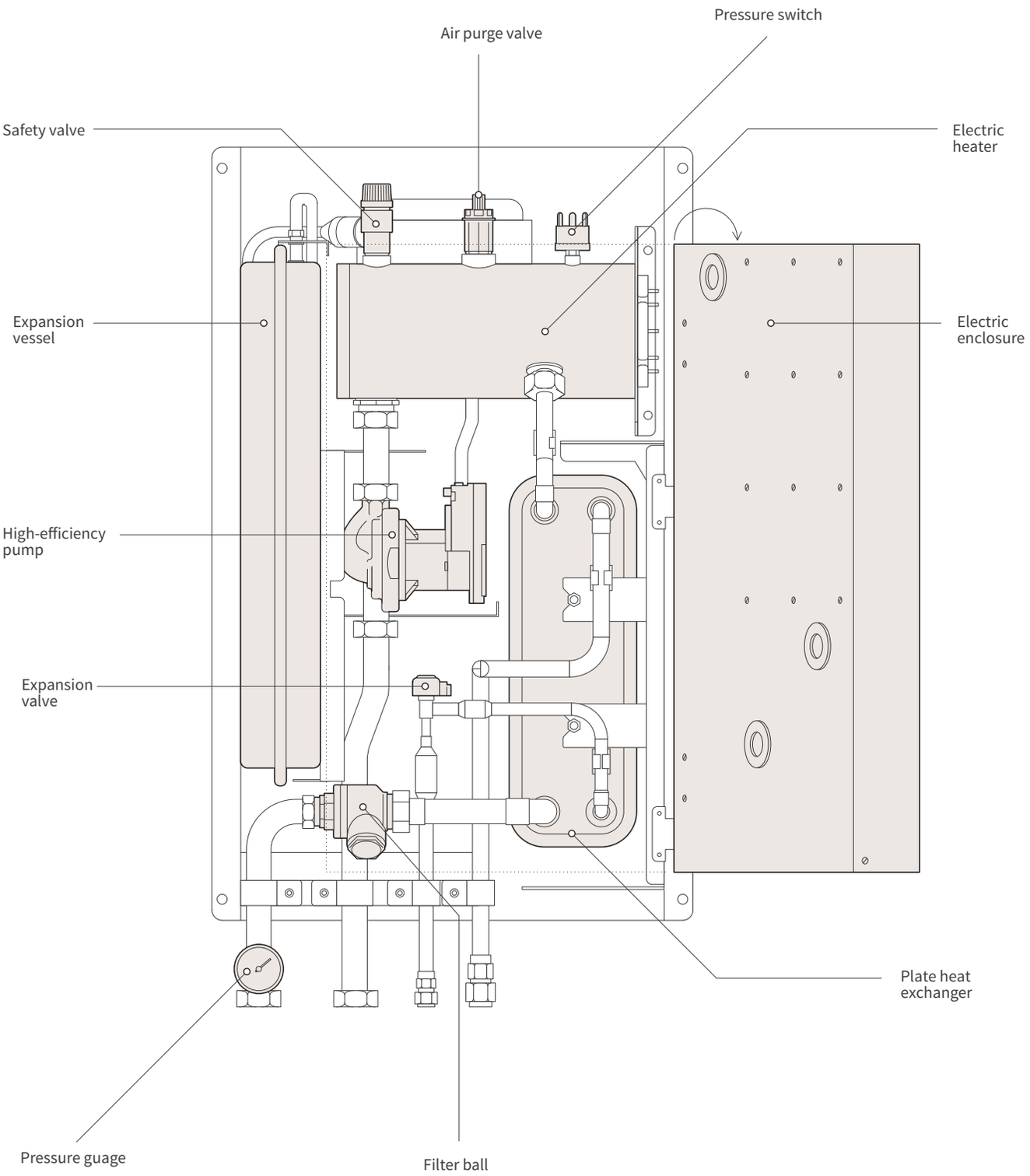
RAS-4WH(V)NPE
RAS-5WH(V)NPE
RAS-6WH(V)NPE
RAS-8WHNPE
RAS-10WHNPE

* with connections.

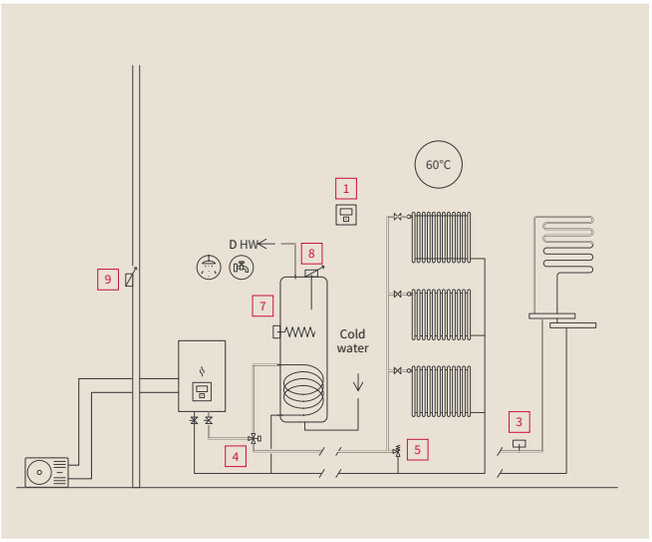
Model			R32 REFRIGERANT			R410A REFRIGERANT				
			YUTAKI S 4.3kW	YUTAKI S 6kW	YUTAKI S 8kW	YUTAKI S 11kW	YUTAKI S 14kW	YUTAKI S 16kW	YUTAKI S 20kW	YUTAKI S 24kW
Performance, heating										
Min./rated/max. heating capacity (7°C outside. / 35°C water)		kW	1.85 / 4.3 / 6.5	1.85 / 6 / 8.6	2.1 / 8 / 11	4.3 / 11 / 15.2	4.8 / 14 / 16.7	5.5 / 16 / 17.8	9 / 20 / 25.5	10 / 24 / 32
Rated/max. power heating (-7°C outside / 35°C water)		kW	4.5 / 5.3	5.3 / 6.2	5.8 / 7.5	9.7 / 10.6	11.5 / 12	12 / 13	14.2 / 17.9	16.5 / 21
Rated/max. power heating (-7°C outside / 45°C water)		kW	- / 5	- / 5.8	- / 6.67	10 / 10	11 / 11.6	11.5 / 12.5	15 / 16.6	16.5 / 18.5
Rated/max. power heating (-7°C outside / 55°C water)		kW	4 / 4.2	4.7 / 5	5 / 5.5	8.7 / 9.7	9.7 / 11.2	10.5 / 12	12.5 / 14.5	15.5 / 17.3
Rated power input for heating (7°C outside / 35°C water)		kW	0.77	1.21	1.6	2.2	2.97	3.5	4.65	5.59
COP (7°C outside / 35°C water) in accordance with EN14511		-	5.25	4.8	4.6	5	4.71	4.57	4.3	4.29
SCOP average climate 35°C / 55°C in accordance with EN14825		-	4.6 / 3.4	4.5 / 3.25	4.5 / 3.2	4.8 / 3.5	4.48 / 3.43	3.9 / 3.23	3.88 /3.13	3.6 / 2.98
Seasonal heating energy efficiency ηs (35°C) Single/Three[1]		%	181	177	177	187 / 186	174 / 176	153 / 152	- / 150	- / 141
Seasonal heating energy efficiency ηs (55°C) Single/Three[1]		%	133	127	125	136 / 135	133 / 133	125 / 125	- / 120	- / 116
Energy rating 35°C / 55°C		-	A+++/A++			A+++/A++		A++/A++	A++/A+	A+/A+
Temperature range of water outlet (heating mode)		°C	20/60°C			20/60°C				
Max. temperature at the water outlet in thermodynamic-only mode		°C	60°C up to -5 °C outside			60°C up to -10 °C outside				
Performance of Cooling model (optional)										
Rated/max. power in cooling mode (35°C outside / 7°C water) (reversible)		kW	4 / 6	5.3 / 6	6.5 / 7	7.2 / 11.8	9.5 / 12.6	10.5 / 13.7	14 / 16.4	17.5 / 20.6
Rated power input in cooling mode (35°C outside / 7°C water)		kW	1.17	1.54	2.14	2.18	2.95	3.72	4.48	4.08
EER (reversible model)		-	4	3.6	3.35	3.54	3.54	3.31	3.12	2.81
Seasonal reversible energy efficiency ηs (35°C) Single/Three[1]		%	186	180	179	189/189	176/176	153/153	-/152	-/142
Seasonal reversible energy efficiency ηs (55°C) Single/Three[1]		%	132	128	126	136/136	133/133	127/126	-/122	-/118
Indoor units			RWM-2.0R1E	RWM-2.5R1E	RWM-3.0R1E	RWM-4.0N1E	RWM-5.0N1E	RWM-6.0N1E	RWM-8.0N1E	RWM-10.0N1E
Backup electrical heater as standard / 3-level		kW	3 (1+1+1)	3 (1+1+1)	3 (1+1+1)	6 (2+2+2)	6 (2+2+2)	6 (2+2+2)	9 (3+3+3)	9 (3+3+3)
Net weight		kg	35	36	37	46	48	48	60	62
Dimensions (H x L x D)		mm	712 x 450 x 285			890 x 520 x 370			890 x 670 x 370	
Sound power		dB(A)	37			39			47	
Remote control			Included			Included			Included	
Hydraulic features										
Expansion vessel		L	6			6			10	
Water flow (min / rated / max)		m³/h	0.5/0.77/1.9	0.6/1.03/2	0.6/1.29/2.1	1/1.89/2.9	1.1/2.41/3	1.2/2.75/3	2/3.44/4.5	2.2/4.13/4.6
Hydraulic heating connections (male/male valves supplied)		inches	1"			1" 1/4			1" 1/4	
Min. system water capacity		L	28			38	46	55	76	79
Electrical features										
Power supply		-	230V / 1Ph / 50Hz			230V / 1Ph / 50Hz or 400V / 3Ph / 50Hz			400V / 3Ph / 50Hz	
SINGLE PHASE 230V	Fuse size with backup heater	A	16			32			-	
	Cable width (mm²) / max. length (m) [2]	-	3 x 2.5 / 14			3 x 6 / 28			-	
	Fuse size with backup heater + immersion / Yutaki S Optional	A	32			50			-	
	Cable width (mm²) / max. length (m) [2]	-	3 x 6 / 28			3 x 10 / 30			-	
THREE PHASE 400V	Fuse size with backup heater	-	-	-	-	16			16	
	Cable width (mm²) / max. length (m) [2]	-	-	-	-	5 x 2.5 / 20			5 x 5 / 20	
	Fuse size with backup heater + immersion/ Yutaki S Optional	-	-	-	-	32			32	
	Cable width (mm²) / max. length (m) [2]	-	-	-	-	5 x 6 / 20			5 x 10 / 20	
Premium outdoor units			RAS-2WHVRP1	RAS-2.5WHVRP1	RAS-3WHVRP1	RAS-4WH(V)NPE	RAS-5WH(V)NPE	RAS-6WH(V)NPE	RAS-8WHNPE	RAS-10WHNPE
Sound pressure level at 1m / Sound power		dB(A)	46 / 61	47 / 63	54 / 69	49 / 64	50 / 65	50 / 67	59 / 73	60 / 74
Air flow rate		m³/h	2526		2982	4800	5400	6000	7620	8040
Dimensions (H x L x D)		mm	629 x 799 x 300			1380 x 950 x 370				
Net weight		kg	45		44	103			137	139
Operating ranges in Cooling / Heating / DHW mode		°C	+10~+46DB // -20~+25DB // -20~+35			+10~+46DB // -25~+25DB // -25~+35				
Refrigeration characteristics										
Diameter of refrigerant pipes (Liq - Gas)		inches	1/4" - 1/2"*		1/4" - 5/8" 3 to 27m* 3/8" 5/8" 27 to 50m*	3/8" 5/8"			3/8" 1"	1/2" 1"
Min./max. length / max. level difference		m	3 - 50 / 20			5 - 75 / 20			5 - 70 / 20	
Initial pre-charged refrigerant / Additional load		kg / g / m	1.2 for 10m / 15	1.3 for 10m / 15	1.3 for 10m / 32	3.3 for 15m / 60	3.4 for 15m / 60		5 for 15m / 65	5.3 for 15m / 120
Refrigerant		-	R32			R410A				
Compressor		-	SCROLL		ROTARY	SCROLL				
Electrical features										
Power supply		-	230V / 1Ph / 50Hz			230V / 1Ph / 50Hz or 400V / 3Ph / 50Hz			400V / 3Ph / 50Hz	
SINGLE PHASE 230V	Fuse size	A	16	16	16	32			-	-
	Cable width (mm²) / max. length (m) [2]	-	3 x 2.5 / 28	3 x 2.5 / 24	3 x 4 / 21	3 x 10 / 30			-	-
THREE PHASE 400V	Fuse size	A	-	-	-	16		16	25	25
	Cable width (mm²) / max. length (m) [2]	-	-	-	-	5 x 4 / 16		5 x 4 / 16	5 x 6 / 26	
Int./Ext. connection (shielded)		mm²	2 x 0.75			2 x 0.75				

[1] Non-regulated seasonal energy efficiency, Keymark-certified. [2] Data given for reference purposes only. Compliant with the applicable electrical standards.
(V) = single. * 2/2.5/3HP R32 models have different diameters for the cooling gas pipes, cooler connection groups, and indoor units. For that reason, use the adapters provided with the outdoor unit. Refer to the table page 33.

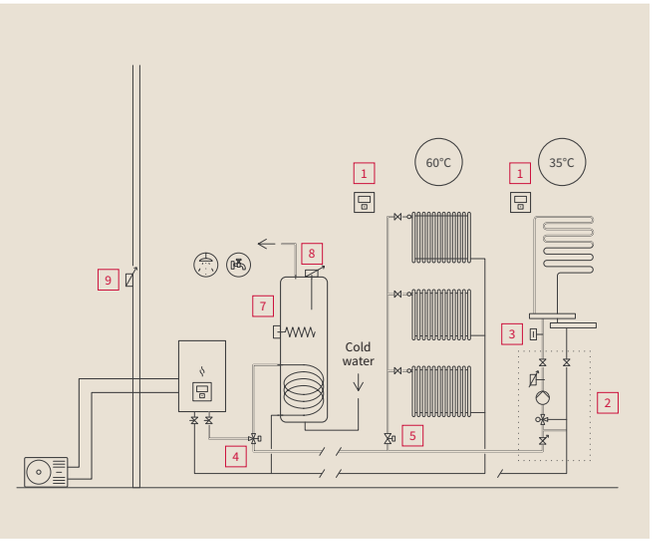
Internal design



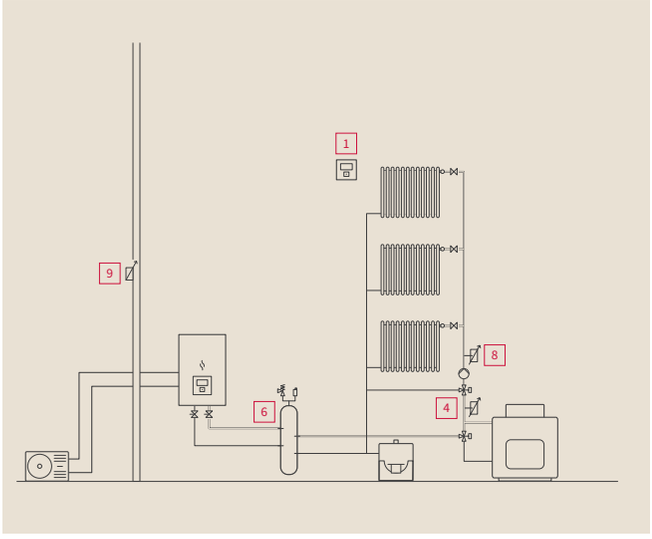
Yutaki S hydraulic setups



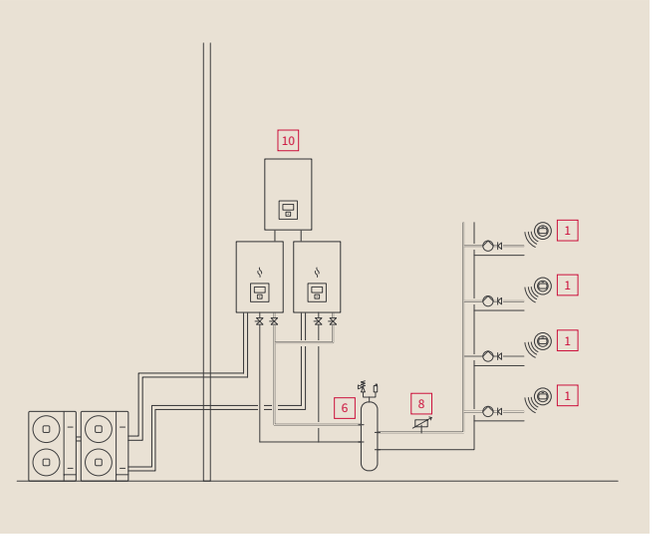
1 zone of radiators or underfloor heating with or without DHW



2 zones with radiator circuits and underfloor heating with or without DHW



Bivalent system with Boiler: 1 radiator circuit



Cascade: separate centralized heating application

See the following page for accessories.

Yutaki S hydraulic controls and accessories



Wired remote control

PC-ARFH2E

Included.



Front panel

Use if moving the remote control in the environment.

ATW-FCP-01



Wired temperature sensor

ATW-ITS-01



On / Off wireless thermostat

ATW-RTU-04



Intelligent wireless thermostat

Circuit 1.

ATW-RTU-07



Intelligent wireless thermostat

Circuit 2.

ATW-RTU-06



Auxiliary output box

4 ports available: operation, alarm, cooling, heat-OFF.

ATW-AOS-02



Hi-Box: Hi Kumo and Hi Kumo PRO home automation boxes

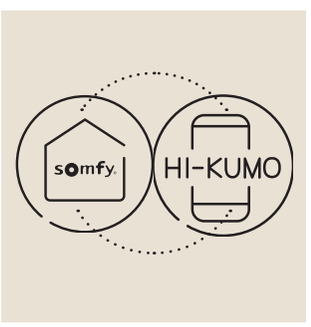
AHP-SMB-01

(for more, see p.42-43)



Somfy® home-automation box

1811527



Somfy® / Hi Kumo interface

Communication interface. Integrates into Somfy® or Hi Kumo environment.

ATW-TAG-02



KNX® communication interface

Communication interface.KNX® environment integration.

ATW-KNX-02



Modbus communication interface

Communication interface.Modbus® environment integration.

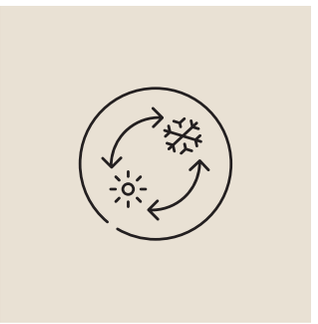
ATW-MBS-02



Usage meter (RT2012)

Schneider® brand.

Not sold by Hitachi.



Reversible kit

Equipment required to run in cooling mode.

ATW-CKS-01 (Yutaki S Mini 2 / 2.5 / 3 HP)
ATW-CKS-02 (Yutaki S Medium 4 / 5 / 6 HP)
ATW-CKS-03 (Yutaki S Power 8 / 10 HP)

10



Cascade controller

Manage a cascade up to 8 Yutaki models from the same range and with the same power output (single/three-phase).

ATW-YCC-03

2



2-zone mixing kit - wall mounted

This accessory is essential if you want to maintain 2 distinct temperature settings.

ATW-2TK-07

3



Aquastat, floor-mounted

This accessory is essential for floor-mounted heaters (DTU 65-14).

ATW-AQT-01

4



3-way directional inversion valve

DHW and swimming pool applications.

ATW-3WV-01

5



Differential pressure valve

This accessory ensures a constant flow through the heat pump condenser.

ATW-DPOV-01

6



Hydraulic separator for heat pump

This accessory hydraulically separates the transmitter and boiler network from that of the heat pump.

ATW-HSK-01

7



DHW storage tank

Stainless steel tank.

A range of tanks and buffer vessels are available from 150l to 300l.

8



Universal water temperature sensor

DHW, hydraulic decoupling, Circuit 2, swimming pool, solar (required if the tank is not a Hitachi DHWT).

ATW-WTS-02Y

9



2nd outdoor temperature sensor

ATW-2OS-02

Yutaki S Combi

Stainless steel tank: DHW, heating and cooling



NEW

Wide range of power outputs

The Yutaki S Combi range is suitable for all types of installations thanks to its wide range of power outputs.
From 4.30kW to 16.00 kW in heating mode and 4.00 kW to 10.50 kW in cooling mode.

Save without causing more noise

The Yutaki S Combi can be installed in kitchens due to its small size and low noise level. Integrating the DHW storage tank into the indoor unit frees up as much as 70% more room compared to a separate tank.

New Remote control included as standard

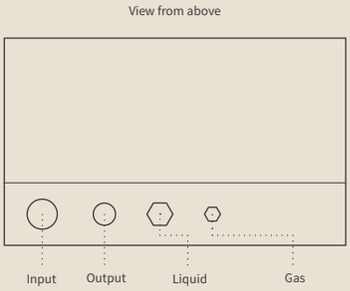
An intuitive interface that can handle two zones, and features an ambiance sensor to be used as a separate modular thermostat.

Easy to install and maintain

Compared to a system with separate tank, the Yutaki S Combi can be installed in less time and at a lower cost because:
- All water and refrigerant connections are aligned at the top.
- Most components are accessible from the front.
- Easy access to information from the LCD remote control without having to open the indoor unit.

Stainless steel tank with built-in element

The Yutaki S Combi range comes with an additional electrical heating element. In an emergency, you can activate the DHW BOOST function at the push of a button.



Controls and remote controls (see page 54)

Wired remote control
PC-ARFH2E

Included

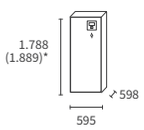
Wireless remote control
ATW-RTU-07

Other
- 2-zone kit with 3-way valve and wall-mounted diffuser pump ATW-2TK-07
- Integrated 2 zone mixing kit for 220 litre models (2 circuits) ATW-2TK-08

- Hi-Box AHP-SMB-01
- Hi Kumo interface for Hi-Box ATW -TAG-02

(for more, see p.42-43)

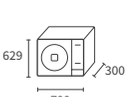
Indoor units



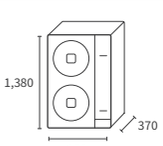
RWD-2.0RW1E
RWD-2.5RW1E
RWD-3.0RW1E **RWD-5.0NW1E**
RWD-4.0NW1E **RWD-6.0NW1E**

Outdoor units





RAS-2WHVRP1
RAS-2.5WHVRP1
RAS-3WHVRP1



RAS-4WH(V)NPE
RAS-5WH(V)NPE
RAS-6WH(V)NPE

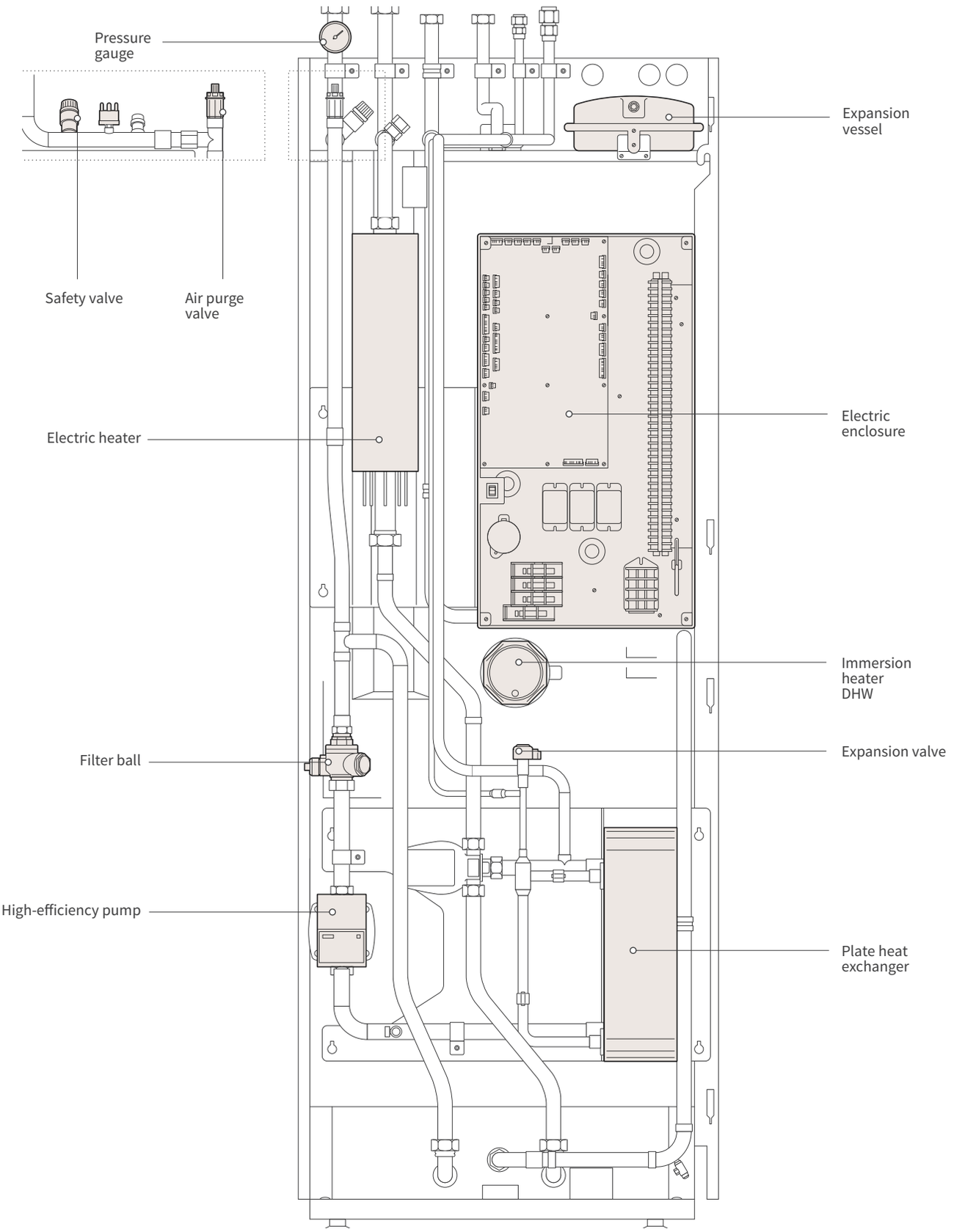
* with connections.

Yutaki S Combi

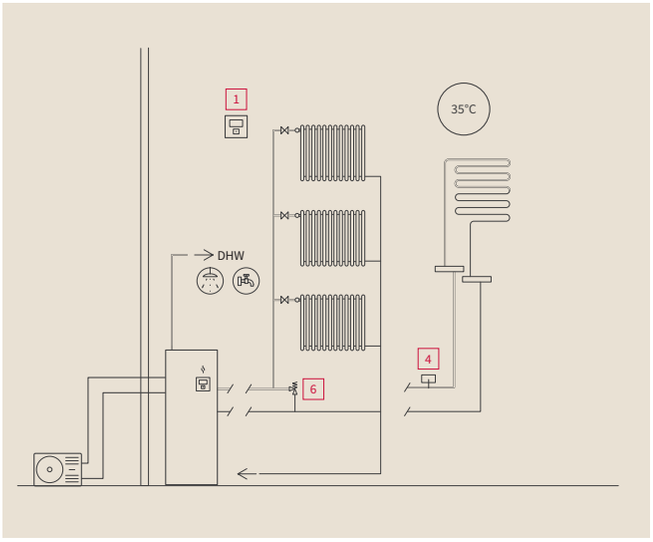
Model			R32 REFRIGERANT			R410A REFRIGERANT		
			YUTAKI S COMBI 4.3kW	YUTAKI S COMBI 6kW	YUTAKI S COMBI 8kW	YUTAKI S COMBI 11kW	YUTAKI S COMBI 14kW	YUTAKI S COMBI 16kW
Performance, heating								
Min./rated/max. heating capacity (7°C outside. / 35°C water)		kW	1.85 / 4.3 / 6.5	1.85 / 6 / 8.6	2.1 / 8 / 11	4.3 / 11 / 15.2	4.8 / 14 / 16.7	5.5 / 16 / 17.8
Rated/max. power heating (-7°C outside / 35°C water)		kW	4.5 / 5.3	5.3 / 6.2	5.8 / 7.5	9.7 / 10.6	11.5 / 12	12 / 13
Rated/max. power heating (-7°C outside / 45°C water)		kW	- / 5	- / 5.8	- / 6.67	10 / 10	11 / 11.6	11.5 / 12.5
Rated/max. power heating (-7°C outside / 55°C water)		kW	4 / 4.2	4.7 / 5	5 / 5.5	8.7 / 9.7	9.7 / 11.2	10.5 /12
Rated power input for heating (7°C outside / 35°C water)		kW	0.77	1.21	1.6	2.2	2.97	3.5
COP (7°C outside / 35°C water) in accordance with EN14511		-	5.25	4.8	4.6	5	4.71	4.57
SCOP average climate 35°C / 55°C in accordance with EN14825		-	4.6 / 3.4	4.5 / 3.25	4.5 / 3.2	4.8 / 3.5	4.48 / 3.43	3.9 / 3.23
Seasonal heating energy efficiency ηs (35°C) Single/Three[1]		%	181	177	177	187 / 186	175 / 174	153 / 152
Seasonal heating energy efficiency ηs (55°C) Single/Three[1]		%	130	127	125	136 / 135	133 / 132	125 / 125
Energy rating 35°C / 55°C		-	A+++ / A++			A+++ / A++		A++ / A++
Temperature range of water outlet (heating mode)		°C	20 / 60°C			20 / 60°C		
Max. temperature at the water outlet in thermodynamic-only mode		°C	60°C up to -5 °C outside			60°C up to -10 °C outside		
DHW performance								
DHW COP in accordance with EN16147		-	3.20			3.10		
Seasonal energy efficiency nwh		%	130			127		
DHW energy rating		-	A+			A+		
Temperature range of water outlet (DHW mode)		°C	30 / 75°C			30 / 75°C		
Performance of Cooling model (optional)								
Backup electrical heater as standard / 3-level		kW	4 / 5	5.3 / 6	6.5 / 7	7.2 / 11.8	9.5 / 12.6	10.5 / 13.7
Immersion DHW element as standard		kW	1.17	1.54	2.14	2.18	2.95	3.72
Net weight (220L)		-	4	3.6	3.35	3.54	3.54	3.31
Seasonal reversible energy efficiency ηs (35°C) Single/Three[1]		%	186	180	179	189 / 189	176 / 176	153 / 153
Seasonal reversible energy efficiency ηs (55°C) Single/Three[1]		%	132	128	126	137 / 136	133 / 133	126 / 126
Indoor units			RWD-2.0RW1E-(220)S / K	RWD-2.5RW1E-(220)S / K	RWD-3.0RW1E-(220)S / K	RWD-4.0NW1E-(220)S / K	RWD-5.0NW1E-(220)S / K	RWD-6.0NW1E-(220)S / K
Backup electrical heater as standard / 3-level		kW	3 (1+1+1)	3 (1+1+1)	3 (1+1+1)	6 (2+2+2)	6 (2+2+2)	6 (2+2+2)
Immersion DHW element as standard		kW	3	3	3	3	3	3
Net weight (220L)		kg	120	120	121	124	126	126
Dimensions (H x L x D)		mm	1788 x 595 x 598			1788 x 595 x 598		
Sound power		dB(A)	37			39		
Volume of DHW tank / Material of DHW tank		L	220 L / stainless steel			220 L / stainless steel		
Remote control			Included			Included		
Hydraulic features								
Expansion vessel		L	6			6		
Water flow (min / rated / max)		m^3/h	0.5 / 0.77 / 1.8	0.6 / 1.03 / 1.9	0.6 / 1.29 / 1.9	1 / 1.89 / 2.7	1.1 / 2.41 / 2.8	1.2 / 2.75 / 2.8
Hydraulic connections for heating (male/male valves supplied)		inches	1”			1”		
Hydraulic connections for DHW		inches	3/4”			3/4”		
Min. system water capacity		L	28			38	46	55
Electrical features								
Power supply		-	230V / 1Ph / 50Hz			230V / 1Ph / 50Hz or 400V / 3Ph / 50Hz		
SINGLE PHASE 230V	Fuse size with backup heater + immersion	A	32			50		
	Cable width (mm^2) / max. length (m)[2]	-	3 x 6 / 28			3 x 10 / 30		
THREE PHASE 400V	Fuse size with backup heater + immersion	-	-	-	-	25		
	Cable width (mm^2) / max. length (m)[2]	-	-	-	-	5 x 6 / 20		
Premium outdoor units			RAS-2WHVRP1	RAS-2.5WHVRP1	RAS-3WHVRP1	RAS-4WH(V)NPE	RAS-5WH(V)NPE	RAS-6WH(V)NPE
Sound pressure level at 1m / Sound power		dB(A)	46 / 61	47 / 63	54 / 69	49 / 64	50 / 65	50 / 67
Air flow rate		m^3/h	2526		2982	4800	5400	6000
Dimensions (H x L x D)		mm	629 x 799 x 300			1380 x 950 x 370		
Net weight		kg	45		44	103		
Operating ranges in Cooling / Heating / DHW mode		°C	+10~+46 // -20~+25 // -20~+35			+10~+46 // -25~+25 // -25~+35		
Refrigeration characteristics								
Diameter of refrigerant pipes (Liq - Gas)		inches	1/4” - 1/2”*		1/4” - 5/8” 3 to 27m* 3/8” 5/8” 27 to 50m*	3/8” 5/8”		
Min./max. length / max. level difference		m	3 - 50 / 20			5 - 75 / 20		
Initial pre-charged refrigerant / Additional load		kg / g / m	1.2 for 10m / 15	1.3 for 10m / 15	1.3 for 10m / 32	3.3 for 15m / 60	3.4 for 15m / 60	
Refrigerant			R32			R410A		
Compressor			SCROLL		ROTARY	SCROLL		
Electrical features								
Power supply			230V / 1Ph / 50Hz			230V / 1Ph / 50Hz or 400V / 3Ph / 50Hz		
SINGLE PHASE 230V	Fuse size	A	16			32		
	Cable width (mm^2) / max. length (m)[2]	-	3 x 2.5 / 28	3 x 2.5 / 24	3 x 4 / 21	3 x 6 / 30		
THREE PHASE 400V	Fuse size	A	-	-	-	16		
	Cable width (mm^2) / max. length (m)[2]	-	-	-	-	5 x 4 / 16		
Int./Ext. connection (shielded)		mm^2	2 x 0.75			2 x 0.75		

[1]Non-regulated seasonal energy efficiency, Keymark-certified. [2] Data given for reference purposes only. Compliant with the applicable electrical standards. (V) = single.
* 2/2.5/3HP R32 models have different diameters for the cooling gas pipes, cooler connection groups, and indoor units. For that reason, use the adapters provided with the outdoor unit. Refer to the table on page 33.

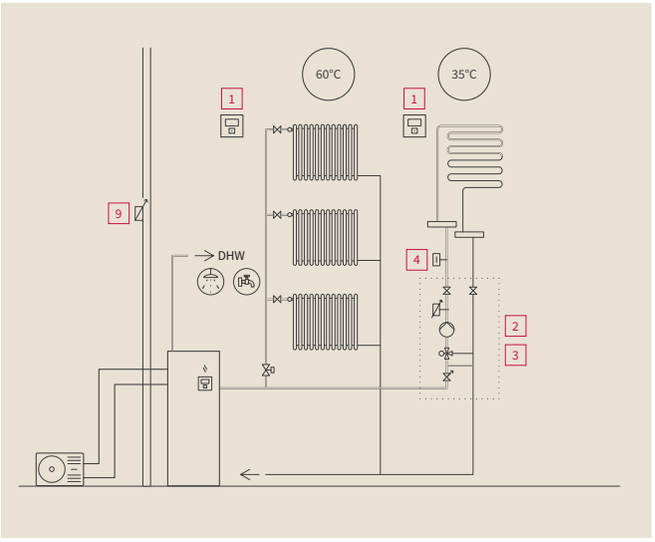
Internal design



Yutaki S Combi hydraulic setups



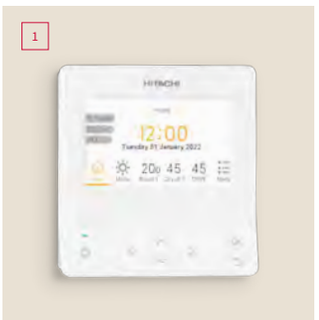
1-circuit heating with radiators or underfloor heating + DHW



2-circuit heating with radiator circuits and underfloor heating + DHW

See the following page for accessories.

Yutaki S Combi hydraulic controls and accessories



Wired remote control

PC-ARFH2E

Included.



Front panel

Use if moving the remote control in the environment.

ATW-FCP-01



Indoor Wired temperature sensor

ATW-ITS-01



On / Off wireless thermostat

ATW-RTU-04



Wireless intelligent thermostat

Circuit 1.

ATW-RTU-07



Wireless intelligent thermostat for 2nd circuit

Circuit 2.

ATW-RTU-06



Auxiliary output box

4 ports available: operation, alarm, cooling, heat-OFF.

ATW-AOS-02



Hi-Box: Hi Kumo and Hi Kumo PRO home automation boxes

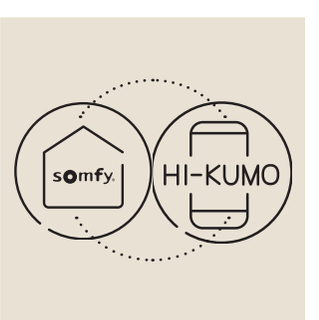
AHP-SMB-01

(for more, see p.42-43)



Somfy® home-automation box

1811527



Somfy® / Hi Kumo interface

Communication interface. Integrates into Somfy® or Hi Kumo environment.

ATW-TAG-02



KNX® communication interface

Communication interface.KNX® environment integration.

ATW-KNX-02



Modbus communication interface

Communication interface.Modbus® environment integration.

ATW-MBS-02



Usage meter (RT2012)

Schneider® brand.

Not sold by Hitachi.



Reversible kit

Equipment required to run in cooling mode.

ATW-CKSC-02

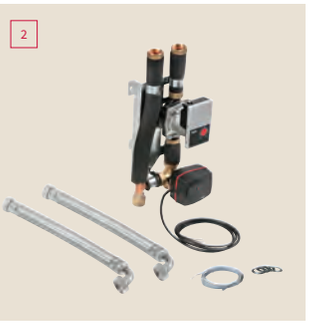


Cascade controller

Manage a cascade up to 8 Yutaki models from the same range and with the same power output (single/three-phase).

ATW-YCC-03

2

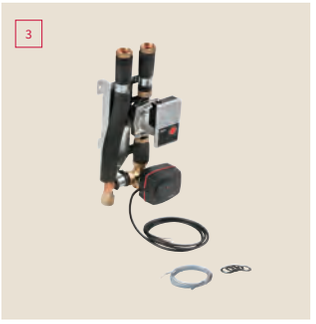


2-zone integrated mixing kit

(220L tank only).

ATW-2TK-08

3



2-zone mixing kit - wall mounted

This accessory is essential if you want to maintain 2 distinct temperature settings.

ATW-2TK-07

4



Aquastat, floor-mounted

This accessory is essential for floor-mounted heaters (DTU 65-14).

ATW-AQT-01

5



3-way directional inversion valve

DHW and swimming pool applications.

ATW-3WV-01

6



Differential pressure valve

This accessory ensures a constant flow through the heat pump condenser.

ATW-DPOV-01

7



Hydraulic separator for heat pump

This accessory hydraulically separates the transmitter and boiler network from that of the heat pump.

ATW-HSK-01

8



Universal water temperature sensor

DHW, hydraulic decoupling, Circuit 2, swimming pool, solar (required if the tank is not a Hitachi DHWT).

ATW-WTS-02Y

9



Outdoor temperature sensor

ATW-2OS-02

Yutaki S80

Achieving water temperatures up to 80°C
without an electric backup heater



Smart Cascade controls

The Yutaki S80 range has a Smart Cascade cycle, (unique on the market), which automatically adjusts the heat pump's operation according to heating needs. In this way, when there's less need for heating (water temperature up to 53°C), the heat pump uses only the refrigerant R410A; and when this requirement increases (water temperature up to 80°C), the system activates the second cycle of the refrigerant R134A. This minimizes consumption and guarantees uninterrupted comfort. (Fig. 1)

Modular system to adapt to every customer requirement

Meeting all market needs, by adding a a separate tank as big as 3,000 litres to the Yutaki S80 range, the system can provide plenty of DHW to go around in shared residential buildings.

Year-round continuous heating up to -25°C

This equipment heats the water up to 80°C by using renewable energy, including to extreme temperatures as low as -25°C.

Easy to install and maintain

The design allows you to easily access water and refrigerant connections, as they are placed in the top part of the indoor unit.

Fig. 1: Smart Cascade cycle diagram

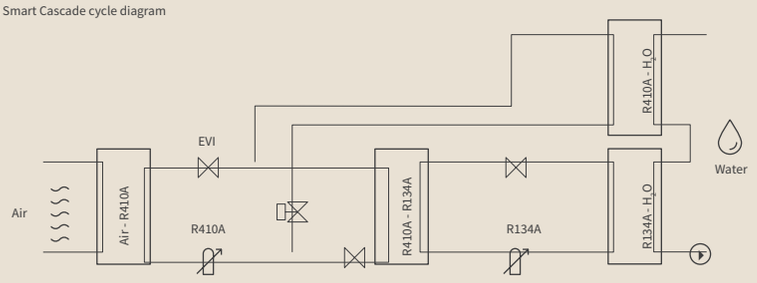
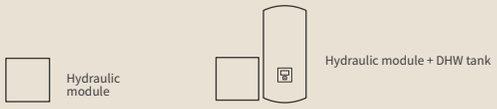


Fig. 2



controls and remote controls (see page 60)

Wired remote control

PC-ARFH1E

Not included

Wireless remote control

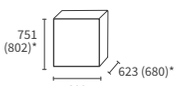
ATW-RTU-07

Other

- 2-zone kit with 3-way valve and wall-mounted diffuser pump
  ATW-2TK-07
- Hi-Box
  AHP-SMB-01
- Hi Kumo interface for Hi-Box
  ATW -TAG-02

(for more, see p.42-43)

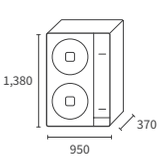
Indoor units



RWH-4.0VNFE
RWH-5.0VNFE
RWH-6.0VNFE

Outdoor units





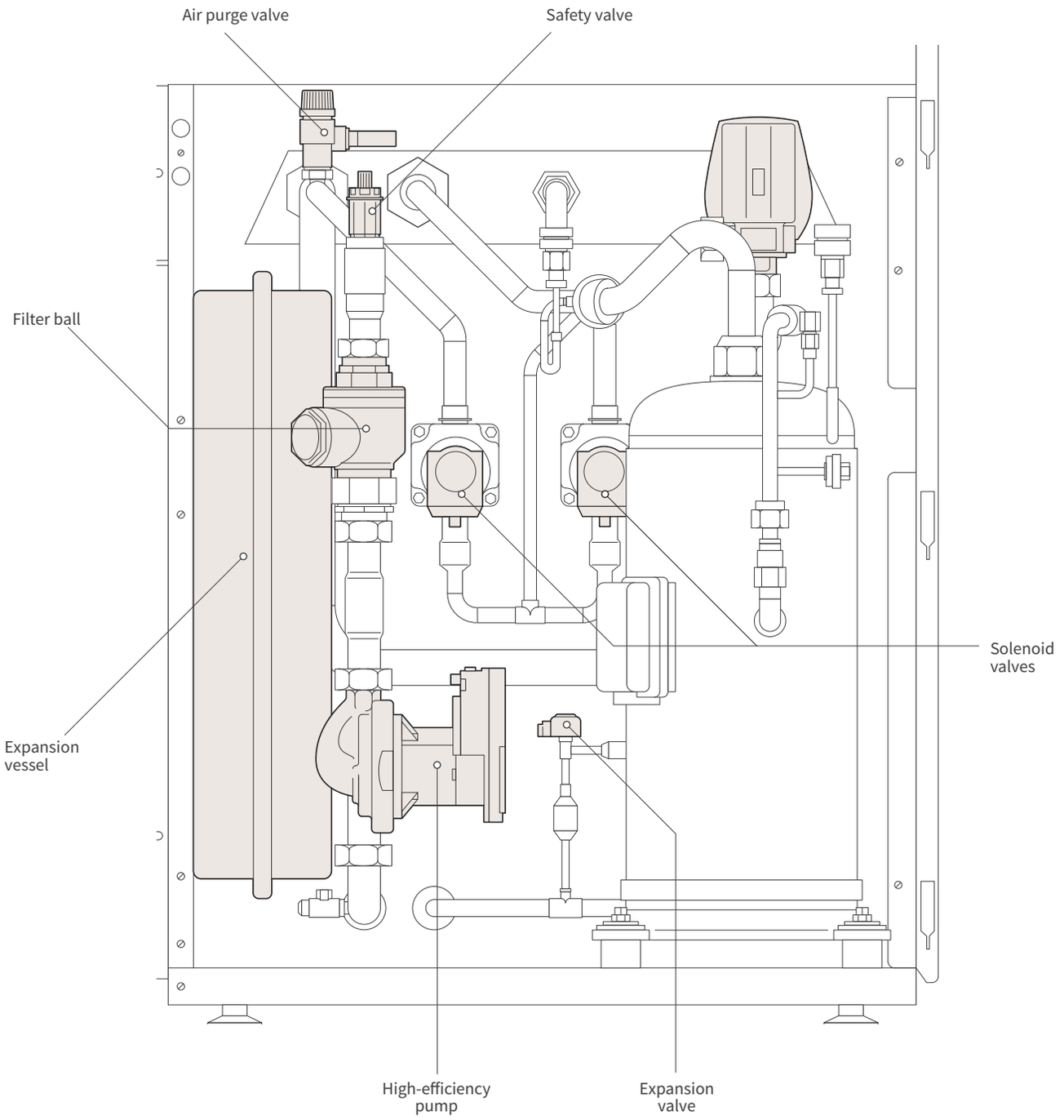
RAS-4WH(V)NPE
RAS-5WH(V)NPE
RAS-6WH(V)NPE

* with connections.

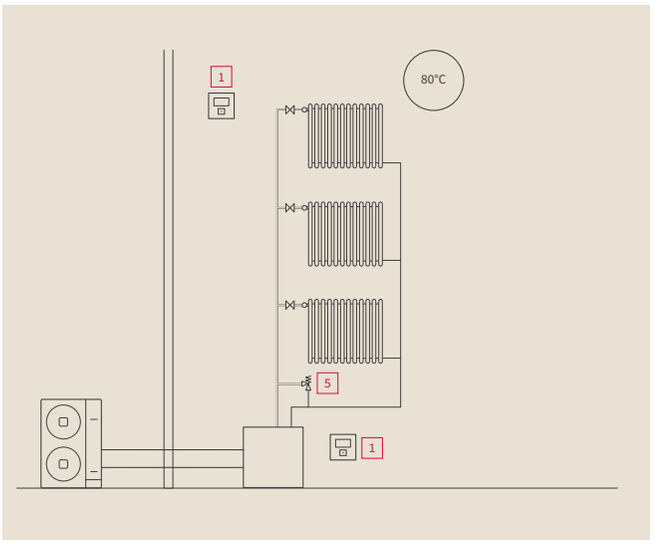
Model			R410A + R134A REFRIGERANT		
			YUTAKI S80 11kW	YUTAKI S80 14kW	YUTAKI S80 16kW
Performance, heating					
Min./rated/max. heating capacity (7°C outside. / 35°C water)		kW	11 / 15.2	14 / 16.7	16 / 17.8
Rated/max. power heating (-7°C outside / 35°C water)		kW	9.7 / 10.6	11.5 / 12.2	12.1 / 13
Rated/max. power heating (-7°C outside / 45°C water)		kW	11 / 12.5	14 / 14.5	16 / 16
Rated/max. power heating (-7°C outside / 55°C water)		kW	11 / 12.5	14 / 14.5	16 / 16
Rated power input for heating (7°C outside / 35°C water)		kW	2.2	2.97	3.5
COP (7°C outside / 35°C water) in accordance with EN14511		-	5	4.71	4.57
SCOP average climate 35°C / 55°C in accordance with EN14825		-	4.75 / 3.63	4.43 / 3.35	3.88 / 3.23
Seasonal heating energy efficiency ηs (35°C) Single/Three[1]		%	187 / 183	174 / 171	152 / 150
Seasonal heating energy efficiency ηs (55°C) Single/Three[1]		%	142 / 140	131 / 129	126 / 125
Energy rating 35°C / 55°C		-	A+++ / A++		A++ / A++
Temperature range of water outlet (heating mode)		°C	20 / 80°C		
Max. temperature at the water outlet in thermodynamic-only mode		°C	80°C down to -20°C outside		
Indoor units			RWH-4(V)NFE	RWH-5(V)NFE	RWH-6(V)NFE
Net weight Single / Three phase		kg	135 / 137	139 / 146	139 / 146
Dimensions (H x L x D)		mm	751 x 600 x 623		
Sound power		dB(A)	57	57	58
Remote control		-	Not included		
Hydraulic features					
Expansion vessel		L	12		
Water flow (min / rated / max)		m^3/h	1 / 1.89 / 2.8	1.1 / 2.41 / 3.2	1.2 / 2.75 / 3.2
Hydraulic heating connections (male/male valves supplied)		inches	1" 1/4		
Min. system water capacity		L	40	50	50
Refrigeration characteristics					
Refrigerant		-	R134A		
Refrigerant charge		kg	1.9		
Compressor		-	SCROLL		
Electrical features					
Power supply		-	230V / 1Ph / 50Hz or 400V / 3Ph / 50Hz		
SINGLE PHASE 230V	Fuse size	A	25	32	32
	Cable width (mm^2) / max. length (m) [2]	-	3 x 6		
THREE PHASE 400V	Fuse size	A	10	10	10
	Cable width (mm^2) / max. length (m) [2]	-	5 x 2.5		
Premium outdoor units			RAS-4WH(V)NPE	RAS-5WH(V)NPE	RAS-6WH(V)NPE
Sound pressure at 1m / Sound Power		dB(A)	49 / 61	50 / 63	50 / 64
Air flow rate		m^3/h	4800	5400	6000
Dimensions (H x L x D)		mm	1380 x 950 x 370		
Net weight		kg	103		
Operating ranges for heating / DHW		°C	-25 / +25 // -25 / +35		
Refrigeration characteristics					
Diameter of refrigerant pipes (Liq - Gas)		inches	3/8" 5/8"		
Min./max. length / max. level difference		m	5 - 75 / 20		
Initial pre-charged refrigerant / Additional load		kg / g / m	3.3 for 15m / 60	3.4 for 15m / 60	
Refrigerant		-	R410A		
Compressor		-	SCROLL		
Electrical features					
Power supply		-	230V / 1Ph / 50Hz or 400V / 3Ph / 50Hz		
SINGLE PHASE 230V	Fuse size	A	32		
	Cable width (mm^2) / max. length (m) [2]	-	3 x 10 / 30		
THREE PHASE 400V	Fuse size	A	16		
	Cable width (mm^2) / max. length (m) [2]	-	5 x 4 / 16		
Int./Ext. connection (shielded)		mm^2	2 x 0.75		

[1] Non-regulated seasonal energy efficiency, Keymark-certified. [2] Data given for reference purposes only. Compliant with the applicable electrical standards. (V) = single.

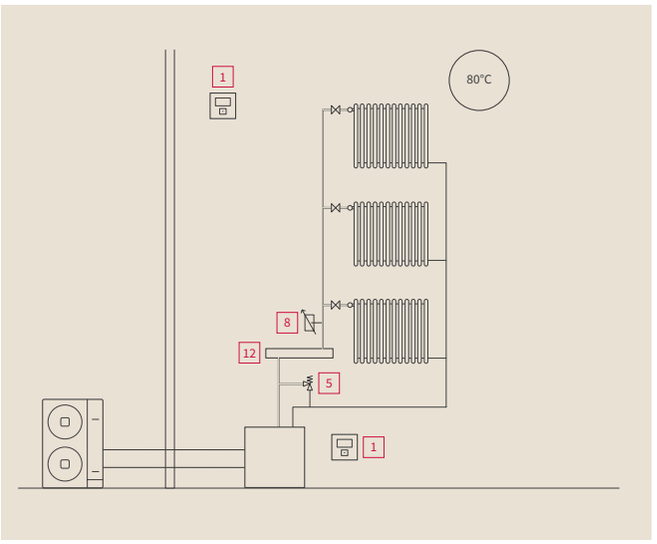
Internal design



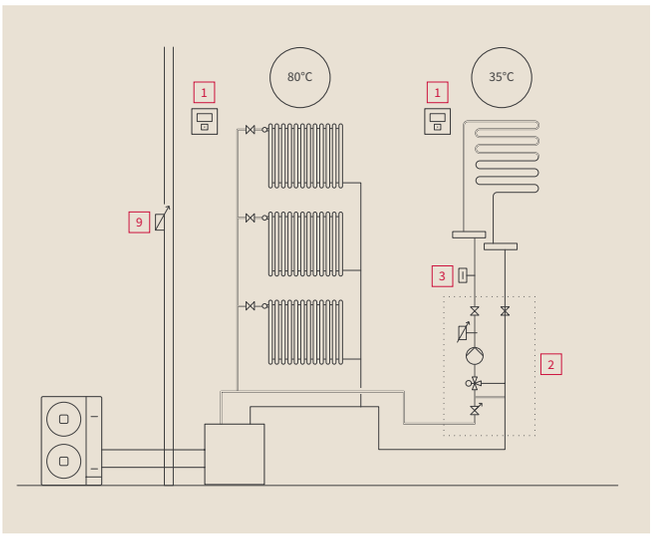
Hydraulic setups
Yutaki S80



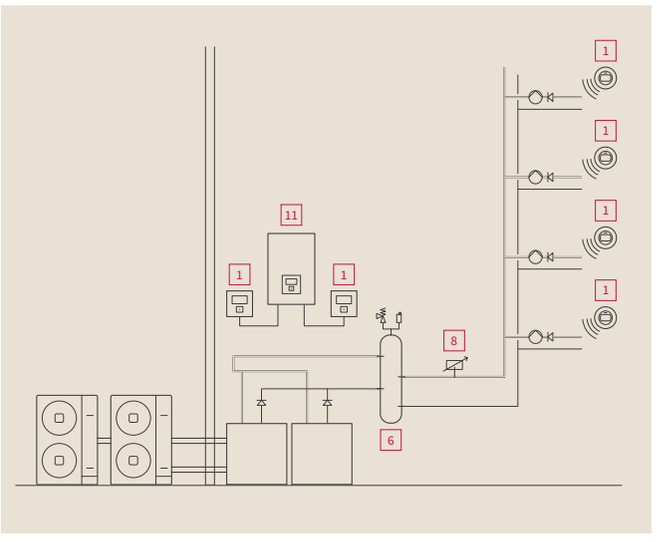
Boiler replacement
1-circuit heating



Boiler replacement
1-circuit heating



Boiler replacement
2-circuit heating



Boiler replacement
Cascade: separate centralized heating application

See the following page for accessories.

Yutaki S80
hydraulic controls and accessories

1



Wired remote control

PC-ARFH1E

Not included with the heating-only version.



Front panel

Use if moving the remote control in the environment.

ATW-FCP-01

1



Indoor temperature sensor

ATW-ITS-01

1



On / Off wireless thermostat

ATW-RTU-04

1



Wireless intelligent thermostat

Circuit 1.

ATW-RTU-07

1



Wireless intelligent thermostat for 2nd circuit

Circuit 2.

ATW-RTU-06



Auxiliary output box

4 ports available: operation, alarm, cooling, heat-OFF.

ATW-AOS-02



Hi-Box: Hi Kumo and Hi Kumo PRO home automation boxes

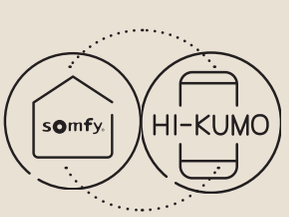
AHP-SMB-01

(for more, see p.42-43)



Somfy® home-automation box

1811527



Somfy® / Hi Kumo interface

Communication interface. Integrates into Somfy® or Hi Kumo environment.

ATW-TAG-02



KNX® communication interface

Communication interface.KNX® environment integration.

ATW-KNX-02



Modbus communication interface

Communication interface.Modbus® environment integration.

ATW-MBS-02



Usage meter (RT2012)

Schneider® brand.

Not sold by Hitachi.

AEM-EM-2105 (single-phase)
For three-phase, please contact us

11

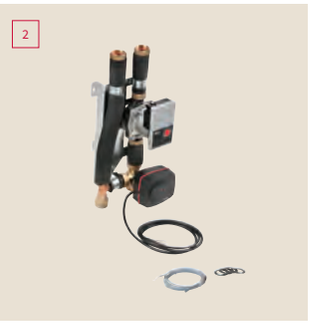


Cascade controller

Manage a cascade up to 8 Yutaki models from the same range and with the same power output (single/three-phase).

ATW-YCC-01

2



2-zone mixing kit - wall mounted

This accessory is essential if you want to maintain 2 distinct temperature settings.

ATW-2TK-07

3



Aquastat, floor-mounted

This accessory is essential for floor-mounted heaters (DTU 65-14).

ATW-AQT-01

4



3-way directional inversion valve

DHW and swimming pool applications.

ATW-3WV-01

5



Differential pressure valve

This accessory ensures a constant flow through the heat pump condenser.

ATW-DPOV-01

6



Hydraulic separator for heat pump

This accessory hydraulically separates the transmitter and boiler network from that of the heat pump.

ATW-HSK-01



DHW storage tank

Stainless steel tank.

A range of tanks and buffer vessels are available from 150L to 300L.

8



Universal water temperature sensor

Sanitary, hydraulic decoupling, 2nd circuit, swimming pool, solar. (required if the tank is not a Hitachi DHWT).

ATW-WTS-02Y

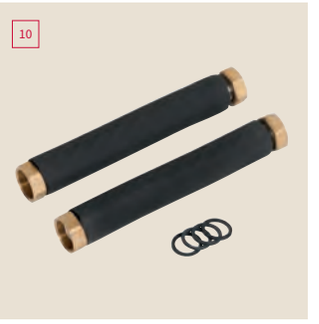
9



Outdoor temperature sensor

ATW-2OS-02

10



Flexible water pipe

ATW-FWP-03

12



Electric heater

WEH-6E

Yutaki M

No refrigerant connections:
heating, cooling, and DHW



Perfect for small spaces

This one-stop heating solution is ideal for small spaces, consisting only of one unit installed outside the home. Your indoor space is therefore completely untouched.

Installation time

Installing a monobloc is fast and economical as all the parts are self-contained and there is no need to connect refrigerant pipework.

Cooling and heating on the same system, all year round

Combining the Yutaki M integral unit with the reversible kit, an accessory that reverses the operation of the heat pump, gives you maximum comfort throughout the year. The equipment provides heating in the winter and cool air in the summer.

Easy, smart controls

On the remote control with LCD screen you can set up daily and weekly programs, manage the water temperature, operating modes, etc. (Fig. 1)

Fig. 1



PC-ARFH1E controller

Controls and remote controls (see page 66)

Wired remote control

PC-ARFH1E

Not included

Wireless remote control

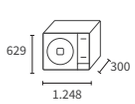
ATW-RTU-07

Other (price excluding taxes):

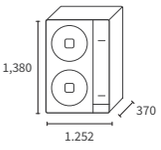
- 2-zone kit with 3-way valve and wall-mounted diffuser pump
  ATW-2TK-07
- Hi-Box
  AHP-SMB-01
- Hi Kumo interface for Hi-Box
  ATW -TAG-02

(for more, see p.42-43)

Outdoor units



RASM-2VRE
RASM-3VRE

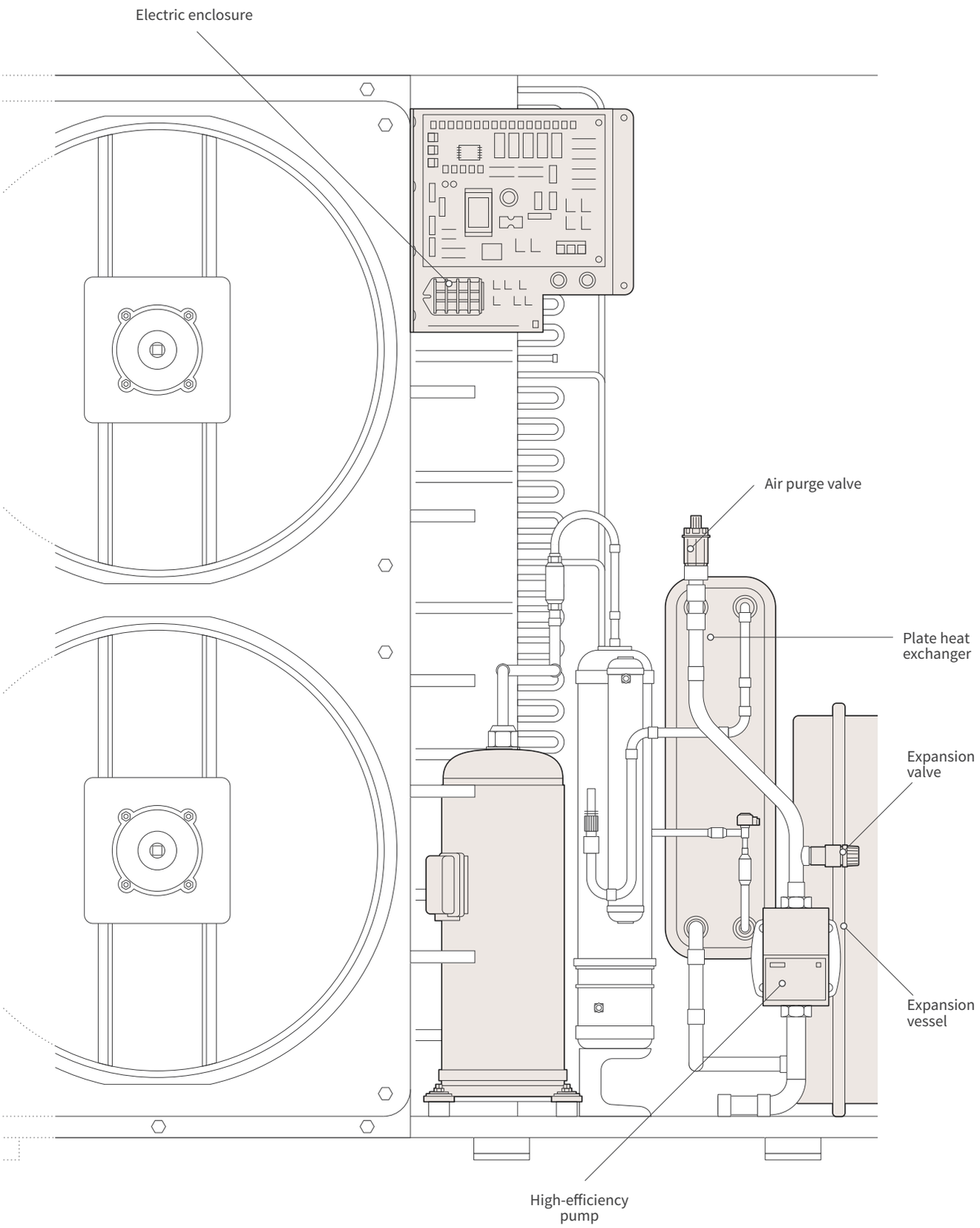


RASM-4(V)NE
RASM-5(V)NE
RASM-6(V)NE

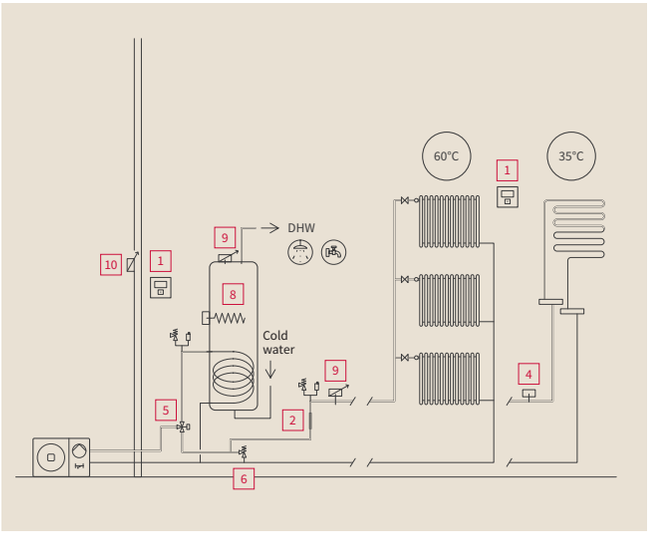
Model			R32 REFRIGERANT		R410A REFRIGERANT		
			YUTAKI M 4.3kW	YUTAKI M 8kW	YUTAKI M 11kW	YUTAKI M 14kW	YUTAKI M 16kW
Performance, heating							
Min./rated/max. heating capacity (7°C outside. / 35°C water)		kW	1.85 / 4.3 / 6.5	2.1 / 8 / 11	11 / 15.2	14 / 16.7	16.0 / 17.8
Rated/max. power heating (-7°C outside / 35°C water)		kW	4.5 / 5.3	5.8 / 7.5	9.7 / 10.6	11.5 / 12	12 / 13
Rated/max. power heating (-7°C outside / 45°C water)		kW	/ 5	/ 6.67	10 / 10.3	11 / 11.6	11.5 / 12.5
Rated/max. power heating (-7°C outside / 55°C water)		kW	4 / 4.2	5 / 5.5	8.7 / 9.8	9.7 / 11.2	10.5 / 12
Rated power input for heating (7°C outside / 35°C water)		kW	1	1.94	2.2	2.97	3.5
COP (7°C outside / 35°C water) in accordance with EN14511		-	5.25	4.6	5	4.71	4.57
SCOP average climate 35°C / 55°C in accordance with EN14825		-	4.73 / 3.48	4.55 / 3.25	4.8 / 3.5	4.48 / 3.43	3.9 / 3.23
Seasonal heating energy efficiency ηs (35°C) Single/Three[1]		%	181	177	187 / 186	175 / 174	153 / 152
Seasonal heating energy efficiency ηs (55°C) Single/Three[1]		%	133	125	136 / 135	133 / 133	125 / 125
Energy rating 35°C / 55°C		-	A+++ / A+++		A+++ / A++		A++ / A++
Temperature range of water outlet (heating mode)		°C	20 / 60°C		20 / 60°C		
Max. temperature at the water outlet in thermodynamic-only mode		°C	60°C up to -5°C outside		60°C up to -10°C outside		
Performance in Cooling mode (optional)							
Rated/max. power in cooling mode (35°C outside / 7°C water) (reversible)		kW	4 / 5	6.5 / 7	7.2 / 11.8	9.5 / 12.6	10.5 / 13.7
Rated power input in cooling mode (35°C outside / 7°C water)		kW	0.8	1.7	2.18	2.95	3.72
EER (reversible model)		-	4	3.35	3.3	3.22	2.82
Seasonal reversible energy efficiency ηs (35°C) Single/Three[1]		%	186	179	189	176	153
Seasonal reversible energy efficiency ηs (55°C) Single/Three[1]		%	136	127	137	134	126
Monoblock			**RASM-2VRE**	**RASM-3VRE**	**RASM-4(V)NE**	**RASM-5(V)NE**	**RASM-6(V)NE**
Backup electrical heater (optional)		kW	6 (2 + 2 + 2)	6 (2 + 2 + 2)		6 (2 + 2 + 2)	
Net weight		kg	76	78	131	133	133
Dimensions (H x L x D)		mm	704 x 1248 x 300			1380 x 1252 / 370	
Sound pressure level at 1m / sound power		dB(A)	46 / 61	54 / 67	- / 64	- / 65	- / 67
Air flow rate		m^3/h	2682	4800	4800	5400	6000
Operating ranges in Cooling / Heating / DHW mode		°C	+10~+46 // -20~+25 // -20~+35		+10~+46 // -25~+25 // -20~+35		
Remote control		-	Not included		Not included		
Hydraulic features							
Expansion vessel		L	6			6	
Water flow (min / rated / max)		m^3/h	0.5 / 0.77 / 1.9	0.6 / 1.29 / 2.1	1 / 1.89 / 2.8	1.1 / 2.41 / 3	1.2 / 2.75 / 3
Water heating connections (valves not supplied)		inches	1”			1”1/4	
Min. system water capacity		L	28		38	46	55
Electrical features							
Power supply		-	230V / 1Ph / 50Hz		230V / 1Ph / 50Hz or 400V / 3Ph / 50Hz		
SINGLE PHASE 230V	Fuse size	A	16	16	32	32	32
	Cable width (mm^2) / max. length (m) [2]	-	3 x 2.5 / 14	3 x 4 / 16		3 x 6 / 25	
	Fuse size with immersion / Yutaki M Option	A	32	32	50	50	50
	Cable width (mm^2) / max. length (m) [2]	-	3 x 6 / 28			3 x 10 / 28	
THREE PHASE 400V	Fuse size	-	-	-	16	16	20
	Cable width (mm^2) / max. length (m) [2]	-	-	-		5 x 4	5 x 6
	Fuse size with immersion / Yutaki M Option	-	-	-	32	32	32
	Cable width (mm^2) / max. length (m) [2]	-	-	-		5 x 6	5 x 10
Refrigerant Charachteristics							
Refrigerant load		kg	1.2	1.3	2.8	3.1	3.1
Refrigerant		-	R32			R410A	
Compressor			SCROLL	ROTARY	SCROLL	SCROLL	SCROLL

[1] Non-regulated seasonal energy efficiency, Keymark-certified. [2] Data given for reference purposes only. Compliant with the applicable electrical standards. (V) = single.

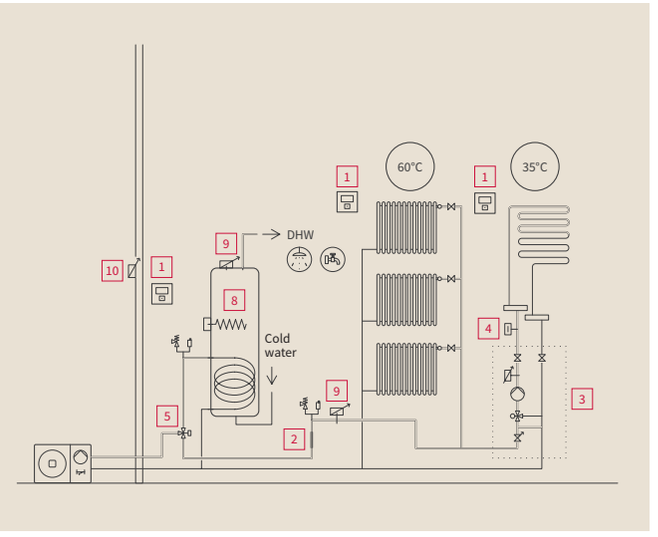
Internal design



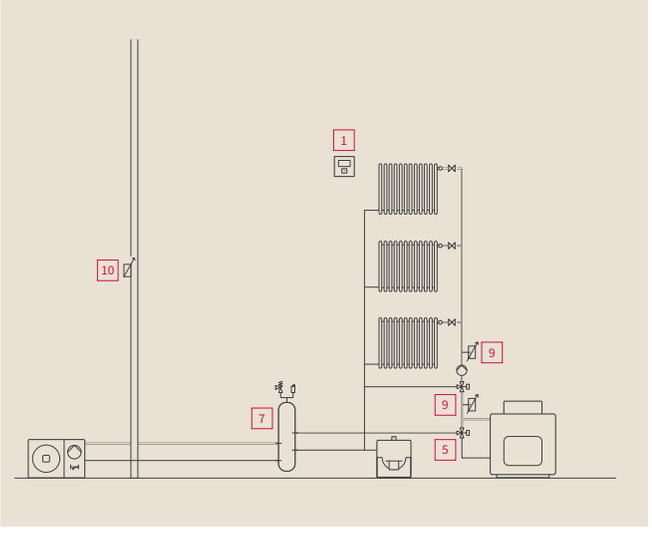
Hydraulic diagrams
Yutaki M



1 zone of radiators or underfloor heating with or without DHW



2 zones with radiator circuits and underfloor heating with or without DHW



Bivalent system with Boiler: 1 radiator circuit

See the following page for accessories.

Yutaki M hydraulic controls and accessories

1



Wired remote control

PC-ARFH1E

1



Indoor temperature sensor

ATW-ITS-01

1



On / Off wireless thermostat

ATW-RTU-04

1



Wireless intelligent thermostat

Circuit 1.

ATW-RTU-07

1



Wireless intelligent thermostat for 2nd circuit

Circuit 2.

ATW-RTU-06



Auxiliary output box

4 ports available: operation, alarm, cooling, heat-OFF.

ATW-AOS-02



Hi-Box: Hi Kumo and Hi Kumo PRO home automation boxes

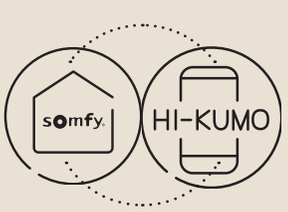
AHP-SMB-01

(for more, see p.42-43)



Somfy® home-automation box

1811527



Somfy® / Hi Kumo interface

Communication interface.
Integrates into Somfy® or Hi Kumo environment.

ATW-TAG-02



KNX® communication interface

Communication interface.KNX® environment integration.

ATW-KNX-02



Modbus communication interface

Communication interface.Modbus® environment integration.

ATW-MBS-02



Usage meter (RT2012)

Schneider® brand.

Not sold by Hitachi.



Reversible kit

Equipment required to run in cooling mode.

ATW-CKM-01

1



Cascade controller

Manage a cascade up to 8 Yutaki models from the same range and with the same power output (single/three-phase).

ATW-YCC-01

1



Mirror control box

Groups the electrical connections and the remote control. Remote control PC-ARFHE optional.

ATW-YMM-01

2



Electric heater

WEH-6E

3



2-zone mixing kit - wall mounted

This accessory is essential if you want to maintain 2 distinct temperature settings.

ATW-2TK-07

4



Aquastat, floor-mounted

This accessory is essential for floor-mounted heaters (DTU 65-14).

ATW-AQT-01

5



3-way directional inversion valve

DHW and swimming pool applications.

ATW-3WV-01

6



Differential pressure valve

This accessory ensures a constant flow through the heat pump condenser.

ATW-DPOV-01

7



Hydraulic separator for heat pump

This accessory hydraulically separates the transmitter and boiler network from that of the heat pump.

ATW-HSK-01

8



DHW storage tank

Stainless steel tank.

A range of tanks and buffer vessels are available from 150L to 300L.

9



Universal water temperature sensor

DHW, hydraulic decoupling, Circuit 2, swimming pool, solar (required if the tank is not a Hitachi DHWT).

ATW-WTS-02Y

10



Outdoor temperature sensor

ATW-2OS-02

In accordance with F-Gas regulations, our new R32 Hitachi equipment hold the key to our commitment to the environment. Since 2013, we have been preparing for this revolution by developing R32 solutions in Japan.



wall unit
Mono-split



Discover the Hitachi range for residential / small public buildings

S-Premium



Shirokuma



Performance



Summit



Light Commercial



Utopia Prime wall unit

NEW



Selection guide

Indoor units	Refrigerant	Performance	Compatible with airCloud for Home	Ultra compact	Weekly programming	4-way Swing	Motion sensor	FrostWash	Down to -15°C	Self-cleaning filter robot	SCOP	SEER
S-Premium wall unit Mono (2.5 - 3.5 and 5.0 kW)	R32	++++	•	-	•	•	•	•	•	•	5.10	9.00
Shirokuma wall unit Mono/Multi (2.5 - 3.5 and 5.0 kW)	R32	++++	•	-	•	•	•	•	•	-	5.20	8.70
Performance wall unit Mono/Multi (2.5 - 3.5 - 4.2 and 5.0 kW)	R32	+++	•	•	•	•	•	•	-	-	4.90	8.50
Summit wall unit Mono/Multi (1.8 - 2.5 - 3.5 and 5.0 kW)	R32	++	•	•	Option	-	-	•	-	-	4.30	6.10
Light comercial wall unit	R32	+++	•	-	•	•	•	-	-	-	4.60	7.30
NEW **Utopia Prime wall unit**	R32 R410A	-	-	-	Option	-	-	-	-	-	-	-

S-Premium

For better air quality throughout the year, combining several exclusive and innovative features



RAK-PSEW



RAK-PSES

FrostWash

Automatically and regularly cleans the heat exchanger to emit pure, clean air. (Fig.1)

Stainless Clean

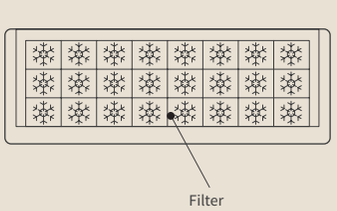
The S-Premium indoor unit is made of stainless steel, which reduces dust accumulation by 51% compared to plastic indoor units.

Auto filter Clean

Filters capture and dispose of ultrafine particles such as allergens and pollutants.

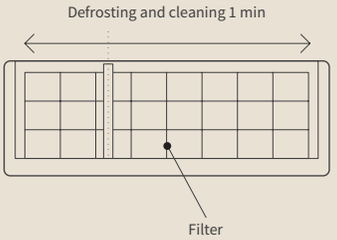
Fig. 1

Frost mode 20 min



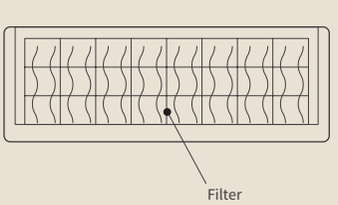
Frosting of the indoor unit exchanger.

Defrosting and cleaning 1 min



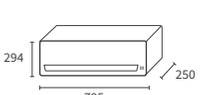
Cleaning the exchanger by defrosting.

Drying mode up to 60 min



Drying the exchanger.

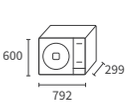
Indoor units



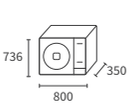
RAK-25PSEW
RAK-25PSES
RAK-35PSEW
RAK-35PSES
RAK-50PSEW
RAK-50PSES

Outdoor units





RAC-25WSE
RAC-35WSE



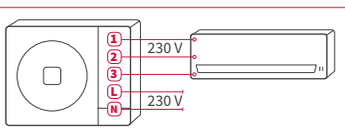
RAC-50WSE

S-Premium

Performance, cooling	Unit	2.5 kW	3.5 kW	5.0 kW
Nominal cooling capacity (min-max)	kW	2.50 (0.50 - 3.40)	3.50 (0.50 - 4.10)	5.00 (1.90 - 5.20)
UK cooling capacity (UK sensible)	kW	2.50 (2.13)	3.35 (2.51)	4.77 (3.24)
Rated power input Cooling (min-max)	kW	0.490 (0.300 - 0.920)	0.778 (0.350 - 1.350)	1.389 (0.400 - 1.820)
EER	-	5.10	4.50	3.60
Energy class Cooling	-	A+++		A++
SEER (average climate)	-	9.00		7.50
Working range in Cooling	°C	-10°C /+ 43°C		
Performance, heating				
Nominal heating capacity (min-max)	kW	3.20 (0.60 - 5.80)	4.00 (0.60 - 6.60)	6.00 (2.20 - 7.00)
Heating capacity at -7°C [1]	kW	3.20	3.90	5.40
Rated power input Heating (min-max)	kW	0.621 (0.440 - 1.500)	0.800 (0.500 - 2.000)	1.622 (0.600 - 2.650)
COP	-	5.15	5.00	3.70
Energy class Heating	-	A+++		A++
SCOP (average climate)	-	5.10		4.70
Working range in Heating	°C	-20°C /+ 24°C		
Indoor units	**Unit**	**RAK-25PSE(W/S)**	**RAK-35PSE(W/S)**	**RAK-50PSE(W/S)**
Sound pressure in Cooling mode (EL / L / M / H) [2]	dB(A)	22 / 28 / 34 / 41	22 / 29 / 36 / 43	25 / 31 / 38 / 46
Sound pressure in Heating mode (EL / L / M / H) [2]	dB(A)	22 / 28 / 34 / 42	22 / 29 / 36 / 44	25 / 31 / 38 / 48
Sound power in Cooling mode	dB(A)	55	57	60
Airflow in Cooling mode (EL / L / M / H)	m^3/h	270 / 320 / 420 / 510	270 / 340 / 440 / 540	300 / 400 / 490 / 590
Dehumidification	l/h	1.4	1.6	2.0
Dimensions (H x L x D)	mm	294 x 795 x 250	294 x 795 x 250	294 x 795 x 250
Net weight	kg	11		
Remote control	-	Weekly infrared (included)		
Outdoor units	**Unit**	**RAC-25WSE**	**RAC-35WSE**	**RAC-50WSE**
Sound pressure in Cooling mode [2]	dB(A)	47	48	51
Sound power in Cooling mode	dB(A)	61	62	65
Airflow (Cooling / Heating)	m^3/h	1860 / 1620	1920 / 1620	2160 / 2160
Dimensions (H x L x D)	mm	600 x 792 x 299		736 x 800 x 350
Net weight	kg	37		51
Compressor	-	Rotary		2-cylinder rotary
Refrigeration characteristics				
Diameter of pipes (Liq / Gas)	inches	1/4" / 3/8"		1/4" / 1/2"
Initial refrigerant charge	kg	0.98		1.3
Pre-charged for	m	20		30
Min. length	m	3		
Max. length / Additional charge	m/g/m	20 / -		30 / -
Max. level difference (outdoor unit above / outdoor unit below)	m	10 /10		
Refrigerant	-	R32		
Electrical features				
Power supply	V/Ph/Hz	230V / 1Ph / 50Hz		
Operating current (Cooling / Heating)	A	2.26 / 2.85	3.56 / 3.65	6.33 / 7.38
Recommended fuse size	A	15	15	25
Cable width (EN 60 335-1) [3]	mm^2	1.50 x 2 + E		2.50 x 2 + E
Indoor/outdoor connection (shielded)	mm^2	1.50 x 3 + E		2.50 x 3 + E

[1] Data includes defrosting. To find out the data for your project, refer to our technical catalogues.
[2] Sound pressure measurements were made 1 meter from the unit without obstructions (see the technical catalogue).
[3] Data shown is for indication purpose only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.

Indoor units are powered at 220-230 V from the outdoor unit.



Controls and compatible accessories (see page 161)



Infrared remote control

RAR-6NE1

Included



Wired standard remote control

SPX-RCDB1



Wired programmable remote control

SPX-WKT4



H-Link box

PSC-6RAD

Other (price excluding taxes):

- Control box for multi-indoor units SPX-DST1 + SPX-WDST8M
- interface airCloud Home SPX-WFG02
- Hi-Box AHP-SMB-01
- Hi Kumo interface for Hi-Box SPX-TAG01
- Single dry contact kit SPX-WDC3
- Single fault report kit SPX-WDC7 + HA-S100TSA

Shirokuma

When power goes hand in hand with comfort



Motion sensor

Technology that saves you money – with a motion sensor to continuously analyze the presence of people in the room.
If there is no detection after 20 min, the setpoint is shifted by one degree; after 40 min it shifts one degree again. (Fig. 1)

4-Way Swing

Because the blades move both vertically and horizontally, the air is distributed more uniformly, improving the level of comfort in the room. (Fig. 2)

Low noise level

Our Shirokuma indoor units were designed to work at low noise levels from 20dB(A), to keep them completely discreet.

Constant Power technology

The CONSTANT POWER solution has been specially developed by HITACHI.
It improves the performance of your heat pump and maintains its heating power down to an outside temperature of -15°C and ensures heating down to -20°C. (Fig. 3)

Double fan blade

For a pleasant and improved air flow in the living room, the Shirokuma unit is equipped with a double fan blade. This double blade discreetly ensures a comfortable flow of air, avoiding the unpleasantness of a 'swinging fan'.

FrostWash technology

The Shirokuma is designed to offer you effective air purification throughout the year with its exclusive and innovative functionality: FrostWash. Automatically and regularly cleans the heat exchanger to emit pure, clean air.

Ultra performance filtration

STAINLESS prefilters and Active Carbon filters as standard. The Active Carbon filter with silver ions (known for their antibacterial properties) acts by adsorption. This retains certain gas molecules or suspended particles on the surface of the filter. The air that comes out of the filter is then free of odors and pollutants.

Fig. 1

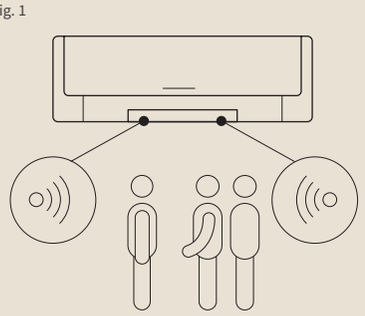


Fig. 2

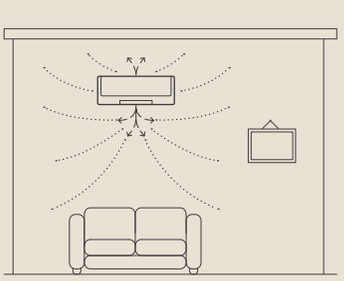
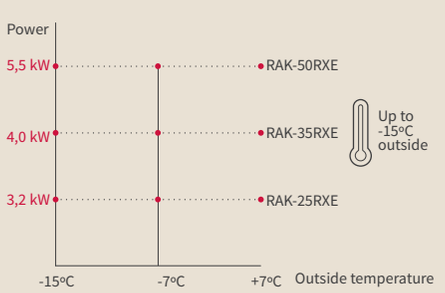
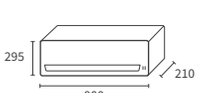


Fig. 3



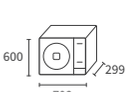
Indoor units



RAK-25RXE
RAK-35RXE
RAK-50RXE

Outdoor units





RAC-25WXE
RAC-35WXE



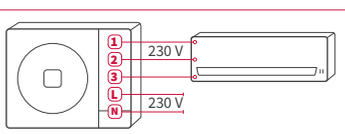
RAC-50WXE

Shirokuma

Performance, cooling	Unit	2.5 kW	3.5 kW	5.0 kW
Nominal cooling capacity (min-max)	kW	2.50 (0.90 - 3.10)	3.50 (0.90 - 4.00)	5.00 (1.90 - 5.20)
UK cooling capacity (UK sensible)	kW	2.38 (2.09)	3.33(2.70)	4.76 (3.50)
Rated power input Cooling (min-max)	kW	0.481 (0.25 - 1.00)	0.814 (0.25 - 1.40)	1.397 (0.50 - 2.10)
EER	-	5.20	4.30	3.58
Energy class Cooling	-	A+++		A++
SEER (average climate)	-	8.50	8.70	7.50
Working range in Cooling	°C	-10°C /+ 43°C		
Performance, heating				
Nominal heating capacity (min-max)	kW	3.20 (0.90 - 4.20)	4.00 (0.90 - 4.80)	5.80 (2.2 - 7.00)
Heating capacity at -7°C[1]	kW	3.20	4.00	5.50
Rated power input Heating (min-max)	kW	0.593 (0.25 - 1.20)	0.800 (0.25 - 1.60)	1.415 (0.50 - 2.70)
COP	-	5.40	5.00	4.10
Energy class Heating	-	A+++		A++
SCOP (average climate)	-	5.20		4.70
Working range in Heating	°C	-20°C /+ 21°C		
Indoor units	**Unit**	**RAK-25RXE**	**RAK-35RXE**	**RAK-50RXE**
Sound pressure in Cooling mode (EL / L / M / H) [2]	dB(A)	20 / 27 / 35 /43	22 / 29 / 37 / 45	25 / 31 / 39 / 47
Sound pressure in Heating mode (EL / L / M / H) [2]	dB(A)	20 / 28 / 36 / 43	22 / 30 / 37 / 45	25 / 31 / 39 / 48
Sound power in Cooling mode	dB(A)	58	60	
Airflow in Cooling mode (EL / L / M / H)	m^3/h	300 / 330 / 510 / 600	320 / 340 / 520 / 660	350 / 400 / 580 / 720
Dehumidification	l/h	1.4	1.6	2
Dimensions (H x L x D)	mm	295 x 900 x 210		
Net weight	kg	11		
Remote control	-	Weekly infrared (included)		
Outdoor units	**Unit**	**RAC-25WXE**	**RAC-35WXE**	**RAC-50WXE**
Sound pressure in Cooling mode [2]	dB(A)	47	48	51
Sound power in Cooling mode	dB(A)	61	62	65
Airflow (Cooling / Heating)	m^3/h	1860 / 1620	1920 / 1620	2160 / 2160
Dimensions (H x L x D)	mm	600 x 792 x 299		736 x 800 x 350
Net weight	kg	37.5		51
Compressor	-	Rotary		2-cylinder rotary
Refrigeration characteristics				
Diameter of pipes (Liq / Gas)	inches	1/4" / 3/8"		1/4" / 1/2"
Initial refrigerant charge	kg	0.98		1.3
Pre-charged for	m	20		30
Min. length	m	3		
Max. length / Additional charge	m/g/m	20 /-		30 /-
Max. level difference (outdoor unit above / outdoor unit below)	m	10 / 10		
Refrigerant	-	R32		
Electrical features				
Power supply	V/Ph/Hz	230V / 1Ph / 50Hz		
Operating current (Cooling / Heating)	A	1.09 - 4.35 / 1.09 - 5.22	1.09 - 6.09 / 1.09 - 6.96	2.17 - 9.13 / 2.17 - 11.74
Recommended fuse size	A	25	25	25
Cable width (EN 60 335-1) [3]	mm^2	1.50 x 2 + E		2.50 x 2 + E
Indoor/outdoor connection (shielded)	mm^2	1.50 x 3 + E		2.50 x 3 + E

[1] Data includes defrosting. To find out the data for your project, refer to our technical catalogues.
[2] Sound pressure measurements were made 1 meter from the unit without obstructions (see the technical catalogue).
[3] Data shown is for indication purpose only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.

Indoor units are powered at 220-230 V from the outdoor unit.



Controls and compatible accessories (see page 161)



Infrared remote control

RAR-6NE1

Included



Wired standard remote control

SPX-RCDB1



Wired programmable remote control

SPX-WKT4



H-Link box

PSC-6RAD

Other (price excluding taxes):

- Control box for multi-indoor units SPX-DST1 + SPX-WDST8M
- interface airCloud Home SPX-WFG02
- Hi-Box AHP-SMB-01
- Hi Kumo interface for Hi-Box SPX-TAG01
- Single dry contact kit SPX-WDC3
- Single error report kit SPX-WDC7 + HA-S100TSA

Performance

Compact size and high performance



Ultra-compact

The most compact unit of the range, with an overall width of 78 cm. It will fit perfectly into any room and can easily be installed above a doorway. (Fig.3)

4-Way Swing

Because the blades move both vertically and horizontally, the air is distributed more uniformly, improving the level of comfort in the room. (Fig. 1)

Motion sensor

Technology that saves you money – with a motion sensor to continuously analyze the presence of people in the room.
If there is no detection after 20 min, the setpoint is shifted by one degree; after 40 min it shifts one degree again. (Fig. 2)

Compatible with the airCloud remote controller

In the app, you can turn the system on and off, turn the temperature up or down and program the system from anywhere in the world. All you need is a mobile phone, an Internet connection and Wi-Fi equipment (optional) to connect to the equipment.

FrostWash technology

The Performance is designed to offer you effective air purification throughout the year with its exclusive and innovative functionality: FrostWash. Automatically and regularly cleans the heat exchanger to emit pure, clean air.

Silent operation

With a low noise level of just 20 dB(A)*, you can enjoy a comfortable environment without noticing that the indoor unit is even running.

Active Carbon filter

The Active Carbon filter with silver ions (known for their antibacterial properties) acts by adsorption. This retains certain gas molecules or suspended particles on the surface of the filter. The air that comes out of the filter is then free of odors and pollutants.

Fig. 1

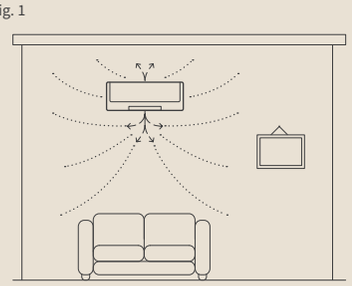


Fig. 2

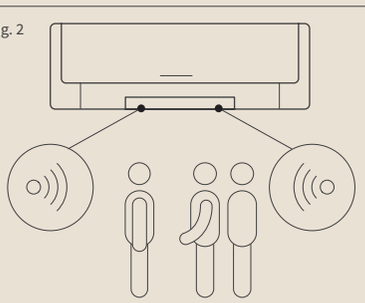
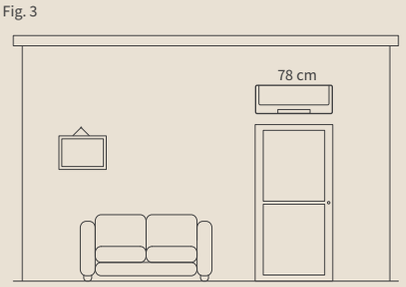
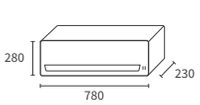


Fig. 3



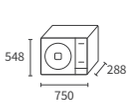
Indoor units



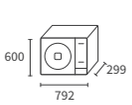
RAK-18RPE
RAK-25RPE
RAK-35RPE
RAK-42RPE
RAK-50RPE

Outdoor units





RAC-18WPE
RAC-25WPE
RAC-35WPE



RAC-42WPE
RAC-50WPE

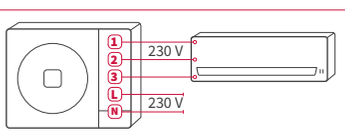
*20dB(A) acoustic pressure at low fan speeds.

Performance

Performance, cooling	Unit	1.8 kW	2.5 kW	3.5 kW	4.2 kW	5.0 kW
Nominal cooling capacity (min-max)	kW	2.00 (0.90 - 2.50)	2.50 (0.90 - 3.10)	3.50 (0.90 - 4.00)	4.20 (1.70 - 5.00)	5.00 (1.90 - 5.20)
UK cooling capacity (UK sensible)	kW	1.91 (1.79)	2.38 (1.89)	3.33 (2.24)	4.00 (3.00)	4.76 (3.17)
Rated power input Cooling (min-max)	kW	0.419 (0.25 - 1.01)	0.549 (0.25 - 1.29)	0.941 (0.25 - 1.46)	1.120 (0.30 - 1.70)	1.471 (0.30 - 2.10)
EER	-	4.77	4.55	3.72	3.75	3.40
Energy class Cooling	-	A+++			A++	
SEER (average climate)	-	8.50		7.80	7.50	7.35
Working range in Cooling	°C	-10°C /+ 43°C				
Performance, heating						
Nominal heating capacity (min-max)	kW	2.50 (0.90 - 3.20)	3.40 (0.90 - 4.40)	4.20 (0.90 - 5.00)	5.40 (1.7 - 6.00)	6.00 (2.2 - 7.30)
Heating capacity at -7°C[1]	kW	2.30	3.00	3.40	3.80	4.10
Rated power input Heating (min-max)	kW	0.519 (0.25 - 0.97)	0.733 (0.25 - 1.50)	1.000 (0.25 - 1.70)	1.317 (0.50 - 2.10)	1.558 (0.50 - 2.75)
COP	-	4.82	4.64	4.20	4.10	3.85
Energy class Heating	-	A++				
SCOP (average climate)	-	4.90			4.60	
Working range in Heating	°C	-15°C /+ 21°C				
Indoor units		**RAK-18RPE**	**RAK-25RPE**	**RAK-35RPE**	**RAK-42RPE**	**RAK-50RPE**
Sound pressure in Cooling mode (EL / L / M / H) [2]	dB(A)	21 / 24 / 33 / 37	22 / 24 / 33 /40	25 / 26 / 36 / 43	25 / 28 / 39 / 46	25 / 28 / 39 / 46
Sound pressure in Heating mode (EL / L / M / H) [2]	dB(A)	19 / 22 / 33 / 38	20 / 23 / 34 / 41	26 / 27 / 36 / 44	27 / 31 / 39 / 46	25 / 28 / 39 / 46
Sound power in Cooling mode	dB(A)	51	54	57	60	60
Airflow in Cooling mode (EL / L / M / H)	m^3/h	312 / 350 / 400 / 440	333 / 370 / 430 / 510	353 / 420 / 485 / 680	353 / 410 / 540 / 720	353 / 410 / 540 / 720
Dehumidification	l/h	1.2	1.4	1.6	1.8	2
Dimensions (H x L x D)	mm	280 x 780 x 230				
Net weight	kg	8.5				
Remote control	-	Weekly infrared (included)				
Outdoor units	**Unit**	**RAC-18WPE**	**RAC-25WPE**	**RAC-35WPE**	**RAC-42WPE**	**RAC-50WPE**
Sound pressure in Cooling mode [2]	dB(A)	44	46	48	49	49
Sound power in Cooling mode	dB(A)	58	60	61	63	63
Airflow (Cooling / Heating)	m^3/h	1860 / 1620		1920 / 1620	2160 / 2160	
Dimensions (H x L x D)	mm	548 x 750 x 288			600 x 792 x 299	
Net weight	kg	32.5			39	
Compressor	-	Rotary				
Refrigeration characteristics						
Diameter of pipes (Liq / Gas)	inches	1/4" / 3/8"			1/4" / 1/2"	
Initial refrigerant charge	kg	0.870			1.050	
Pre-charged for	m	20				
Min. length	m	3				
Max. length / Additional charge	m/g/m	20 / -				
Max. level difference (outdoor unit above / outdoor unit below)	m	10 / 10				
Refrigerant	-	R32				
Electrical features						
Power supply	V/Ph/Hz	230V / 1Ph / 50Hz				
Operating current (Cooling / Heating)	A	1.09 - 4.39 / 1.09 - 4.22	1.09 - 5.61 / 1.09 - 6.52	1.09 - 6.35 / 1.09 - 7.39	1.30 - 7.39 / 2.17 - 8.70	1.30 - 8.70 / 2.17 - 11.96
Recommended fuse size	A	15	15	15	25	25
Cable width (EN 60 335-1) [3]	mm^2	1.50 x 2 + E			2.50 x 2 + E	
Indoor/outdoor connection (shielded)	mm^2	1.50 x 3 + E			2.50 x 3 + E	

[1] Data includes defrosting. To find out the data for your project, refer to our technical catalogues.
[2] Sound pressure measurements were made 1 meter from the unit without obstructions (see the technical catalogue).
[3] Data shown is for indication purpose only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.

Indoor units are powered at 220-230 V from the outdoor unit.



Controls and compatible accessories (see page 161)



Infrared remote control

RAR-6NE1

Included



Wired standard remote control

SPX-RCDB1



Wired programmable remote control

SPX-WKT4



H-Link box

PSC-6RAD

Other (price excluding taxes):

- Control box for multi-indoor units SPX-DST1 + SPX-WDST8M
- interface airCloud Home SPX-WFG02
- Hi-Box AHP-SMB-01
- Hi Kumo interface for Hi-Box SPX-TAG01
- Single dry contact kit SPX-WDC3
- Single error report kit SPX-WDC7 + HA-S100TSA

Summit

Simple yet effective



Exclusive and innovative solution, FrostWash*

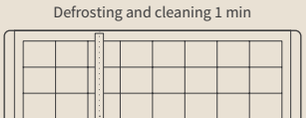
to distribute clean air.

*FrostWash stages

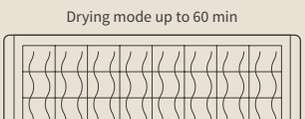
1 Frost mode 20 min



2 Defrosting and cleaning 1 min



3 Drying mode up to 60 min



Compatible with the airCloud remote controller

In the app, you can turn the system on and off, turn the temperature up or down and program the system from anywhere in the world. All you need is a mobile phone, an Internet connection and Wi-Fi equipment (optional) to connect to the equipment.

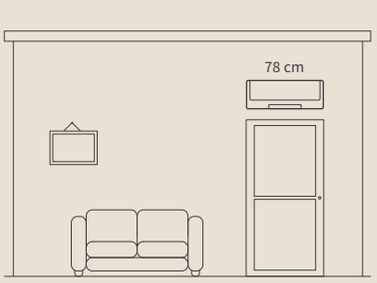
Maximum use of space

Thanks to its small size, you can install it discreetly. With a width of 780 mm, it will fit anywhere, including above a doorway. (Fig. 1)

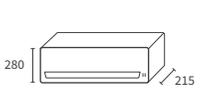
Silent operation

With a low noise level of just 19dB*, you can enjoy a comfortable environment without noticing that the indoor unit is even running.

Fig. 1



Indoor units



RAK-18REF
RAK-25REF
RAK-35REF
RAK-50REF

Outdoor units





RAC-18WEF
RAC-25WEF
RAC-35WEF



RAC-50WEF

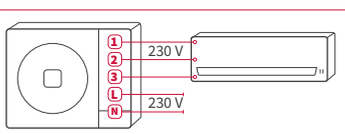
* Refer to your model.

Summit

Performance, cooling	Unit	1.8 kW	2.5 kW	3.5 kW	5.0 kW
Nominal cooling capacity (min-max)	kW	2.00 (0.90 - 2.50)	2.50 (0.90 - 3.10)	3.50 (0.90 - 4.00)	5.00 (1.90 - 5.20)
UK cooling capacity (UK sensible)	kW	2.00 (1.93)	2.50 (2.21)	2.84 (2.26)	3.83 (2.58)
Rated power input Cooling (min-max)	kW	0.58 (0.25 - 1.01)	0.70 (0.25 - 1.29)	1.09 (0.25 - 1.46)	1.56 (0.50 - 2.10)
EER	-	3.45	3.57	3.21	
Energy class Cooling	-	A++			
SEER (average climate)	-	6.10			
Working range in Cooling	°C	-10°C /+ 46°C			
Performance, heating					
Nominal heating capacity (min-max)	kW	2.50 (0.90 - 3.20)	3.40 (0.90 - 4.40)	4.20 (0.90 - 5.00)	6.00 (2.2 - 7.30)
Heating capacity at -7°C[1]	kW	2.00	2.50	3.00	4.00
Rated power input Heating (min-max)	kW	0.62 (0.25 - 0.97)	0.88 (0.25 - 1.25)	1.10 (0.25 - 1.70)	1.66 (0.50 - 2.75)
COP	-	4.03	3.86	3.82	3.61
Energy class Heating	-	A+			
SCOP (average climate)	-	4.20			4.30
Working range in Heating	°C	-15°C /+ 21°C			
Indoor units	**Unit**	**RAK-18REF**	**RAK-25REF**	**RAK-35REF**	**RAK-50REF**
Sound pressure in Cooling mode (EL / L / M / H) [2]	dB(A)	21 / 24 / 33 / 37	22 / 24 / 33 /40	25 / 26 / 36 / 43	28 / 30 / 40 /46
Sound pressure in Heating mode (EL / L / M / H) [2]	dB(A)	19 / 22 / 33 / 38	20 / 23 / 34 / 41	26 / 27 / 36 / 44	25 / 30 / 39 /47
Sound power in Cooling mode	dB(A)	52	54	57	60
Airflow in Cooling mode (EL / L / M / H)	m^3/h	312 / 350 / 400 / 440	333 / 370 / 430 / 510	333 / 400 / 485 / 600	333 / 450 / 600 / 700
Dehumidification	l/h	1.2	1.4	1.6	2
Dimensions (H x L x D)	mm	280 x 780 x 215			
Net weight	kg	7.7			8.2
Remote control	-	Infrared (included)			
Outdoor units	**Unit**	**RAC-18WEF**	**RAC-25WEF**	**RAC-35WEF**	**RAC-50WEF**
Sound pressure in Cooling mode [2]	dB(A)	45	47	48	50
Sound power in Cooling mode	dB(A)	59	61	62	64
Airflow (Cooling / Heating)	m^3/h	1860 / 1620			2160 / 2160
Dimensions (H x L x D)	mm	530 x 660 x 278			600 x 792 x 299
Net weight	kg	23.7		25.0	39.5
Compressor	-	Rotary			Double twin rotary
Refrigeration characteristics					
Diameter of pipes (Liq / Gas)	inches	1/4" / 3/8"			1/4" / 1/2"
Initial refrigerant charge	kg	0.53		0.70	0.93
Pre-charged for	m	20			
Min. length	m	3			
Max. length / Additional charge	m/g/m	20 / -			
Max. level difference (outdoor unit above / outdoor unit below)	m	10 /10			
Refrigerant	-	R32			
Electrical features					
Power supply	V/Ph/Hz	230V / 1Ph / 50Hz			
Operating current (Cooling / Heating)	A	1.09 - 4.39 / 1.09 - 4.22	1.09 - 5.61 / 1.09 - 5.43	1.09 - 6.35 / 1.09 - 7.39	2.17 - 9.13 / 2.17 - 11.96
Recommended fuse size	A	15	15	15	25
Cable width (EN 60 335-1) [3]	mm^2	1.50 x 2 + E			2.50 x 2 + E
Indoor/outdoor connection (shielded)	mm^2	1.50 x 3 + E			2.50 x 3 + E

[1] Data includes defrosting. To find out the data for your project, refer to our technical catalogues.
[2] Sound pressure measurements were made 1 meter from the unit without obstructions (see the technical catalogue).
[3] Data shown is for indication purpose only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.

Indoor units are powered at 220-230 V from the outdoor unit.



Controls and compatible accessories (see page 161)



Infrared remote control

RAR-7PE1

Included



Wired standard remote control

SPX-RCDB1

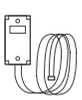
Other (price excluding taxes):

- Control box for multi-indoor units SPX-DST1 + SPX-WDST8M
- interface airCloud Home SPX-WFG02
- Hi-Box AHP-SMB-01
- Hi Kumo interface for Hi-Box SPX-TAG01
- Single dry contact kit SPX-WDC3
- Single error report kit SPX-WDC7 + HA-S100TSA



Wired programmable remote control

SPX-WKT4



H-Link box

PSC-6RAD

Light commerical wall mount

Multiple features to fit any setup



4-Way Swing

Because the blades move both vertically and horizontally, the air is distributed more uniformly, improving the level of comfort in the room. (Fig. 1)

Motion sensor

Technology that saves you money – with a motion sensor to continuously analyze the presence of people in the room.
If there is no detection after 20 min, the setpoint is shifted by one degree; after 40 min it shifts one degree again. (Fig. 2)

Improved comfort

With the SPX-WKT4 remote control, you can choose where to measure the setting temperature (at the remote control or the return or using the average of both readings). This feature improves the level of comfort in the room.

Flexible installation

With a 30 m long pipe run between the indoor unit and the outdoor unit, this indoor unit can be installed in any part of the building. What's more, the level difference between the two can be up to 20 m.

Compatible with the airCloud remote controller

In the app, you can turn the system on and off, turn the temperature up or down and program the system from anywhere in the world. All you need is a mobile phone, an Internet connection and Wi-Fi equipment (optional) to connect to the equipment.

A compact indoor unit

This indoor unit measures only 900 mm wide, so it can be installed anywhere without interfering with other elements in the room.

Fig. 1

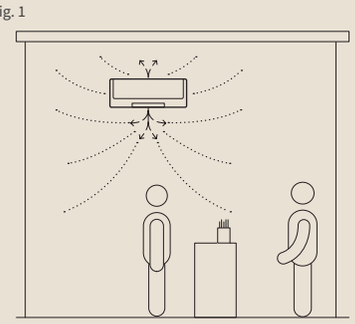
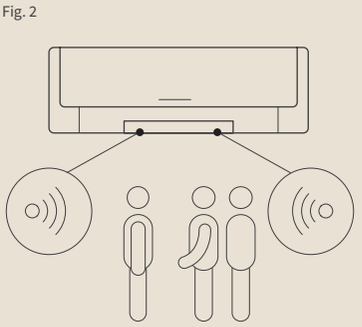
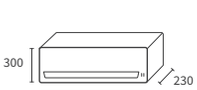


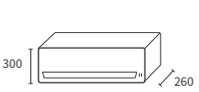
Fig. 2



Indoor units



RAK-50RPE1
RAK-60RPE



RAK-70PPD

Outdoor units





RAC-50NPE
RAC-60NPE



RAC-70NPD

Light commercial Wall units

Performance, cooling	Unit	5.0 kW	6.0 kW	7.0 kW
Nominal cooling capacity (min-max)	kW	5.00 (1.20 - 5.80)	6.00 (1.20 - 6.50)	7.00 (1.50 - 8.00)
UK cooling capacity (UK sensible)	kW	4.71 (3.30)	5.30 (3.67)	5.54 (4.49)
Rated power input Cooling (min-max)	kW	1.42 (0.30 - 2.500)	1.71 (0.30 - 2.65)	2.00 (0.50 - 2.70
EER	-	3.52	3.51	3.50
Energy class Cooling	-		A++	
SEER (average climate)	-	7.30	6.50	7.00
Working range in Cooling	°C		-15°C /+ 46°C	
Performance, heating				
Nominal heating capacity (min-max)	kW	6.00 (1.20 - 6.80)	7.00 (1.20 - 8.00)	8.00 (1.50 - 8.50)
Heating capacity at -7°C[1]	kW	4.20	4.80	5.80
Rated power input Heating (min-max)	kW	1.50 (0.30 - 2.650)	1.84 (0.30 - 2.65)	2.10 (0.50 - 2.80
COP	-	4.00	3.80	3.81
Energy class Heating	-	A++	A+	A++
SCOP (average climate)	-	4.60	4.20	4.60
Working range in Heating	°C		-15°C /+ 24°C	
Indoor units	**Unit**	**RAK-50RPE1**	**RAK-60RPE**	**RAK-70PPD**
Sound pressure in Cooling mode (EL / L / M / H) [2]	dB(A)	26 / 33 / 39 / 47	30 / 33 / 42 / 48	30 / 35 / 42 / 47
Sound pressure in Heating mode (EL / L / M / H) [2]	dB(A)	26 / 33 / 39 / 47	33 / 34 / 42 / 49	30 / 36 / 42 / 47
Sound power in Cooling mode	dB(A)		60	
Airflow in Cooling mode (EL / L / M / H)	m^3/h	310 / 410 / 570 / 720	480 / 540 / 690 / 930	510 / 630 / 870 / 1020
Dehumidification	l/h		2.8	4.8
Dimensions (H x L x D)	mm		300 x 900 x 230	300 x 1100 x 260
Net weight	kg		12.0	15.0
Remote control	-		Not included	
Outdoor units	**Unit**	**RAC-50NPE**	**RAC-60NPE**	**RAC-70NPD**
Sound pressure in Cooling mode [2]	dB(A)		50	52
Sound power in Cooling mode	dB(A)		65	67
Airflow (Cooling / Heating)	m^3/h		2160 / 2160	2700 / 2700
Dimensions (H x L x D)	mm		750 x 850 x 298	800 x 850 x 298
Net weight	kg		50	52
Compressor	-		Rotary	
Refrigeration characteristics				
Diameter of pipes (Liq / Gas)	inches		1/4" / 1/2"	1/4" / 5/8"
Initial refrigerant charge	kg		1.5	1.6
Pre-charged for	m		30	
Min. length	m		3	
Max. length / Additional charge	m/g/m		30 / -	
Max. level difference (outdoor unit above / outdoor unit below)	m		20 / 20	
Refrigerant	-		R32	
Electrical features				
Power supply	V/Ph/Hz		230V / 1Ph / 50Hz	
Operating current (Cooling / Heating)	A	5.98-6.52 / 6.31-6.89	7.20-7.85 / 7.74-8.45	8.42-9.18 / 8.84-9.64
Recommended fuse size	A	20	20	20
Cable width (EN 60 335-1) [3]	mm^2		2.50 x 2 + E	
Indoor/outdoor connection (shielded)	mm^2		1.50 x 3 + E	

[1] Data includes defrosting. To find out the data for your project, refer to our technical catalogues.
[2] Sound pressure measurements were made 1 meter from the unit without obstructions (see the technical catalogue).
[3] Data shown is for indication purpose only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.

Controls and compatible accessories (see page 161)



Infrared remote control

SPX-RCKA2



Wired standard remote control

SPX-RCDB1



Wired programmable remote control

SPX-WKT4



H-Link box

PSC-6RAD

Other (price excluding taxes):

- Control box for multi-indoor units SPX-DST1 + SPX-WDST8M
- airCloud Home SPX-WFG02 interface
- Hi-Box AHP-SMB-01
- Hi Kumo gateway for Hi-Box SPX-TAG01
- Single dry contact kit SPX-WDC3

Utopia Prime wall unit

A flexible R410A or R32 solution to meet the toughest technical restrictions



NEW

Ultimate air circulation

Use the 4 fan speeds to adapt the air flow for comfort in every room.

Easy and discreet integration

Our units are so compact and light that you can install them discreetly above a doorway.
Their new design improves access to the filters and means the fan motor can also be replaced without removing the heat exchanger.

Easier controls

Our wall units are compatible with all types of remote control and feature an infrared receiver as standard.

Large operating ranges

This equipment works down to -20°C in Heating mode and up to 46°C in Cooling mode. Heating-mode-only option is also available.

Compactness

Outdoor units are exceptionally compact, with a footprint of 0.23 m³.

Indoor units

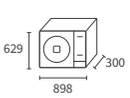


RPK-3.0 FSRM
RPK-4.0 FSRM

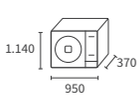
Outdoor units



RAS-3HVRC2



RAS-4H(V)RC2E
RAS-4H(V)NC2E



Utopia Prime wall unit

		R32 Refrigerant		R410A Refrigerant
		7.1 kW	10 kW	10 kW
Performance, cooling	**Unit**	**3HP**	**4HP**	**4HP**
Nominal cooling capacity	kW	7.1	10.00	10.00
UK total cooling capacity (UK sensible)	kW	7.41 (5.34)	10.30 (6.90)	10.30 (6.90)
Rated power input cooling	kW	2.11	4.13	4.63
EER	-	3.37	2.42	2.16
Seasonal energy class Cooling	-	A++		A++
SEER (average climate)	-	7.04	6.45	6.17
Working range in Cooling	°C	-15°C / +46°C (DB)		-15°C / +46°C (DB)
Performance, heating				
Nominal heating capacity	kW	8	11.20	11.20
Heating capacity at -7°C*	kW	6.30	10.34	10.34
Rated power input heating	kW	2.66	3.97	3.90
COP	-	3.01	2.82	2.87
Seasonal energy class Heating	-	A		A
SCOP (average climate)	-	3.90	3.80	3.83
Working range in Heating	°C	-20°C / +18°C (WB)		-20°C / +18°C (WB)
Indoor wall units	**Unit**	**RPK- 3.0FSRM**	**RPK- 4.0FSRM**	**RPK- 4.0FSRM**
Sound pressure in Cooling mode (EL / L / M / H) [2]	dB(A)	35 / 40 / 44 / 47	39 / 44 / 48 / 51	39 / 44 / 48 / 51
Sound power in Cooling mode (EL / L / M / H)	dB(A)	51 - 56 - 60 - 63	54 - 60 - 64 - 65	54 - 60 - 64 - 65
Airflow in Cooling mode (EL / L / M / H) [3][4]	m3/h	750 / 930 / 1050 / 1200	870 / 1050 / 1200 / 1380	870 / 1050 / 1200 / 1380
Condensate pump included	-	No	No	No
Dimensions (H x L x D)	mm	300 x 1100 x 260		300 x 1100 x 260
Weight	kg	15		15
Refrigerant pipe diameter (Liq / Gas)	inches	3/8 / 5/8		3/8 / 5/8
Condensate outlet diameter (ext)	mm	20		20
Power supply	-	230V / 1Ph / 50Hz		230V / 1Ph / 50Hz
recommended fuse size	A	5		5
Cable width (EN 60 335-1) [1]	mm2	3 x 0.75		3 x 0.75
Remote control	-	PC-AWR (Infrared)		PC-AWR (Infrared)
Outdoor units	**Unit**	**RAS-3HVRC2**	**RAS-4H(V)RC2E**	**RAS-4H(V)NC2E**
Sound pressure in Cooling mode (Night mode)[2]	dB(A)	54 (48)	54 (51)	54 (51)
Sound power in Cooling mode	dB(A)	69	70	70
Airflow (cooling)	m^3/h	2700	4800	4800
Dimensions (H x L x D)	mm	629 x 799 x 300	1140 x 950 x 370	1140 x 950 x 370
Net weight	kg	48	84	84
Compressor	-	Inverter DC rotary unit		Inverter DC rotary unit
Refrigeration characteristics				
Initial refrigerant charge	kg	1.7	3.0	3.2
Pre-charged for	m	20		20
Max. length / Additional charge	m/g/m	50 / 45	75 / 45	75 / 60
Max. level difference (outdoor unit above / outdoor unit below)	m	30 / 20		30 / 20
Diameter of pipes (Liq / Gas)	mm (inches)	9.52 (3/8) - 15.88 (5/8)		9.52 (3/8) - 15.88 (5/8)
Refrigerant	-	R32		R410A
Electrical features, outdoor unit				
Power supply	-	1~ 230V 50Hz	1 ~ 230V 50Hz or 3N~ 400V 50Hz	1 ~ 230V 50Hz or 3N~ 400V 50Hz
Max. current	A	15.8	22.5 or 15	22.5 or 15
Recommended fuse size	A	20	25 or 20	25 or 20
Cable width (EN 60 335-1) [1]	mm^2	3 x 4.00	3 x 6.00 or 5 x 4.00	3 x 6.00 or 5 x 4.00
Indoor/outdoor connection (shielded)	mm^2	2 x 0.75		2 x 0.75

[1] Data shown is for indication purposes only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.
[2] Sound pressure is measured under the following conditions: 1 m under the unit, 1 m from the pulse air flap.
[3] High-speed access is possible with remote controls PC-ARFP1E and PC-ARH1E.
[4] Very low speed (tpv) is available for Thermo-off mode.
* Data includes defrosting. To find out the data for your project, refer to our technical catalogues.
(V) Single-phase version.

Controls and compatible accessories (see the tabs TWIN + VRF controls)



Simple wired controller

PC-ARH1E



Infrared controller

Included

PC-AWR



Hard wired control

PC-ARFP1E



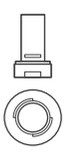
Remote sensor

THM-R2AE



Adjustable input/output contact connections

PCC-1A



Condensation drainage kit

DDB-26 (4HP models)

DDB-12L (3HP models)

Ideal for residential buildings, the Shirokuma console provides a comfortable heating or cooling temperature in just a few minutes. Its elegant and understated design will suit any room.



Console
Mono-split



Benefits

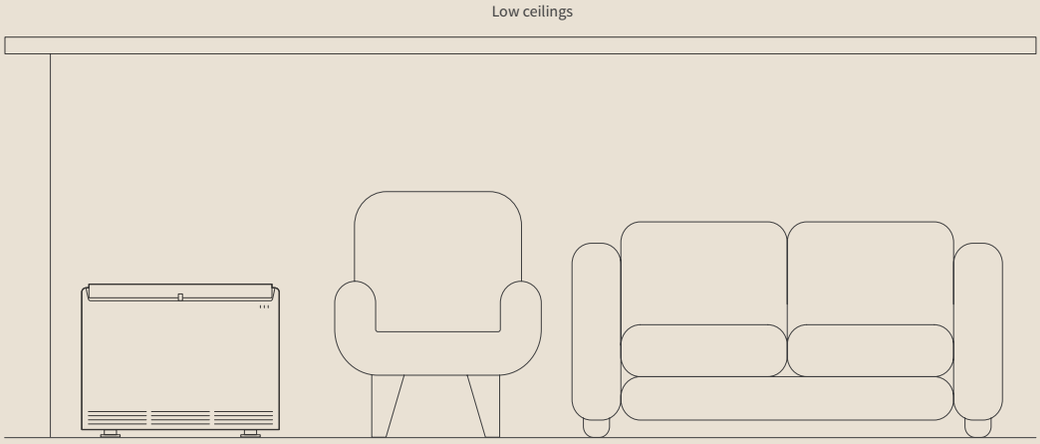
SCOP 8.50 SEER 4.60

1 A unique design designed to fit into any room.



It is designed to be as inconspicuous as possible, and this unit can even be built-in.

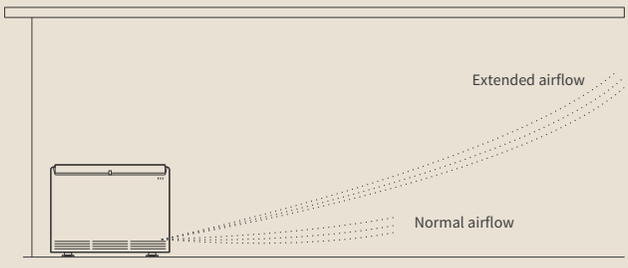
2 The ideal unit for small spaces



Very compact, consoles are particularly suitable for installation in smaller rooms.

3 Greater thermal comfort

The distribution of warm air to the lower part of the room allows it to quickly reach and maintain the desired temperature.





Shirokuma console

High-performance equipment with a unique design





Extended airflow

With a dynamic airflow, the air can reach every corner of the room. The room is air-conditioned (with heating or cooling air) at the touch of a button on the remote control. (Fig. 1)

Flexibility with the Multizone range

The indoor unit of the Shirokuma console is compatible with all multi-split outdoor units . You can also have multiple indoor units installed in different rooms with a single outdoor unit.

Exceptionally high-performance

The console has an energy rating of A+++. Guaranteed energy savings!

Management options

The console comes with an infrared remote control as standard. It is also compatible with the SPX-WKT4 wired remote control with hourly programming.

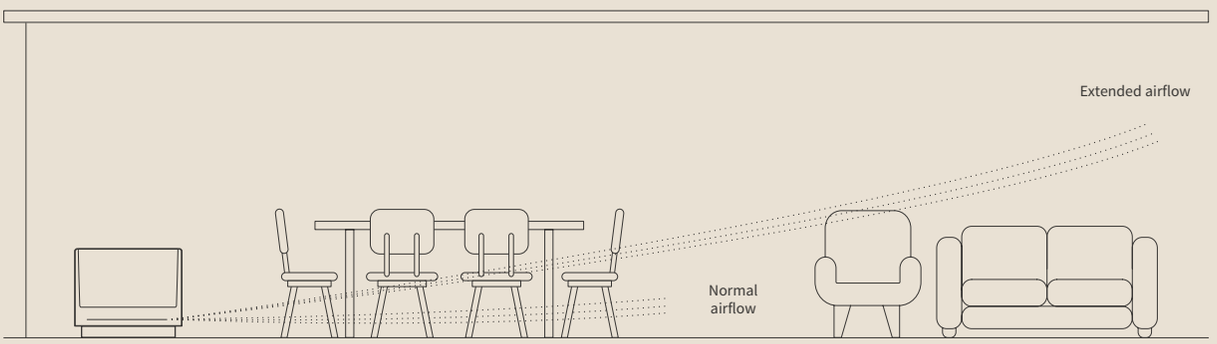
Flexible installation

Wall or floor-mounted on a pedestal (provided).

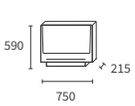
Compatible with airCloud

The entire Hitachi residential range is compatible with the airCloud system, which allows you to control equipment from any mobile device acting as a remote control.

Fig. 1



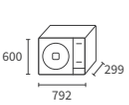
Indoor units



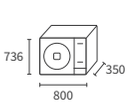
RAF-25RXE
RAF-35RXE
RAF-50RXE

Outdoor units



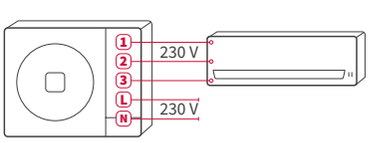


RAC-25FXE
RAC-35FXE



RAC-50FXE

Indoor units are powered at 220-230 V from the outdoor unit.



Shirokuma console

Performance, cooling	Unit	2.5 kW	3.5 kW	5.0 kW
Nominal cooling capacity (min-max)	kW	2.50 (0.90 - 3.10)	3.50 (0.90 - 4.00)	5.00 (0.90 - 5.20)
UK total cooling capacity (UK sensible)	kW	2.50 (2.40)	3.50 (2.97)	5.00 (3.57)
Rated power input Cooling (min-max)	kW	0.54 (0.15 - 1.18)	0.93 (0.15 - 1.38)	1.39 (0.5 - 2.10)
EER	-	4.65	3.75	3.60
Energy class Cooling	-	A+++	A++	
SEER (average climate)	-	8.50	8.20	6.80
Working range in Cooling	°C	-10°C / +46°C		
Performance, heating				
Nominal heating capcity (min-max)	kW	3.40 (0.90 - 4.40)	4.50 (0.90 - 5.00)	6.00 (0.90 - 8.10)
Heating capacity at -7°C[1]	kW	3.40	4.20	5.50
Rated power input Heating (min-max)	kW	0.26 (0.15 - 1.12)	1.15 (0.15 - 1.35)	1.58 (0.5 - 2.70)
COP	-	4.50	3.90	3.80
Energy class Heating	-	A++		A+
SCOP (average climate)	-	4.60		4.30
Working range in Heating	°C	-20°C / +24°C		
Indoor units	**Unit**	**RAF-25RXE**	**RAF-35RXE**	**RAF-50RXE**
Sound pressure in Cooling mode (EL / L / M / H) [2]	dB(A)	20 / 26 / 31 / 38	20 / 26 / 31 / 39	22 / 29 / 36 / 43
Sound power in Cooling mode	dB(A)	52	**53**	57
Airflow in Cooling mode (EL / L / M / H)	m^3/h	270 / 390 / 510 / 630	270 / 390 / 510 / 660	300 / 450 / 540 / 700
Dehumidification	l/h	1.4	1.9	2.8
Dimensions (H x L x D)	mm	590 x 750 x 215		
Net weight	kg	15		
Remote control	-	Weekly infrared (included)		
Outdoor units	**Unit**	**RAC-25FXE**	**RAC-35FXE**	**RAC-50FXE**
Sound pressure in cooling mode [2]	dB(A)	45	47	51
Sound power in Cooling mode	dB(A)	59	61	65
Airflow (Cooling / Heating)	m^3/h	1860 / 1620	1920 / 1620	2160 / 2160
Dimensions (H x L x D)	mm	600 x 792 x 299		736 x 800 x 350
Net weight	kg	37		51
Compressor	-	Rotary		
Refrigeration characteristics				
Diameter of pipes (Liq / Gas)	inches	1/4" / 3/8"		1/4" / 1/2"
Condensate outlet diameter (ext)	mm	16		
Initial refrigerant charge	kg	0.98		1.2
Pre-charged for	m	20		30
Min. length	m	3		
Max. length / Additional charge	m/g/m	20 / -		30 / -
Max. level difference (outdoor unit above / outdoor unit below)	m	10/10		
Refrigerant	-	R32		
Electrical features				
Power supply	V/Ph/Hz	230V / 1Ph / 50Hz		
Max. current	A	5	7	12
Recommended fuse size	A	15		25
Cable width (EN 60 335-1) [3]	mm^2	2 x 1.50 + E		2 x 2.50 + E
Indoor/outdoor connection (shielded)	mm^2	3 x 1.50 + E		3 x 2.50 + E

[1] Data includes defrosting. To find out the data for your project, refer to our technical catalogues.
[2] Sound pressure measurements were made 1 meter from the unit without obstructions (see the technical catalogue).
[3] Data shown is for indication purpose only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.

Controls and compatible accessories (see page 161)



Infrared remote control

RAR-6NE4

Included



Wired standard remote control

SPX-RCDB1



Wired programmable remote control

SPX-WKT4



H-Link box

PSC-6RAD

Other (price excluding taxes):

- Control box for multi-indoor units SPX-DST1 + SPX-WDST8M
- interface airCloud Home SPX-WFG02
- Hi-Box AHP-SMB-01
- Hi Kumo interface for Hi-Box SPX-TAG01
- Single dry contact kit SPX-WDC3
- Leak sensor SPX-RAFGLS

This ducted unit is the solution for both comfort and aesthetics. With this type of system, the diffusers are the only visible elements in a room, so it blends in nicely with any interior design.

With its zoning solution, the ducted unit can air-condition and heat several rooms from a single indoor unit. This solution is ideal for public but also residential buildings wherever discretion is key. Our wide range of R410A and R32 products have everything you need for your projects.



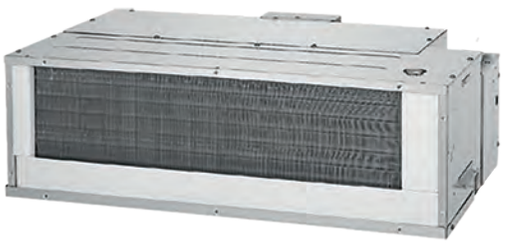
Ducted unit
Mono-split



Selection guide

Light Commercial R32 ducted





Primairy R32



Utopia Prime ducted unit

NEW

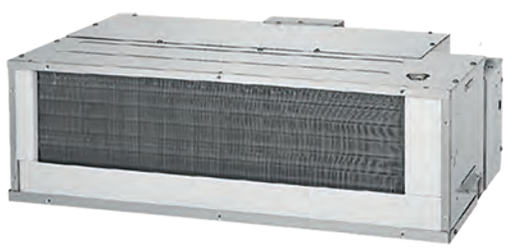


	Light Commercial R32 ducted	Primairy R32	Utopia Prime ducted unit NEW
			
Refrigerant	R32	R32	R410A and R32
Type of heat pump	Mono-split	Mono-split	Mono-split
Applications	Residential Small public buildings	Business Public	Residential Shared residential Business Public
Rated power, cooling (kW)	2.5 3.5 5.0 6.0 7.0	6.9 8.5 10.1 12.5 14.1 17.1	7.1 10.0 12.5 14.0
Supply voltage	Single-phase	Single-phase (3/3.5/4/5/6 HP) Three-phase (5/6/6.5 HP)	Single-phase (3 to 6 HP) Three-phase (4 to 6 HP)
COP up to	4.00	3.75	4.03
Heating / Cooling	A+ / A++	A / A++	A+ / A++
Heating down to	-15°C	-15°C	-20°C
Cooling up to	+46°C	+48°C	+46°C
Max. static pressure up to	150 Pa	120 Pa	150 Pa
Max. length/level difference (m) outdoor unit indoor unit up to	30 / 20	50 / 30	75 / 30

R32 Light commercial ducted unit

The discrete and high-performance high-end solution





Condensate pump included

So you don't have to worry about adding more expense to the installation, the ducted unit incorporates its own pumps to automatically remove condensation. (Fig. 1)

Static high pressure

The ducted has a pressure of 150 Pa so you can install it just where you want it and the user does not have to worry about enough air getting to the furthest room.

Flexible installation

With a 30 m long pipe run between the indoor unit and the outdoor unit, this indoor unit can be installed in any part of the building. What's more, the level difference between the two can be up to 20 m.

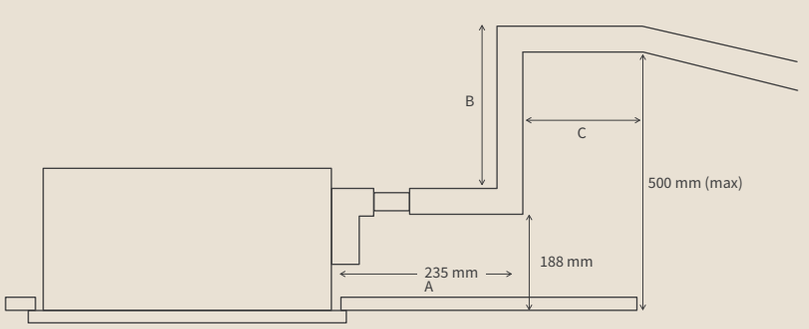
Compatible with the airCloud for Home remote controller

In the app, you can turn the system on and off, turn the temperature up or down and program the system from anywhere in the world. All you need is a mobile phone, an Internet connection and Wi-Fi equipment (optional) to connect to the equipment.

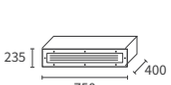
Compatible with Airzone

With a single ducted unit, the user can control up to 6 rooms separately thanks to Airzone motorized plenums that fit directly onto the Hitachi units. This level of compatibility means you are free to use the full range of Airzone air regulation of Airzone products.

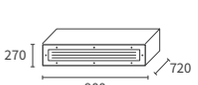
Fig. 1



Indoor units



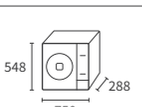
RAD-25RPE
RAD-35RPE



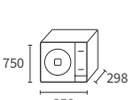
RAD-50RPE
RAD-60RPE
RAD-70PPD

Outdoor units

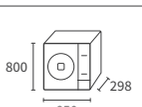




RAC-25NPE
RAC-35NPE



RAC-50NPE
RAC-60NPE



RAC-70NPD

Light Commercial R32 ducted unit

Performance, cooling	Unit	2.5 kW	3.5 kW	5.0 kW	6.0 kW	7.0 kW
Nominal cooling capacity (min-max)	kW	2.50 (0.90 - 3.00)	3.50 (0.90 - 4.00)	5.00 (1.20 - 5.80)	6.00 (1.20 - 6.50)	7.00 (1.50 - 8.00)
UK total cooling capacity (UK sensible)	kW	1.60 (1.37)	3.50 (2.44)	4.77 (3.83)	5.24 (3.69)	6.64 (5.09)
Rated power input Cooling (min-max)	kW	0.595 (0.25 - 1.29)	0.945 (0.25 - 1.46)	1.42 (0.30 - 2.50)	1.71 (0.30 - 2.60)	2.11 (0.50 - 2.70)
EER	-	4.20	3.70	3.52	3.51	3.32
Energy class Cooling	-	A++				
SEER (average climate)	-	6.20	6.50	6.20		6.10
Working range in Cooling	°C	-10°C / +46°C		-15°C / +46°C		
Performance, heating						
Nominal heating capacity (min-max)	kW	3.50 (0.90 - 5.50)	4.80 (0.90 - 6.60)	6.00 (1.20 - 6.80)	7.00 (1.20 - 8.00)	8.00 (1.50 - 8.50)
Heating capacity at -7°C[1]	kW	2.50	3.20	4.20	5.00	5.50
Rated power input Heating (min-max)	kW	0.875 (0.25 - 1.50)	1.260 (0.25 - 1.92)	1.57 (0.30 - 2.65)	1.84 (0.30 - 2.65)	2.20 (0.50 - 2.80)
COP	-	4.00	3.81	3.82	3.80	3.64
Energy class Heating	-	A+				
SCOP (average climate)	-	4.30		4.00		
Working range in Heating	°C	-15°C / +24°C				
Indoor units		**RAD-25RPE**	**RAD-35RPE**	**RAD-50RPE**	**RAD-60RPE**	**RAD-70PPD**
Sound pressure in Cooling mode (EL / L / M / H) [2]	dB(A)	30 / 33 / 37 / 41		29 / 32 / 35 / 39		
Sound pressure in Heating mode (EL / L / M / H) [2]	dB(A)	30 / 34 / 38 / 42		29 / 32 / 35 / 40		
Sound power in Cooling mode	dB(A)	57		53		
Static pressure (L / M / H)	Pa	- / - / 70		50 / 100 / 150		
Airflow in Cooling mode (EL / L / M / H)	m^3/h	330 / 390 / 450 / 510		350 / 540 / 800 / 1140		600 / 720 / 840 / 1020
Dehumidification	l/h	1.4	1.6	2.8		4.8
Dimensions (H x L x D)	mm	235 x 750 x 400		270 x 900 x 720		
Net weight	kg	16		35		
Condensate pump	-	Included				
Remote control	-	Not included (SPX-RCKA1 / SPX-RCDA1 / SPX-WKT4)				
Outdoor units	**Unit**	**RAC-25NPE**	**RAC-35NPE**	**RAC-50NPE**	**RAC-60NPE**	**RAC-70NPD**
Sound pressure in Cooling mode [2]	dB(A)	48		50		
Sound power in Cooling mode	dB(A)	61		65		
Airflow (Cooling / Heating)	m^3/h	1920 / 1620		2160 / 2160		2700 / 2700
Dimensions (H x L x D)	mm	548 x 750 x 288		750 x 850 x 298		800 x 850 x 298
Net weight	kg	32.5		50		52
Compressor	-	Rotary				
Refrigeration characteristics						
Diameter of pipes (Liq / Gas)	inches	1/4" / 3/8"		1/4" / 1/2"		1/4" / 5/8"
Initial refrigerant charge	kg	0.86		1.50		1.60
Pre-charged for	m	20		30		
Min. length	m	3				
Max. length / Additional charge	m/g/m	20 / -		30 / -		
Max. level difference (outdoor unit above / outdoor unit below)	m	10 / 10		20 / 20		
Refrigerant	-	R32				
Electrical features						
Power supply	V/Ph/Hz	230V / 1Ph / 50Hz				
Max. current	A	15		20		
Recommended fuse size	A	15		20		
Cable width (EN 60 335-1) [3]	mm^2	2 x 1.50 + E		2 x 2.50 + E		
Indoor/outdoor connection (shielded)	mm^2	3 x 1.50 + E				

[1] Data includes defrosting. To find out the data for your project, refer to our technical catalogues.
[2] Sound pressure measurements were made 1.5 meters from the unit without obstructions (see the technical catalogue).
[3] Data shown is for indication purpose only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.

Part number	Description	Length	Height	Depth	Compatibility	Number of ductwork connections
PIM1SOURADNH	STANDALONE SUPPLY PLENUM M1 2XD200	720	200	300 + 50	RAD-18QPE* / RAD 25-35RPE	2 x 200
PIM1REPRADNH	STANDALONE RETURN PLENUM M1 2XD200	655	205	200 + 50	RAD-18QPE / RAD 25-35RPE	2 x 200
PIM1REPRADNHF	STANDALONE RETURN PLENUM M1 filter door 2XD200	655	205	200 + 50	RAD-18QPE / RAD 25-35RPE	2 x 200
PIM1SOURADDH	STANDALONE SUPPLY PLENUM M1 3XD200	810	225	250 + 50	RAD-50-60RPE / RAD-70PPD	3 x 200
PIM1REPRADDH	STANDALONE RETURN PLENUM M1 2XD200	820	225	200 + 50	RAD-50-60RPE / RAD-70PPD	2 x 200

* Only available as a multi option

Controls and compatible accessories (see page 161)



Wired programmable remote control

SPX-WKT4



Infrared remote control

SPX-RCKA1



Wired standard remote control

SPX-RCDA1

Other (price excluding taxes):

- H-Link box – PSC-6RAD
- Control box
  Multi-indoor units
  SPX-DST1 + SPX-WDST8M
- airCloud for Home interface
  WIFI SPX-WFG02
- Hi-Box AHP-SMB-01
- Hi Kumo interface for Hi-Box
- SPX-TAG01
- Single dry contact kit SPX-WDC2
- SPX-RTH1 remote sensor

Primairy R32

Best value for money



Integrated condensate pump

With an elevation of 700 mm, these ducted units suit most projects.

Flexible air intake from below or from the back

This solution offers true installation flexibility depending on the type of configuration. You can change the intake – from below or from the rear. You do not need to change the equipment, just set the static pressure. (Fig. 1)

NEW Versatile

Up to 8 indoor units connected to a single remote control (with HDBA21NEWH + HCWA21NEHH). See diagrams on p168.

Large static pressure control range

Large static pressure control range (up to 120 Pa) for long ducts and multizone applications, allowing for a more practical and flexible installation.

Long pipe run and large height level differences

With up to 50 m of pipe run and a height difference up to 30 m, the Primairy range offers great flexibility in configuring your systems. (Fig.2)

Guaranteed efficiency

The performance of our Primairy ducted unit range is guaranteed in Heating mode down to an outside temperature of -15°C.
DC Inverter technology precisely adjusts the power needed to heat residential or public buildings, and ensures the comfort and durability of the system.

Auto-restart after a power outage

When power is restored after a power outage, all pre-settings are kept and the air-conditioning will run under the previous settings.

Fig. 1

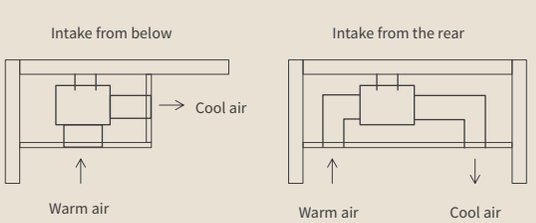
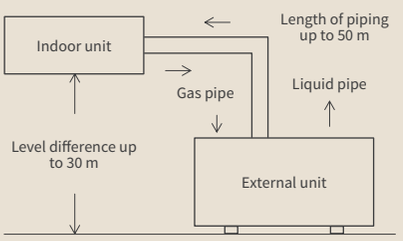
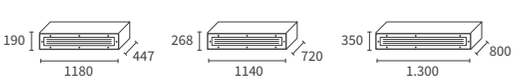


Fig. 2



Indoor units

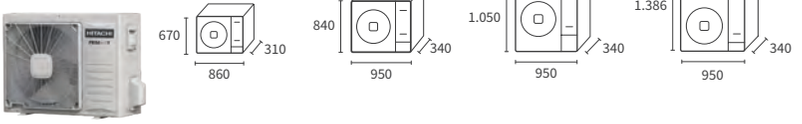


RPIL-3.0UFE1NH

RPIH-3.5UFE1NH
RPIH-4.0UFE1NH

RPIH-5.0UFE1NH
RPIH-6.0UFE1NH
RPIH-6.5UFE1NH

Outdoor units



RAS-3.0UFESNH1
RAS-3.5UFESNH1

RAS-4.0UFESNH1

RAS-5.0UFESNH1
RAS-5.0UFESMH1

RAS-6.0UFESNH1
RAS-6.0UFESMH1
RAS-6.5UFESMH1

Primairy R32

		6.9 kW	8.5 kW	10.1 kW	12.5 kW	14.1 kW	12.1 kW	14.2 kW	17.1 kW
Performance, cooling	**Unit**	**3 HP**	**3.5 HP**	**4 HP**	**5 HP**	**6 HP**	**5 HP**	**6 HP**	**6.5 HP**
Nominal cooling capacity (min-max)	kW	6.90 (2.45 - 7.85)	8.50 (4.00 - 9.50)	10.10 (3.50 - 11.00)	12.50 (3.30 - 13.20)	14.10 (3.20 - 16.00)	12.10 (3.30 - 13.20)	14.19 (3.20 - 16.00)	17.10 (3.30 - 18.50)
UK total cooling (sensible)	kW	7.45 (4.17)	9.18 (5.14)	10.91 (6.11)	13.50 (7.56)	15.23 (9.29)	13.07 (7.32)	15.33 (9.35)	18.47 (10.35)
Rated power input Cooling (min-max)	kW	2.16	2.67	3.80	4.22	4.78	4.22	4.78	6.60
EER	-	3.19	3.18	2.66	2.85	2.95	2.87	2.97	2.59
Energy class Cooling	-		A++				-		
SEER (average climate)	-	6.29	6.20	6.10	6.10	5.94	6.28	5.94	5.81
Annual power consumption	kWh/year	395	499	577	698	829	761	849	943
Working range in Cooling	°C	-15°C / +48°C							
Performance, heating									
Nominal heating capacity (min-max)	kW	8.3 (2.20 - 8.70)	9.00 (3.50 - 9.40)	10.50 (3.50 - 11.00)	12.80 (3.00 - 14.60)	16.50 (3.40 - 18.50)	13.4 (3.00 - 14.60)	13.4 (3.00 - 14.60)	18 (3.00 - 19.50)
Heating capacity at -7°C [1]	kW	4	5.6	6.5	8.4	9.9	8.4	9.9	11.1
Rated power input Heating (min-max)	kW	2.22	2.40	3.50	3.82	4.65	4.07	4.65	6.10
COP	-	3.74	3.75	3	3.35	3.40	3.29	3.47	2.95
Energy class Heating	-		A				-		
SCOP (average climate)	-	4.05	4.00	3.92		3.70			3.72
Annual power consumption	kWh/year	2007	2313	2926	3392	4503	3674	4694	4205
Working range in Heating	°C	-15°C / +24°C							
Indoor units		**RPIL-3.0UFE1NH**	**RPIH-3.5UFE1NH**	**RPIH-4.0UFE1NH**	**RPIH-5.0UFE1NH**	**RPIH-6.0UFE1NH**	**RPIH-5.0UFE1NH**	**RPIH-6.0UFE1NH**	**RPIH-6.5UFE1NH**
Sound pressure in Cooling mode (L / M / H) [2]	dB(A)	31 / 34 / 38	33 / 38 / 41	38 / 40 / 42	37 / 40 / 43	42 / 45 / 47	37 / 40 / 43	42 / 45 / 47	43 / 45 / 48
Sound power in Cooling mode	dB(A)	61	63	65	69	77	69	77	
Airflow in Cooling mode (L / M / H)	m^3/h	490 / 700 / 1000	900 / 1120 / 1450	1400 / 1600 / 1800	1300 / 1500 / 1750	1900 / 2200 / 2400	1300 / 1500 / 1750	1900 / 2200 / 2400	
Rated available static pressure (min-max)	Pa	25.0 (0 - 40)	37.0 (0 - 120)		50.0 (0 - 120)				
Dimensions (H x L x D)	mm	190 x 1180 × 445	268 x 1140 x 720		350 x 1300 x 800				
Net weight	kg	24.0	37.5		51				
Condensate pump	-	Included							
Condensate outlet diameter (ext.)	mm	32							
Air filter	-	Included							
Remote control	-	Wired programmable unit included (HCWA21NEHH)							
Outdoor units	**Unit**	**RAS-3.0UFESNH1**	**RAS-3.5UFESNH1**	**RAS-4.0UFESNH1**	**RAS-5.0UFESNH1**	**RAS-6.0UFESNH1**	**RAS-5.0UFESMH1**	**RAS-6.0UFESMH1**	**RAS-6.5UFESMH1**
Sound pressure in Cooling mode	dB(A)	54	54	58	62				67
Sound power in Cooling mode	dB(A)	69	70		76				80
Airflow (cooling)	m^3/h	3150		3800	5800	6300	5800	6300	
Dimensions (H x L x D)	mm	670 x 860 × 310		840 x 950 x 340	1050 x 950 × 340	1386 x 950 × 340	1050 x 950 × 340	1386 x 950 × 340	
Net weight	kg	49.0		70.0	85.0	101.5	85.0	101.5	109.0
Compressor	-	Inverter rotary unit							
Refrigeration characteristics									
Diameter of pipes (Liq / Gas)	inches	3/8" / 5/8"		3/8" / 3/4"					
Initial refrigerant charge	kg/TeqCO_2	1.40 / 0.95	1.45 / 0.98	2.00 / 1.35	2.50 / 1.69	3.00 / 2.03	2.50 / 1.69	3.00 / 2.03	3.40 / 2.30
Pre-charged for	m	5							
Max. pipe length	m	50							
Additional charge	g/m	28							
Max. level difference (outdoor unit above / outdoor unit below)	m	30 / 30							
Refrigerant	-	R32							
Electrical features, outdoor unit									
Power supply	V/Ph/Hz	230V / 1Ph / 50Hz					400V / 3Ph / 50Hz		
Max. current	A	18.1	18.0	22.5	28.2	30.0	11.6		
Recommended fuse size	A	25		40	50		32		
Cable width (EN 60 335-1) [3]	mm^2	3 x 2.5		3 x 4	3 x 6		5 x 2.5		
Indoor/outdoor connection (shielded)	mm^2	4 x 1.5							

[1] Data includes defrosting.
[2] Sound pressure measurements were made 1.4 meters from the unit without obstructions (see the technical catalogue).
[3] Data shown is for indication purpose only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.

Compatible controls and accessories



Wired programmable remote control

HCWA21NEHH

Included



Infrared remote control

HRBA31NEGH



H-Link interface

HCAA01NEWI



Group Adapter

HDBA21NEWH

Discover Primairy

Utopia Prime ducted unit

A solution with R410A or R32 for projects of any technical specification



NEW

Compact

Our indoor ducted units benefit from an extra small height of just 24 cm.

Integrated condensate pump

Hitachi ducts are equipped as standard with a condensate extraction pump of up to 850 mm, providing more flexibility when installing.

Flexible air intake from below or from the back

This solution offers true installation flexibility depending on the type of configuration. You can move the intake – from below or from the rear on sizes 3 to 6 HP. (Fig. 1)

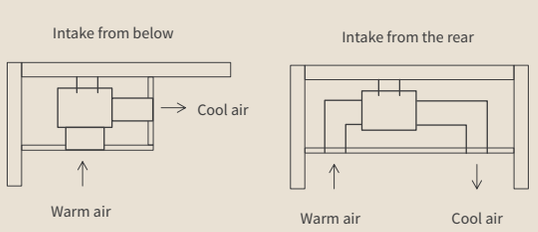
Large static pressure control range

Static pressure available up to 150 Pa, with 3 possible levels, including zero pressure to blow on the vent.

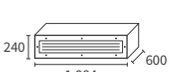
Compatible with Airzone

A single indoor ducted unit serves up to 6 zones separately thanks to Airzone's motorized plenums and management solutions (see p130).

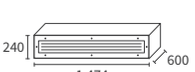
Fig. 1



Indoor units



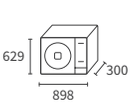
RPI-3.0FSRE



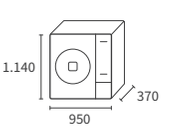
RPI-4.0FSRE
RPI-5.0FSRE
RPI-6.0FSRE

Outdoor units





RAS-3HVRC2



RAS-4H(V)RC2E
RAS-5H(V)RC2E
RAS-6H(V)RC2E
RAS-4H(V)NC2E
RAS-5H(V)NC2E
RAS-6H(V)NC2E

Utopia Prime ducted unit

		Refrigerant R32				Refrigerant R410A		
		7.1 kW	10 kW	12.5 kW	14 kW	10 kW	12.5 kW	14 kW
Performance, cooling	**Unit**	**3 HP**	**4 HP**	**5 HP**	**6 HP**	**4 HP**	**5 HP**	**6 HP**
Nominal cooling capacity (min-max)	kW	7.10	10.00	11.90	14.00	10.00	11.90	14.00
UK total cooling capacity (UK sensible)	kW	7.41 (5.25)	10.30 (8.65)	12.70 (10.54)	13.60 (11.29)	10.30 (8.65)	12.70 (10.54)	13.60 (11.29)
Rated power input cooling	kW	2.04	2.76	3.65	4.53	3.08	4.06	4.55
EER	-	3.47	3.62	3.26	3.09	3.24	2.92	3.08
Seasonal energy class Cooling	-	A++		A++	-	A++	A+	-
SEER (average climate)	-	6.70	6.44(V) - 6.17	6.10(V) - 5.89	5.67(V) - 5.64	6.21(V) - 5.96	5.87(V) - 5.68	5.67(V) - 5.64
Working range in Cooling [3]	°C	-15°C / +46°C (DB)				-15°C / +46°C (DB)		
Performance, heating								
Nominal heating capacity (min-max)	kW	8.00	11.20	14.00	16.00	11.20	14.00	16.00
Heating capacity at -7°C*	kW	6.40	10.20	11.90	13.30	10.20	11.90	13.30
Rated power input heating	kW	2.20	3.01	4.09	3.64	3.01	4.09	3.64
COP	-	3.63	3.71	3.42	4.40	3.71	3.42	4.40
Seasonal energy class Heating	-	A	A+	A+	-	A+	A	-
SCOP (average climate)	-	3.92	4.04	4.03	3.96	4.09	3.93	3.96
Working range in Heating	°C	-20°C / +18°C (WB)				-20°C / +18°C (WB)		
Indoor units		**RPI-3.0FSRE**	**RPI-4.0FSRE**	**RPI-5.0FSRE**	**RPI-6.0FSRE**	**RPI-4.0FSRE**	**RPI-5.0FSRE**	**RPI-6.0FSRE**
Sound pressure in Cooling mode (L / M / H) [2]	dB(A)	28 / 33 / 35	33 / 38 / 39	34 / 38 / 40	34 / 38 / 40	33 / 38 / 39	34 / 38 / 40	34 / 38 / 40
Sound power	dB(A)	59	62	64	64	62	64	64
Airflow in Cooling mode (L / M / H)	m^3/h	960 / 1140 / 1290	1680 / 2070 / 2160	1920 / 2100 / 2220	1950 / 2130 / 2250	1680 / 2070 / 2160	1920 / 2100 / 2220	1950 / 2130 / 2250
Static pressure (min-max)	Pa	30 (0~150)	37 (0~150)	50 (0~150)	50 (0~150)	37 (0~150)	50 (0~150)	50 (0~150)
Condensate pump included	-	yes				yes		
Max. elevation	mm	850				850		
Dimensions (H x L x D)	mm	240 x 1084 x 600	240 x 1474 x 600			240 x 1474 x 600		
Weight	kg	32	42			42		
Condensate outlet diameter (ext)	mm	32				32		
Power supply	-	1~ 230V 50Hz				1~ 230V 50Hz		
Recommended fuse size	A	5				5		
Cable width (EN 60 335-1) [1]	mm^2	3 x 0.75				3 x 0.75		
Remote control	-	PC-ARFP1E				PC-ARFP1E		
Outdoor units		**RAS-3HVRC2**	**RAS-4H(V)RC2E**	**RAS-5H(V)RC2E**	**RAS-6H(V)RC2E**	**RAS-4H(V)NC2E**	**RAS-5H(V)NC2E**	**RAS-6H(V)NC2E**
Sound pressure in Cooling mode (Night mode)[2]	dB(A)	54 (48)	54 (51)	54 (51)	56 (51)	54 (51)	54 (51)	56 (51)
Sound power	dB(A)	69	70	70	72	70	70	72
Airflow (Cooling / Heating)	m^3/h	2700	4800			4800		
Dimensions (H x L x D)	mm	629 x 799 x 300	1140 x 950 x 370			1140 x 950 x 370		
Net weight	kg	48	86 (84)			86 (84)		
Compressor	-	Inverter DC rotary unit				Inverter DC rotary unit		
Refrigeration characteristics								
Diameter of pipes (Liq / Gas)	mm (inches)	9.52 (3/8) - 15.88 (5/8)				9.52 (3/8) - 15.88 (5/8)		
Initial refrigerant charge	kg	1.7	3.0			3.2		
Pre-charged for	m	20				20		
Min. length	m	5				5		
Max. length / Additional charge	m/g/m	50 / 45	75 / 45			75 / 60		
Max. level difference (outdoor unit above / outdoor unit below)	m	30 / 20				30 / 20		
Refrigerant	-	R32				R410A		
Electrical features, outdoor unit								
Power supply	-	1~ 230V 50Hz	1 ~ 230V 50Hz or 3N~ 400V 50Hz	2 ~ 230V 50Hz or 3N~ 400V 50Hz	3 ~ 230V 50Hz or 3N~ 400V 50Hz	1 ~ 230V 50Hz or 3N~ 400V 50Hz		
Max. current	A	15.8	22.5 or 15			22.5 or 15		
Recommended fuse size	A	20	25 or 20			25 or 20		
Cable width (EN 60 335-1) [1]	mm^2	3 x 4.00	3 x 6.00 or 5 x 4.00			3 x 6.00 or 5 x 4.00		
Indoor/outdoor connection (shielded)	mm^2	2 x 0.75				2 x 0.75		

[1] Data shown is for indication purposes only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.
[2] Sound levels (pressure) are measured in an anechoic chamber at 1.50 m below the unit (no ceiling under the unit), with an extraction duct at 1 m and a discharge duct at 2 m.
[3] To ensure a cooling mode at -15°C, this option must be activated.
* Data includes defrosting. To find out the data for your project, refer to our technical catalogues.
(V) Single-phase version.

Controls and compatible accessories (see the tab VRF TWIN controls)



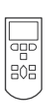
Simple wired controller

PC-ARH1E



Hard wired controller

PC-ARFP1E



Infrared controller

PC-AWR

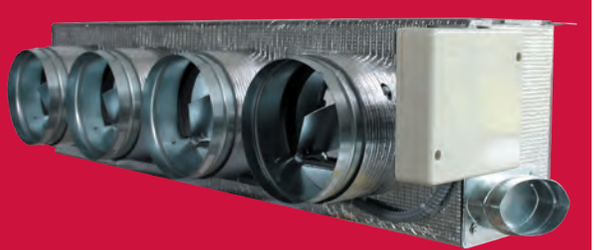
Other (price excluding taxes):

- Remote sensor THM-R2AE
- Adjustable input/output contact connections PCC-1A
- Condensate drainage kit DDB-26 (4-6 HP) models DDB-12L (3HP models):
- Motion sensor for low-height ducted unit SOR-MSK

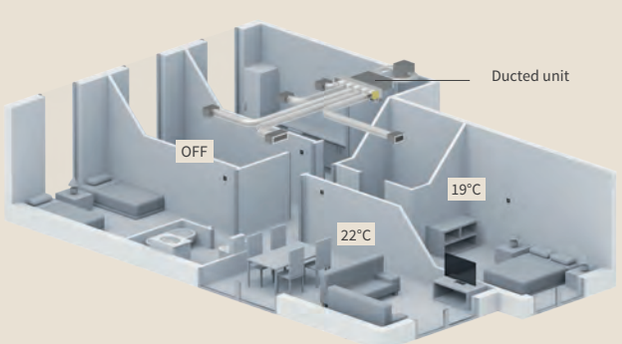
Zoning solution

Precise temperature control in each room from a single ducted unit!

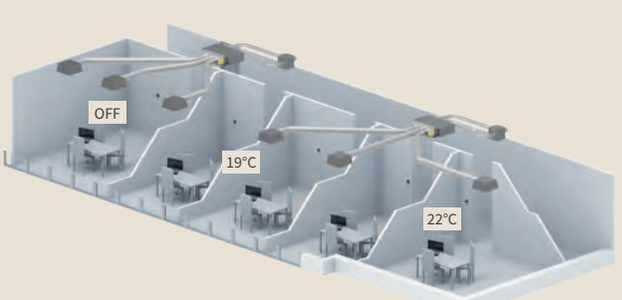
With a single ducted unit, you can control up to 6 rooms separately thanks to motorized plenums that fit directly onto Hitachi units.



Perfect for use in residential and public buildings



Detached house



Offices

Enjoy a whole range of benefits with our zoning solution!

Easy to install

- Plug & Play solution.
- Motorized plenums are pre-wired.
- Limited number of indoor units to install.

More comfort

- Control up to 6 rooms separately.
- Control the temperature in increments of 0.5°C.
- Maintain the temperature within 3°C in heating and cooling mode.
- Fresh air inlet optional on standard models.

Perfect for new builds and renovations

- Reversible version for year-round comfort.

Connected and intuitive interfaces



Airzone Blueface thermostat

Wired connection / Touchscreen 3.5": Configurable as a general thermostat or by zone. A number of features and settings, ideal for ultimate control of your entire system, for more efficient and responsible heating. End-to-end, intuitive interface. Eco-adapt and standby function for tangible energy saving. Control the temperature, mode, and fan speed. Weekly programming. Access to weather forecasts (with Airzone Cloud webserver login) to anticipate changes in temperature.



Airzone Think thermostat

Wired or wireless connection / 2.7" screen: Configurable as a general thermostat or by zone. Low-energy device that makes it easy to reduce energy costs. Stylish and intuitive interface. Control the temperature, mode, and fan speed. Access to weather forecasts (with Airzone Cloud webserver login) to anticipate changes in temperature.



Airzone Lite thermostat

Wired or wireless connection: In systems with the Blueface thermostat, this solution is perfect for quick access to essential functions. Its modern and fun interface makes it easy to use, with color codes indicating the mode and temperature of the area. Start/ Stop function. Control the setting temperature in increments of 1°C with a scope of ±3°C.



Webserver Airzone Cloud

The Airzone Cloud app, compatible on your smartphone, tablet, and PC, offers complete remote control of the installation; anywhere, anytime. You can control multiple servers at once and up to 32 systems on a single webserver. All the features of your thermostats are combined on the cloud: Control the temperature, weekly programming, weather forecasts, login authorization…

Interface	Airzone Blueface	Airzone Think	Airzone Lite	Webserver Airzone Cloud
Part number	AZCE6BLUEFACEB	AZCE6THINKCB	AZCE6LITECB	AZX6WSCLOUDDINC
Wireless connection	-	AZCE6THINKRB	AZCE6LITERB	AZX6WSCLOUDDINR
10m cable	AZX6CABLEBUS10	AZX6CABLEBUS10	AZX6CABLEBUS10	AZX6CABLEBUS10

	Part numbers for ducted units	Power	Plenum model	Motorized fan blower plenums					Intake plenum
				2 outlets	3 outlets	4 outlets	5 outlets	6 outlets	
Residential use	RAD-RPE	5.0 kW 6.0 kW 7.0 kW	Standard	AZEZ6HITST032 930 x 300 x 454	AZEZ6HITST033 930 x 300 x 454	AZEZ6HITST03M4 1140 x 300 x 454	AZEZ6HITST03M5 1425 x 300 x 454	AZEZ6HITST03M6 1638 x 300 x 454	AZCEZHIPR03M 818 x 223.8 (2xD250)
			Medium	AZEZ6HITDB032 930 x 250 x 454	AZEZ6HITDB033 930 x 250 x 454	AZEZ6HITBS03M4 1140 x 250 x 454	AZEZ6HITBS03M5 1425 x 250 x 454	AZEZ6HITBS03M6 1638 x 250 x 454	
	RAD-RPE	2.5 kW 3.5 kW	Standard	AZEZ6HITST04S2 930 x 300 x 454	AZEZ6HITST04S3 930 x 300 x 454	AZEZ6HITST04S4 1140 x 300 x 454	-	-	AZCEZHIPR04S 647.2 x 208.1 (1x D250)
			Medium	AZEZ6HITBS04S2 930 x 250 x 454	AZEZ6HITBS04S3 930 x 250 x 454	AZEZ6HITBS04S4 1140 x 250 x 454	-	-	

Two versions of plenums are available: standard version (300 mm) and medium version with fresh air function (250 mm). The dimensions of the plenums are shown under the Part number

Easy and quick to install, the cassette unit is the ideal solution for offices as well as public buildings. Available in 600 x 600 or 800 x 800 versions, their 4 independent louvres provide the ultimate comfort. Pre-charged with R32 or R410A, our ranges will meet any regulatory constraints your project may be subject to.



Cassette unit Mono-split



Selection guide

R32 Light commercial cassette



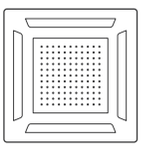
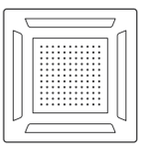
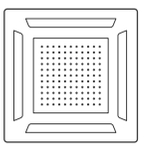
Primairy R32



Utopia Prime cassette

NEW



	Light commercial cassette	Primairy R32	Utopia Prime cassette NEW
			
Refrigerant	R32	R32	R410A and R32
Dimensions	620 x 620	950 x 950	
Applications		Business Public	
Rated power, cooling (kW)	2.5 3.5 5.0 6.0	7.0 8.7 10.1 12.7 14.0 12.1 13.8 16.9	7.1 10.0 12.5 14.0
Supply voltage	Single-phase	Single-phase (3/3.5/4/5/6Hp) Three-phase (5/6/6.5Hp)	Single-phase (up to 6Hp) Three-phase (4 to 6Hp)
SEER (up to)	6.50	6.73	7.33
Energy classes Heating / Cooling	A+ / A++	A+ / A++	A+ / A++
Cooling up to	+46°C	+48°C	+46°C
Heating down to	-15°C	-15°C	-20°C
Discretion	++	+	+
Motion sensor	Yes	-	Option

R32 Light commercial Cassette

Appearance and comfort



Condensate pump included

The cassette unit for small commercial buildings incorporates its own condensate pumps to remove condensation automatically, without the need for any other add-ons.
(Fig. 1)

Motion sensor

An air-conditioning unit without unnecessary consumption thanks to the motion sensor that gradually decreases the energy consumption of the equipment when the room is empty and restarts it when it detects people moving.

Improved comfort

On this equipment you can choose where to measure the setting temperature (at the remote control or the return or using the average of both readings). This feature provides superior comfort in the room.

Flexible installation

With a 30-m long pipe run between the indoor unit and the outdoor unit, this equipment can be installed in any part of the building. What's more, the level difference between the two can be up to 20 m. 600 x 600 mm in size, they can be integrated into standard ceiling panels.

Compatible with the airCloud remote controller

In the app, you can turn the system on and off, turn the temperature up or down and program the system from anywhere in the world. All you need is a mobile phone, an Internet connection and Wi-Fi equipment (optional) to connect to the indoor unit.

Individual control of the louvres

The 4 louvres in the cassette unit can be configured individually with the SPX-WKT4 so that each one works differently: blowing air directly towards the user, directing air at the ceiling or at the floor, etc. Comfort is guaranteed.
(Fig. 2)

Fig. 1

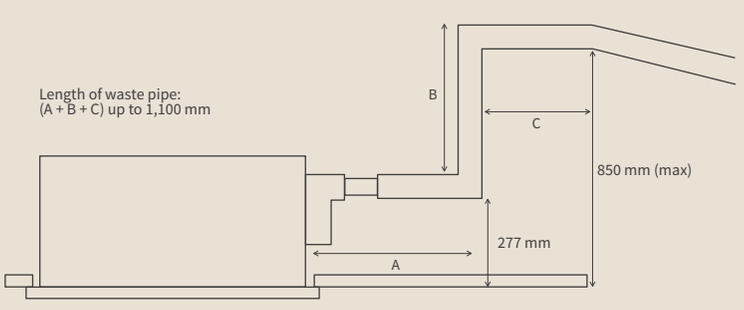
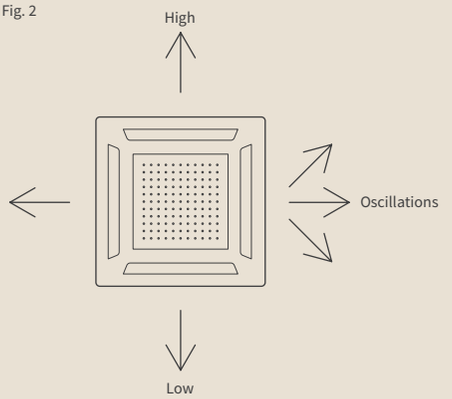
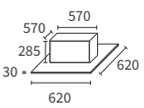


Fig. 2



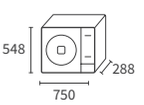
Indoor units



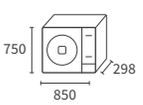
RAI-25RPE RAI-50RPE
RAI-35RPE RAI-60RPE

Outdoor units





RAC-25NPE
RAC-35NPE



RAC-50NPE
RAC-60NPE

R32 Light commercial Cassette

Performance, cooling	Unit	2.5 kW	3.5 kW	5.0 kW	6.0 kW
Nominal cooling capacity (min-max)	kW	2.50 (0.90 - 3.00)	3.50 (0.90 - 4.00)	5.00 (1.20 - 5.80)	6.00 (1.20 - 6.50)
UK total cooling capacity (UK sensible)	kW	1.86 (1.79)	2.61 (2.01)	4.32 (3.06)	5.30 (3.51)
Rated power input Cooling (min-max)	kW	0.595 (0.25 - 1.29)	0.875 (0.25 - 1.46)	1.420 (0.30 - 2.50)	1.710 (0.30 - 2.60)
EER	-	4.20	4.00	3.52	3.51
Energy class Cooling	-	A++			
SEER (average climate)	-	6.20	6.50	6.20	
Working range in Cooling	°C	-10°C / +46°C		-15°C / +46°C	
Performance, heating					
Nominal heating capacity (min-max)	kW	3.50 (0.90 - 5.00)	4.80 (0.90 - 6.60)	6.00 (1.20 - 6.80)	7.00 (1.20 - 8.00)
Heating capacity at -7°C[1]	kW	2.70	3.20	4.20	4.80
Rated power input Heating (min-max)	kW	0.875 (0.25 - 1.50)	1.230 (0.25 - 1.92)	1.570 (0.30 - 2.65)	1.840 (0.30 - 2.65)
COP	-	4.00	3.90	3.82	3.80
Energy class Heating	-	A+			
SCOP (average climate)	-	4.30		4.40	
Working range in Heating	°C	-15°C / +24°C			
Indoor units	**Unit**	**RAI-25RPE**	**RAI-35RPE**	**RAI-50RPE**	**RAI-60RPE**
Sound pressure in Cooling mode (EL / L / M / H) [2]	dB(A)	27 / 31 / 35 / 38	27 / 33 / 37 / 40	29 / 35 / 39 / 43	
Sound pressure in Heating mode (EL / L / M / H) [2]	dB(A)	28 / 32 / 36 / 39	28 / 34 / 38 / 41	30 / 36 / 40 / 44	
Sound power in Cooling mode	dB(A)	54		56	
Airflow in Cooling mode (EL / L / M / H)	m^3/h	360 / 505 / 590 / 660		390 / 540 / 630 / 720	
Dehumidification	l/h	1.4	1.8	2.8	3.8
Dimensions (H x L x D)	mm	285 x 570 x 570			
Fascia panel dimensions (H x L x D)	mm	30 x 620 x 620			
Net weight	kg	17			
Net weight of fascia panel	kg	2.8			
Condensate outlet diameter (ext)	mm	32			
Condensate pump	-	Included			
Fascia panel part no.	-	P-AP56NAMS	P-AP56NAMS	P-AP56NAMS	P-AP56NAMS
Remote control	-	Not included (SPX-RCKA3 / SPX-RCDB1 / SPX-WKT4)			
Outdoor units	**Unit**	**RAC-25NPE**	**RAC-35NPE**	**RAC-50NPE**	**RAC-60NPE**
Sound pressure in Cooling mode [2]	dB(A)	48		50	
Sound power in Cooling mode	dB(A)	61		65	
Airflow (Cooling / Heating)	m^3/h	1920 / 1620		2160 / 2160	
Dimensions (H x L x D)	mm	548 x 750 x 288		750 x 850 x 298	
Net weight	kg	32.5		50	
Compressor	-	Rotary			
Refrigeration characteristics					
Diameter of pipes (Liq / Gas)	inches	1/4" / 3/8"		1/4" / 1/2"	
Initial refrigerant charge	kg	0.86		1.50	
Pre-charged for	m	20		30	
Min. length	m	3			
Max. length / Additional charge	m/g/m	20 / -		30 / -	
Max. level difference (outdoor unit above / outdoor unit below)	m	10 / 10		20 / 20	
Refrigerant	-	R32			
Electrical features					
Power supply	V/Ph/Hz	230V / 1Ph / 50Hz			
Max. current	A	5.92	6.70	7.21	8.45
Recommended fuse size	A	15		20	
Cable width (EN 60 335-1) [3]	mm^2	2 x 1.50 + E		2 x 2.50 + E	
Indoor/outdoor connection (shielded)	mm^2	3 x 1.50 + E		3 x 1.50 + E	

[1] Data includes defrosting. To find out the data for your project, refer to our technical catalogues.
[2] Sound pressure measurements were made 1.5 meters from the unit without obstructions (see the technical catalogue).
[3] Data shown is for indication purpose only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.

Controls and compatible accessories (see page 161)



Infrared remote control

SPX-RCKA3



Wired standard remote control

SPX-RCDB1

Other:

- Control box for multi-indoor units SPX-DST1 + SPX-WDST8M
- airCloud Home SPX-WFG02 interface
- Hi-Box AHP-SMB-01
- Hi Kumo gateway for Hi-Box SPX-TAG01
- Single dry contact kit SPX-WDC3



Wired programmable remote control

SPX-WKT4



H-Link box

PSC-6RAD

Primairy R32

Best value for money



Adjust the temperature

On the cassette model, you can set the right temperature via a wired remote control. This function compensates for air stratification, ensuring comfort throughout rooms of any size. (Fig. 1)

Guaranteed efficiency

The performance of our Primairy cassette unit range is guaranteed in Heating mode down to an outside temperature of -15°C. DC Inverter technology precisely adjusts the heating required, and ensures the comfort and durability of the system.

NEW Versatile

Up to 8 indoor units connected to a single remote control (with HDBA21NEWH + HCWA21NEHH). See diagrams on p168.

Receiver for the infrared remote control

Located on the fascia to receive the signal of the remote control (Fig. 2)

Fresh air inlet

There is a fresh air inlet to improve indoor air quality.

Designed for comfort or technical applications

The unit has free contacts as standard to issue error reports or remotely stop/start the system. Ideal for installation in a technical room.

Fig. 1

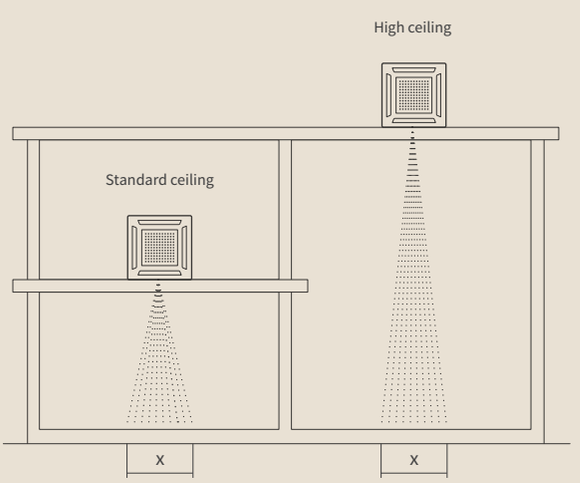
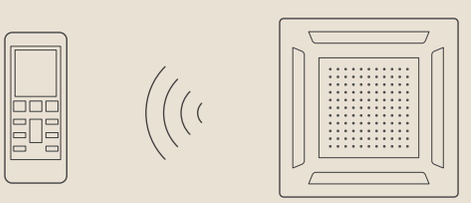
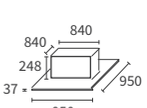


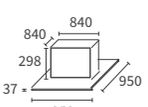
Fig. 2



Indoor units



RCI-3.0UFE1NH
RCI-3.5UFE1NH
RCI-4.0UFE1NH



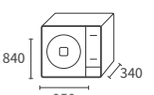
RCI-5.0UFE1NH
RCI-6.0UFE1NH
RCI-6.5UFE1NH

Outdoor units

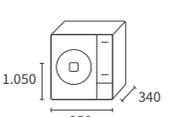




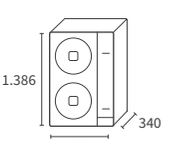
RAS-3.0UFESNH1
RAS- 3.5UFESNH1



RAS-4.0UFESNH1



RAS-5.0UFESNH1
RAS-5.0UFESMH1



RAS-6.0UFESNH1
RAS-6.0UFESMH1
RAS-6.5UFESMH1

Primairy R32

		7.0 kW	8.7 kW	10.1 kW	12.7 kW	14.0 KW	12.1 kW	13.9 kW	16.9 kW
Performance, cooling	**Unit**	**3 Hp**	**3.5 Hp**	**4 Hp**	**5 Hp**	**6 Hp**	**5 Hp**	**6 Hp**	**6.5 Hp**
Nominal cooling capacity (min-max)	kW	7.00 (2.45 - 7.85)	8.70 (4.00 - 9.50)	10.10 (3.50 - 11.00)	12.70 (3.30 - 13.20)	14.00 (3.40 - 16.20)	12.10 (3.30 - 13.20)	13.89 (3.40 - 16.20)	16.90 (3.30 - 18.00)
UK total cooling (UK sensible)	kW	7.56 (4.23)	9.40 (5.26)	10.91 (6.11)	13.72 (7.68)	15.12 (9.23)	13.07 (7.32)	15.02 (9.35)	18.26 (10.22)
Rated power input Cooling	kW	1.91	2.71	3.71	4.31	5.00	4.25	4.81	6.73
EER	-	3.66	3.21	2.72	2.95	2.80	2.85	2.89	2.51
Energy class Cooling	-	A++					-		
SEER (average climate)	-	6.73	6.10	6.10	5.90	5.70	6.05	5.64	5.60
Annual power consumption	kWh/year	388	511	580	705	859	757	894	883
Working range in Cooling	°C	-15°C / +48°C							
Performance, heating									
Nominal heating capacity (min-max)	kW	8.25 (2.20 - 8.70)	9.00 (3.50 - 9.40)	11.20 (3.50 - 11.00)	13.30 (3.00 - 14.60)	15.80 (3.70 - 18.00)	13.50 (3.00 - 14.60)	16.53 (3.70 - 18.00)	19.49 (3.00 - 21.00)
Heating capacity at -7°C[1]	kW	4.50	5.55	6.50	8.70	10.50	8.70	10.50	11.90
Rated power input Heating	kW	2.03	2.25	3.50	3.86	4.95	3.86	4.95	6.74
COP	-	4.07	4.00	3.20	3.45	3.19	3.65	3.51	2.89
Energy class Heating	-	A+		A			-		
SCOP (average climate)	-	4.33	4.20	3.92	3.80	3.75	3.98	3.81	3.87
Annual power consumption	kWh/year	1907	2423	3018	3305	4765	3675	5086	4037
Working range in Heating	°C	-15°C / +24°C							
Indoor units		**RCI-3.0UFE1NH**	**RCI-3.5UFE1NH**	**RCI-4.0UFE1NH**	**RCI-5.0UFE1NH**	**RCI-6.0UFE1NH**	**RCI-5.0UFE1NH**	**RCI-6.0UFE1NH**	**RCI-6.5UFE1NH**
Sound pressure in Cooling mode (L / M / H) [2]	dB(A)	37 / 42 / 45	42 / 46 / 48	42 / 45 / 50	47 / 49 / 51	42 / 45 / 51	47 / 49 / 51	42 / 45 / 51	42 / 45 / 52
Sound power in Cooling mode	dB(A)	59	62	65	64	65	64	65	68
Airflow in Cooling mode (L / M / H)	m^3/h	720 / 980 / 1180	900 / 1120 / 1400	1000 / 1300 / 1600	1550 / 1700 / 1850	1400 / 1700 / 2100	1550 / 1700 / 1850	1400 / 1700 / 2100	
Dehumidification	l/h	-							
Dimensions (H x L x D)	mm	248 x 840 x 840			298 x 840 x 840				
Fascia panel dimensions (H x L x D)	mm	37 x 950 x 950							
Net weight	kg	25	27		32				
Condensate pump	-	Included							
Condensate outlet diameter (ext)	mm	32							
Air filter	-	included							
Part number of the fascia panel	-	PHKF160SAH1							
Remote control	-	Infrared included (HRBA31NEGH)							
Outdoor units	**Unit**	**RAS-3.0UFESNH1**	**RAS-3.5UFESNH1**	**RAS-4.0UFESNH1**	**RAS-5.0UFESNH1**	**RAS-6.0UFESNH1**	**RAS-5.0UFESMH1**	**RAS-6.0UFESMH1**	**RAS-6.5UFESMH1**
Sound pressure in Cooling mode [2]	dB(A)	54		58	62				67
Sound power in Cooling mode	dB(A)	69	70		76				80
Airflow (cooling)	m^3/h	3150		3800	5800	6300	5800	6300	
Dimensions (H x L x D)	mm	670 x 860 x 310		840 x 950 x 340	1050 x 950 x 340	1386 x 950 x 340	1050 x 950 x 340	1386 x 950 x 340	
Net weight	kg	49.0		70.0	85.0	101.5	85.0	101.5	109.0
Compressor	-	Inverter rotary unit							
Refrigeration characteristics									
Diameter of pipes (Liq / Gas)	inches	3/8" / 5/8"		3/8" / 3/4"					
Initial refrigerant charge	kg/TeqCO2	1.40 / 0.95	1.45 / 0.98	2.00 / 1.35	2.50 / 1.69	3.00 / 2.03	2.50 / 1.69	3.00 / 2.03	3.40 / 2.30
Pre-charged for	m	5							
Max. pipe length	m	50							
Additional charge	g/m	28							
Max. level difference (outdoor unit above / outdoor unit below)	m	30 / 30							
Refrigerant	-	R32							
Electrical features									
Power supply	V/Ph/Hz	230V / 1Ph / 50Hz					400V / 3Ph / 50Hz		
Max. current	A	18.1	18.0	22.5	28.2	30.0	11.6	12.1	13.1
Recommended fuse size	A	20		32	32		16		
Cable width (EN 60 335-1) [3]	mm^2	2 x 2.50 + E		2 x 4.00 + E	2 x 6.00 + E		4 x 2.50 + E		
Indoor/outdoor connection (shielded)	mm^2	3 x 1.50 + E							

[1] Data includes defrosting.
[2] Sound pressure measurements were made 1.4m below the unit with no obstructions.
[3] Data shown is for indication purpose only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.

Compatible controls and accessories



Wired programmable remote control

HCWA21NEHH



Infrared remote control

HRBA31NEGH

Included



H-Link interface

HCAA01NEWI



Adapter

HDBA21NEWH

Discover Primairy

Utopia Prime cassette unit

A solution with R410A or R32 for projects of any technical specification



NEW

Unrivaled comfort

Separately control each louvre and enjoy air distributed under the COANDA effect to help eliminate any discomfort.

Energy-saving

The motion sensor (optional) automatically optimizes the level of comfort while limiting the energy consumption in rooms only occupied occasionally. It continuously analyzes thermal disparities as well as the presence of people in the room, adjusting its setting temperature (down to 2°C), fan speed, and airflow direction to suit. (Fig. 1)

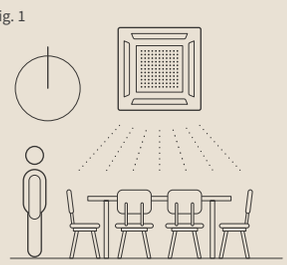
Compactness

Outdoor units are exceptionally compact, with a footprint of 0.23m².

Installation time

The 800 x 800 cassette unit fits perfectly into suspended ceilings thanks to its low recess height (298 mm) as well as in high ceilings with a possible installation of up to 4.20 m, depending on the model. In addition, it is equipped as standard with a pump to remove condensation up to 850 mm.

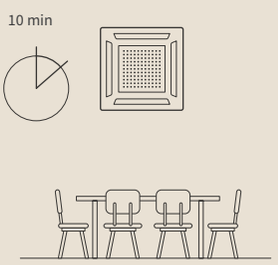
Fig. 1



Phase A
Activity

The cassette unit operates at the setpoint temperature and the chosen fan speed.

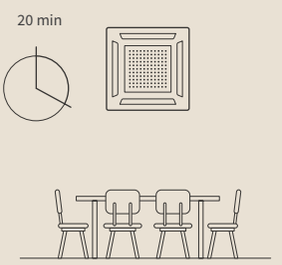
10 min



Phase B
10 minutes if empty

- Adjusts the temperature by +/- 1°C depending on the operating mode.
- Sets the fan speed to one setting lower.

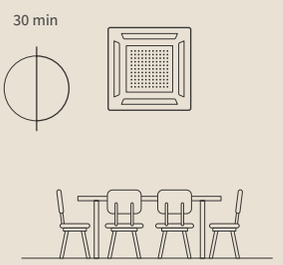
20 min



Phase C
20 minutes if empty

- Adjusts the temperature by +/- 1°C depending on the operating mode.
- Sets the fan speed to one setting lower.

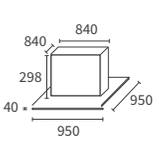
30 min



Phase D
30 minutes if empty
3 OPTIONS:

- 1. MODE ON: stays in Phase C mode.
- 2. STAND BY MODE: the indoor unit enters Unit-OFF mode and returns to normal operation when it detects motion.
- 3. Off MODE: the inside unit turns off and turn on again manually.

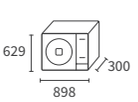
Indoor units



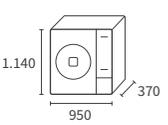
RCI-3.0FSR
RCI-4.0FSR
RCI-5.0FSR
RCI-6.0FSR

Outdoor units





RAS-3HVRC2



RAS-4H(V)RC2E
RAS-5H(V)RC2E
RAS-6H(V)RC2E
RAS-4H(V)NC2E
RAS-5H(V)NC2E
RAS-6H(V)NC2E

Utopia Prime cassette

		Refrigerant R32				Refrigerant R410A		
		7.1kW	10KW	11.9KW	14KW	10KW	11.9KW	14KW
Performance, cooling	**Unit**	**3 Hp**	**4 Hp**	**5 Hp**	**6 Hp**	**4 Hp**	**5 Hp**	**6 Hp**
Nominal cooling capacity (min-max)	kW	7.10	10.00	12.50	14.00	10.00	12.50	14.00
UK total cooling capacity (UK sensible)	kW	7.41 (6.00)	10.30 (7.93)	12.70 (9.14)	13.60 (9.38)	10.30 (7.93)	12.70 (9.14)	13.60 (9.38)
Rated power input cooling	kW	1.80	2.56	3.38	4.32	2.86	3.78	4.91
EER	-	3.93	3.90	3.52	3.24	3.50	3.15	2.85
Seasonal energy class Cooling	-	A++	A++	A++	-	A++	A++	-
SEER (average climate)	-	7.33	6.93(V) - 6.62	6.60 (V) - 6.37	5.88(V) - 5.85	6.69(V) - 6.42	6.35 (V) - 6.13	5.88(V) - 5.85
Working range in Cooling [3]	°C	-15°C / +46°C (DB)				-15°C / +46°C (DB)		
Performance, heating								
Nominal heating capacity (min-max)	kW	8.00	11.20	14.00	16.00	11.20	14.00	16.00
Heating capacity at -7°C*	kW	6.07	10.34	12.13	13.15	10.34	12.13	13.15
Rated power input heating	kW	1.95	2.65	3.52	3.64	2.60	3.52	3.64
COP	-	4.11	4.23	3.98	4.40	4.30	3.98	4.40
Seasonal energy class Heating	-	A+		A+	-	A+	A+	-
SCOP (average climate)	-	4.20	4.36	4.26	4.05	4.40	4.24	4.05
Working range in Heating	°C	-20°C / +18°C (WB)				-20°C / +18°C (WB)		
Indoor units		**RCI-3.0FSR**	**RCI-4.0FSR**	**RCI-5.0FSR**	**RCI-6.0FSR**	**RCI-4.0FSR**	**RCI-5.0FSR**	**RCI-6.0FSR**
Sound pressure in Cooling mode (EL / L / M / H) [2]	dB(A)	27 / 30 / 32 / 37	33 / 39 / 43 / 48	35 / 40 / 45 / 48	37 / 41 / 46 / 48	33 / 39 / 43 / 48	35 / 40 / 45 / 48	37 / 41 / 46 / 48
Sound power	dB(A)	57	64	64	65	64	64	65
Airflow in Cooling mode (EL / L / M / H)	m^3/h	840 / 1080 / 1380 / 1620	1200 / 1440 / 1860 / 2220	1260 / 1560 / 1980 / 2220	1320 / 1680 / 2100 / 2220	1200 / 1440 / 1860 / 2220	1260 / 1560 / 1980 / 2220	1320 / 1680 / 2100 / 2220
Condensate pump included	-	yes				yes		
Max. elevation	mm	850				850		
Dimensions (H x L x D)	mm	298 x 840 x 840				298 x 840 x 840		
Fascia panel dimensions (H x L x D)	mm	40 x 950 x 950				40 x 950 x 950		
Net weight of the unit + fascia panel	kg	26 + 6.50				26 + 6.50		
Condensate outlet diameter (ext)	mm	32				32		
Power supply	-	1~ 230V 50Hz				1~ 230V 50Hz		
Recommended fuse size	A	5				5		
Cable width (EN 60 335-1) [1]	mm^2	3 x 0.75				3 x 0.75		
Fascia panel part no.	-	P-N23NA2				P-N23NA2		
Remote control	-	PC-ARFP1E				PC-ARFP1E		
Outdoor units		**RAS-3HVRC2**	**RAS-4H(V)RC2E**	**RAS-5H(V)RC2E**	**RAS-6H(V)RC2E**	**RAS-4H(V)NC2E**	**RAS-5H(V)NC2E**	**RAS-6H(V)NC2E**
Sound pressure in Cooling mode (Night mode)[2]	dB(A)	54 (48)	54 (51)	54 (51)	56 (51)	54 (51)	54 (51)	56 (51)
Sound power	dB(A)	69	70	70	72	70	70	72
Airflow (Cooling / Heating)	m^3/h	2700	4800			4800		
Dimensions (H x L x D)	mm	629 x 799 x 300	1140 x 950 x 370			1140 x 950 x 370		
Net weight	kg	48	86 (84)			86 (84)		
Compressor	-	Inverter DC rotary unit				Inverter DC rotary unit		
Refrigeration characteristics								
Diameter of pipes (Liq / Gas)	mm (inches)	9.52 (3/8) - 15.88 (5/8)				9.52 (3/8) - 15.88 (5/8)		
Initial refrigerant charge	kg	1.7	3.0			3.2		
Pre-charged for	m	20				20		
Min. length	m	5				5		
Max. length / Additional charge	m/g/m	50 / 45	75 / 45			75 / 60		
Max. level difference (outdoor unit above / outdoor unit below)	m	30 / 20				30 / 20		
Refrigerant	-	R32				R410A		
Electrical features, outdoor unit								
Power supply	-	1~ 230V 50Hz	1 ~ 230V 50Hz or 3N~ 400V 50Hz	2 ~ 230V 50Hz or 3N~ 400V 50Hz	3 ~ 230V 50Hz or 3N~ 400V 50Hz	1 ~ 230V 50Hz or 3N~ 400V 50Hz		
Max. current	A	15.8	22.5 or 15			22.5 or 15		
Recommended fuse size	A	20	25 or 20			25 or 20		
Cable width (EN 60 335-1) [1]	mm^2	3 x 4.00	3 x 6.00 or 5 x 4.00			3 x 6.00 or 5 x 4.00		
Indoor/outdoor connection (shielded)	mm^2	2 x 0.75				2 x 0.75		

[1] Data is for guidance purposes only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.
[2] Sound levels (pressure) are measured in an anechoic chamber at 1.50 m below the unit.
[3] To ensure a cooling mode at -15°C, this option must be activated. (V) Single-phase version.
* Data includes defrosting. To find out the data for your project, refer to our technical catalogues. ** Performance values are stated for RCI-FSR cassette units in accordance with Eurovent benchmarks.

Controls and compatible accessories (see the tab VRF TWIN controls)



Simple wired controller

PC-ARH1E – Optional



Infrared controller

PC-AWR – Optional



Hard wired controller

PC-ARFP1E



Remote sensor

THM-R2AE



Infrared receiver

PC-ALH3



Fresh air kit

PD-75C



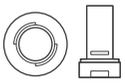
Motion sensor

PS-MSK2



Adjustable input/output contact connections

PCC-1A



Condensation drainage kit

DDB-26 (4Hp models)
DDB-12L (3Hp models)

With its powerful airflow, this ceiling unit is an ideal solution for offices as well as large retail spaces. Located on the ceiling, it frees up floor space.

With guaranteed heating down to -15°C for the Primairy range and -20°C for the Utopia Prime range, this solution will meet all your heating needs.



Ceiling unit
Mono-split



Selection guide

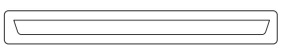
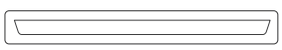
Primairy R32
(Ceiling unit / Console)



Utopia Prime
(Ceiling unit)

NEW



	Primairy R32 (Ceiling unit / Console)	Utopia Prime (Ceiling unit) NEW
		
Refrigerant	R32	R410A or R32
Applications	Business Public	Business Public
Rated power, cooling (kW)	6.5 8.6 9.8 12.7 14.0 12.1 13.7 16.3	7.1 10.0 12.5 14.0
Supply voltage	Single phase (3 / 4 / 5 / 6 Hp) Three phase (5 / 6 / 6.5 Hp)	Single phase (3 / 4 / 5 / 6 Hp) Three phase (4 / 5 / 6 Hp)
SEER (up to)	6.10	7.02
Heating/cooling energy classes	A+ / A++	A+ / A++
Cooling down to	-15°C	-15°C
Heating down to	-15°C	-20°C
Max. length/level difference (m) outdoor unit to indoor unit	50 / 30	75 / 30

Primairy R32 (Ceiling unit / Console)

Best value for money



Versatile: unit can be floor or ceiling-mounted

The Primairy Hitachi console can be either floor or ceiling-mounted, allowing the user to choose the most suitable location in the room for the best thermal comfort. (Fig. 1)

NEW Versatile

Up to 8 indoor units connected to a single remote control (with HDBA21NEWH + HCWA21NEHH). See diagrams on p168.

Guaranteed efficiency

The performance of our Primairy ceiling unit range is guaranteed in Heating mode down to an outside temperature of -15°C.
DC Inverter technology precisely adjusts the power needed to condition a space, and ensures the comfort and durability of the system.

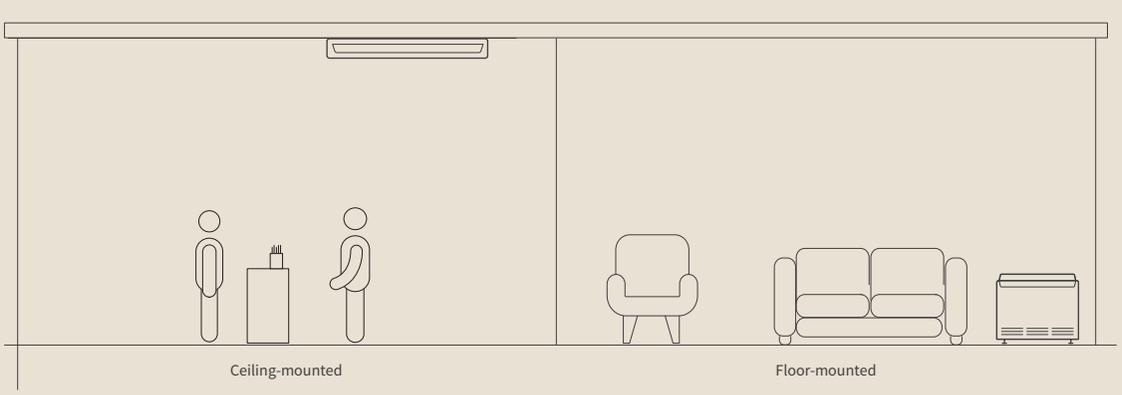
Designed for comfort or technical applications

The unit has free contacts as standard to issue error reports or remotely stop/start the system. Ideal for installation in a technical room.

Fresh air inlet

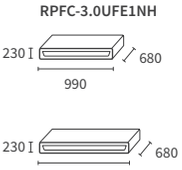
The optional fresh air inlet improves indoor air quality.

Fig. 1

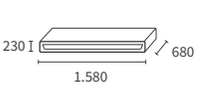


Indoor units

RPFC-3.0UFE1NH



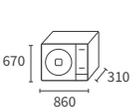
RPFC-3.5UFE1NH
RPFC-4.0UFE1NH



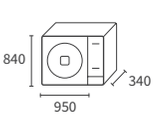
RPFC-5.0UFE1NH
RPFC-6.0UFE1NH
RPFC-6.5UFE1NH

Outdoor units

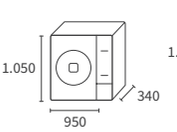




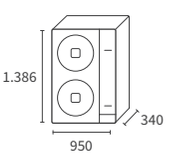
RAS-3.0UFESNH1
RAS-3.5UFESNH1



RAS-4.0UFESNH1



RAS-5.0UFESNH1
RAS-5.0UFESMH1



RAS-6.0UFESNH1
RAS-6.0UFESMH1
RAS-6.5UFESMH1

Primairy R32 (ceiling unit / console)

		6.5kW	8.6kW	9.8kW	12.7kW	14.0kW	12.1kW	13.8kW	16.3kW
Performance, cooling	**Unit**	**3 Hp**	**3.5 Hp**	**4 Hp**	**5 Hp**	**6 Hp**	**5 Hp**	**6 Hp**	**6.5 Hp**
Nominal cooling capacity (min-max)	kW	6.50 (2.45 - 7.85)	8.60 (3.50 - 9.00)	9.80 (3.50 - 11.00)	12.70 (3.30 - 13.20)	14.00 (3.10 - 16.10)	12.10 (3.30 - 13.20)	13.76 (3.10 - 16.10)	16.30 (3.30 - 18.00)
UK total cooling (UK sensible)	kW	7.02 (3.93)	9.29 (5.20)	10.59 (5.93)	13.72 (7.68)	15.12 (9.23)	13.07 (7.32)	14.87 (9.07)	17.61 (9.86)
Rated power input Cooling	kW	1.94	2.95	3.75	4.53	5.15	4.40	5.00	6.82
EER	-	3.35	2.92	2.61	2.80	2.72	2.75		2.39
Energy class Cooling	-	A+	A++	A+			-		
SEER (average climate)	-	5.81	6.10	5.87	5.93	5.45	5.70	5.33	5.30
Annual power consumption	kWh/year	391	509	585	709	899	803	940	876
Working range in Cooling	°C	-15°C / +48°C							
Performance, heating									
Nominal heating capacity (min-max)	kW	7.35 (2.20 - 8.70)	8.70 (3.50 - 9.50)	10.50 (3.32 - 12.00)	13.30 (3.00 - 14.60)	16.50 (3.60 - 18.00)	13.50 (3.00 - 14.60)	16.59 (3.60 - 18.00)	18.00 (3.00 - 19.00)
Heating capacity at -7°C[1]	kW	4	5.6	6.5	8.4	10	8.4	10	11.1
Rated power input Heating	kW	2.07	2.30	3.65	4.04	5.40	4.17	4.85	6.82
COP	-	3.55	3.78	2.88	3.29	3.06	3.24	3.42	2.64
Energy class Heating	-	A+		A			-		
SCOP (average climate)	-	4.01	4.10	3.82	3.78	3.68	3.78	3.55	3.78
Annual power consumption	kWh/year	2168	2192	2825	3133	4887	3868	5015	4509
Working range in Heating	°C	-15°C / +24°C							
Indoor units		**RPFC-3.0UFE1NH**	**RPFC-3.5UFE1NH**	**RPFC-4.0UFE1NH**	**RPFC-5.0UFE1NH**	**RPFC-6.0UFE1NH**	**RPFC-5.0UFE1NH**	**RPFC-6.0UFE1NH**	**RPFC-6.5UFE1NH**
Sound pressure in Cooling mode (L / M / H)[2]	dB(A)	44 / 48 / 51	43 / 48 / 54	51 / 52 / 54	48 / 51 / 54	46 / 52 / 58	48 / 51 / 54	46 / 52 / 58	48 / 53 / 56
Sound power in Cooling mode	dB(A)	65	65	65	68	75	68	75	74
Airflow in Cooling mode (L / M / H)	m^3/h	800 / 950 / 1100	900 / 1120 / 1450	1300 / 1500 / 1700	1600 / 1800 / 2000	1200 / 1600 / 2000	1600 / 1800 / 2000	1200 / 1600 / 2000	1500 / 1700 / 2000
Dehumidification	l/h	1.95	3.20	4.40	5.30	6.00	5.30	6.00	6.40
Dimensions (H x L x D)	mm	230 x 990 x 680	230 x 1285 x 680		230 x 1580 x 680				
Net weight	kg	30	37		48				
Condensate pump, optional	-	P26(E)-2			P26(E)-3				
Condensate outlet diameter (ext.)	mm	25							
Air filter	-	included							
Remote control	-	Infrared included (HRBA31NEGH)							
Outdoor units	**Unit**	**RAS-3.0UFESNH1**	**RAS-3.5UFESNH1**	**RAS-4.0UFESNH1**	**RAS-5.0UFESNH1**	**RAS-6.0UFESNH1**	**RAS-5.0UFESMH1**	**RAS-6.0UFESMH1**	**RAS-6.5UFESMH1**
Sound pressure in Cooling mode[2]	dB(A)	54		58	62				67
Sound power in Cooling mode	dB(A)	69	70		76				80
Airflow (cooling)	m3/h	3150		3800	5800	6300	5800	6300	
Dimensions (H x L x D)	mm	670 x 860 × 310		840 x 950 x 340	1050 x 950 × 340	1386 x 950 × 340	1050 x 950 × 340	1386 x 950 × 340	
Net weight	kg	49.0		70.0	85.0	101.5	85.0	101.5	109.0
Compressor	-	Inverter rotary unit							
Refrigeration characteristics									
Diameter of pipes (Liq / Gas)	inches	3/8" / 5/8"		3/8" / 3/4"					
Initial refrigerant charge	kg/TeqCO2	1.40 / 0.95	1.45 / 0.98	2.00 / 1.35	2.50 / 1.69	3.00 / 2.03	2.50 / 1.69	3.00 / 2.03	3.40 / 2.30
Pre-charged for	m	5							
Max. pipe length	m	50							
Additional charge	g/m	28							
Max. level difference (outdoor unit above / outdoor unit below)	m	30 / 30							
Refrigerant	-	R32							
Electrical features									
Power supply	V/Ph/Hz	230V / 1Ph / 50Hz					400V / 3Ph / 50Hz		
Max. current	A	18.1	18.0	22.5	28.2	30.0	11.6	12.6	13.6
Recommended fuse size	A	20		32	32		16		
Cable width (EN 60 335-1)[3]	mm^2	2 x 2.5 + E		2 x 4 + E	2 x 6 + E		4 x 2.5 +E		
Indoor/outdoor connection (shielded)	mm^2	3 x 1.5 +E							

[1] Data includes defrosting.
[2] Sound pressure measurements were made 1.0m below the unit with no obstructions.
[3] Data shown is for indication purpose only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.

Compatible controls and accessories



Wired programmable remote control

HCWA21NEHH



Condensate drainage pump

P26(E)-2 (3 ; 3,5 ; 4Hp) / P26(E)-3 (5 ; 6 ; 6.5Hp)



H-Link interface

HCAA01NEWI



Infrared remote control

HRBA31NEGH

Included



Adapter

HDBA21NEWH

Discover Primairy





Utopia Prime ceiling unit

A solution with R410A or R32 for projects of any technical specification



NEW

Compactness

Outdoor units are exceptionally compact, with a footprint of 0.23m².

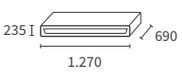
Easy to install

We have a number of solutions to help your installation:
- Choice of supply voltage
- Extensive range of functions
- Extra long pipe runs
- Start/Stop contacts and fault reports
- Compatible with all System Free control systems

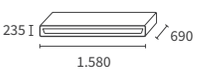
Energy-saving

The motion sensor (optional) automatically optimizes the level of comfort while limiting the energy consumption in rooms only occupied occasionally. It continuously analyzes thermal disparities as well as the presence of people in the room, adjusting its setting temperature (down to 2°C), fan speed, and airflow direction to suit.

Indoor units



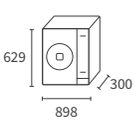
RPC-3.0FSR



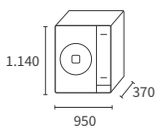
RPC-4.0FSR
RPC-5.0FSR
RPC-6.0FSR

Outdoor units





RAS-3HVRC2



RAS-4H(V)RC2E
RAS-5H(V)RC2E
RAS-6H(V)RC2E
RAS-4H(V)NC2E
RAS-5H(V)NC2E
RAS-6H(V)NC2E

Utopia Prime ceiling unit

		R32 refrigerant				R410A refrigerant		
		7.1kW	10KW	11.9KW	14KW	10KW	11.9KW	14KW
Performance, cooling	**Unit**	**3 Hp**	**4 Hp**	**5 Hp**	**6 Hp**	**4 Hp**	**5 Hp**	**6 Hp**
Nominal cooling capacity	kW	7.10	10.00	11.90	14.00	10.00	11.90	14.00
UK total cooling capacity (UK sensible)	kW	7.41 (5.33)	10.30 (7.93)	12.70 (9.02)	13.60 (9.38)	10.30 (7.93)	12.70 (9.02)	13.60 (9.38)
Rated power input cooling	kW	1.82	2.88	3.88	4.38	3.23	4.34	4.98
EER	-	3.91	3.47	3.06	3.20	3.10	2.74	2.81
Seasonal energy class Cooling	-	A++	A+	A+	-	A+	A+	-
SEER (average climate)	-	7.02	5.93(V) - 5.70	6.09(V) - 5.89	5.56(V) - 5.53	5.72(V) - 4.93	5.86(V) - 5.71	5.56(V) - 5.53
Working range in Cooling [3]	°C	-15°C / +46°C (DB)				-15°C / +46°C (DB)		
Performance, heating								
Nominal heating capacity	kW	8.00	11.20	14.00	16.00	11.20	14.00	16.00
Heating capacity at -7°C*	kW	6.30	10.10	10.50	12.00	10.10	10.50	12.00
Rated power input heating	kW	2.27	3.23	4.36	3.64	3.17	4.36	3.64
COP	-	3.52	3.47	3.21	4.40	3.53	3.21	4.40
Seasonal energy class Heating	-	A+	A+	A+	-	A+	A+	-
SCOP (average climate)	-	4.09	4.12	4.09	4.05	4.18	4.09	4.05
Working range in Heating	°C	-20°C / +18°C (WB)				-20°C / +18°C (WB)		
Indoor units		**RPC-3.0FSR**	**RPC-4.0FSR**	**RPC-5.0FSR**	**RPC-6.0FSR**	**RPC-4.0FSR**	**RPC-5.0FSR**	**RPC-6.0FSR**
Sound pressure in Cooling mode (EL / L / M / H) [2]	dB(A)	29 / 33 / 37 / 40	32 / 37 / 42 / 44	35 / 41 / 45 / 48	36 / 42 / 47 / 49	32 / 37 / 42 / 44	35 / 41 / 45 / 48	36 / 42 / 47 / 49
Sound power	dB(A)	56	60	64	65	60	64	65
Airflow in Cooling mode (EL / L / M / H)	m^3/h	750 / 930 / 1110 / 1260	1020 / 1320 / 1590 / 1800	1200 / 1530 / 1860 / 2100	1260 / 1620 / 1950 / 2220	1020 / 1320 / 1590 / 1800	1200 / 1530 / 1860 / 2100	1260 / 1620 / 1950 / 2220
Condensate pump included	-	no (optional accessory)				no (optional accessory)		
Max. elevation	mm	600				600		
Dimensions (H x L x D)	mm	235 x 1270 x 690	235 x 1580 x 690			235 x 1580 x 690		
Weight	kg	35	41			41		
Condensate outlet diameter (ext)	mm	32				32		
Power supply	-	1~ 230V 50Hz				1~ 230V 50Hz		
Recommended fuse size	A	5				5		
Max. current	A	5				5		
Cable width (EN 60 335-1) [1]	mm^2	3 x 0.75				3 x 0.75		
Remote control	-	PC-ARFP1E				PC-ARFP1E		
Outdoor units		**RAS-3HVRC2**	**RAS-4H(V)RC2E**	**RAS-5H(V)RC2E**	**RAS-6H(V)RC2E**	**RAS-4H(V)NC2E**	**RAS-5H(V)NC2E**	**RAS-6H(V)NC2E**
Sound pressure in Cooling mode (Night mode) [2]	dB(A)	54 (48)	54 (51)	54 (51)	56 (51)	54 (51)	54 (51)	56 (51)
Sound power	dB(A)	69	70	70	72	70	70	72
Airflow (Cooling / Heating)	m^3/h	2700	4800			4800		
Dimensions (H x L x D)	mm	629 x 799 x 300	1140 x 950 x 370			1140 x 950 x 370		
Net weight	kg	48	86 (84)			86 (84)		
Compressor	-	Inverter DC rotary unit				Inverter DC rotary unit		
Refrigeration characteristics								
Diameter of pipes (Liq / Gas)	mm (inches)	9.52 (3/8) - 15.88 (5/8)				9.52 (3/8) - 15.88 (5/8)		
Initial refrigerant charge	kg	1.7	3.0			3.2		
Pre-charged for	m	20				20		
Min. length	m	5				5		
Max. length / additional charge	m/g/m	50 / 45	75 / 45			75 / 60		
Max. level difference (outdoor unit above / outdoor unit below)	m	30 / 20				30 / 20		
Refrigerant	-	R32				R410A		
Electrical features, outdoor unit								
Power supply	-	1~ 230V 50Hz	1 ~ 230V 50Hz or 3N~ 400V 50Hz	2 ~ 230V 50Hz or 3N~ 400V 50Hz	3 ~ 230V 50Hz or 3N~ 400V 50Hz	1 ~ 230V 50Hz or 3N~ 400V 50Hz		
Max. current	A	15.8	22.5 or 15			22.5 or 15		
Recommended fuse size	A	20	25 or 20			25 or 20		
Cable width (EN 60 335-1) [1]	mm^2	3 x 4.00	3 x 6.00 or 5 x 4.00			3 x 6.00 or 5 x 4.00		
Indoor/outdoor connection (shielded)	mm^2	2 x 0.75				2 x 0.75		

[1] Data is for guidance purposes only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.
[2] Sound levels (pressure) are measured in an anechoic chamber at 1.0 m below the unit.
[3] To ensure a cooling mode at -15°C, this option must be activated. (V) Single-phase version.
* Data includes defrosting. To find out the data for your project, refer to our technical catalogues.

controls and compatible accessories (see the tab VRF TWIN controls)



Simple wired controller

PC-ARH1E



Infrared controller

PC-AWR



Hard wired control

PC-ARFP1E



Remote sensor

THM-R2AE



Infrared receiver

PC-ALHC1 (integrated)

PC-ALHZ1 (external)



Condensation drainage kit

DDB-26 (4Hp models)
DDB-12L (3Hp models)



Motion sensor

SOR-NEP



Connectors

PCC-1A

The standard multi-split range consists of 5 outdoor units capable of air conditioning up to five different areas on the same unit. The power of its units and its wide range of combinations makes it easy to adapt any installation setup. The new Summit multi-split range features 2 or 3 outputs to connect up to 3 Summit indoor wall units.



Multi-split

Multi-split standard outdoor units



Indoor units







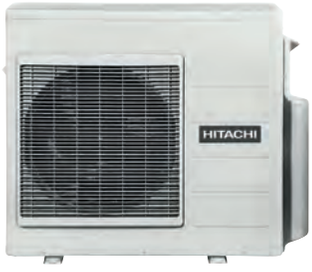




Multi-split Summit outdoor units







Indoor units



Selection guide

Multi-split standard RAM-NPE outdoor units

	Rated power Cooling (kW)	3.3	4.0	5.3	6.8 / 7.0	8.5	10.0
	Heating capacity at -7°C Heating (kW)	Up to 3.5	Up to 4.0	Up to 5.5	Up to 6.5	Up to 7.8	Up to 8.0
(3.3 and 4.0 kW) (5.3 kW)	2 indoor units	SEER A+++ 8.50 SCOP A++ 4.60	SEER A+++ 8.50 SCOP A++ 4.60	SEER A+++ 8.50 SCOP A++ 4.60			
(5.3 and 6.8 kW)	3 indoor units			SEER A+++ 8.50 SCOP A++ 4.60	SEER A++ 8.10 SCOP A++ 4.60		
(7.0 kW)	4 indoor units				SEER A++ 8.10 SCOP A++ 4.60		
(8.5 and 10.0 kW)	5 indoor units					SEER A++ 7.90 SCOP A++ 4.30	SEER A++ 6.52 SCOP A++ 4.22

R32 REFRIGERANT

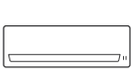
HIBERNATE
Puts electronic components into standby mode

POWER HIGH at -7°C

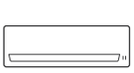
VECTOR CONTROL
Very low-frequency compressor control
Reduced noise level Energy-saving

Compatible indoor units

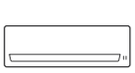
Multi-Split indoor units



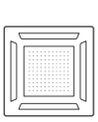
Shirokuma wall unit
RAK-18QXE
RAK-25~50-RXE



Performance wall unit
RAK-15QPE
RAK-18~50RPE
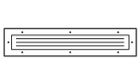


Light commercial wall unit
RAK-60RPE



600 x 600 R32 cassette
RAI-25~ 60RPE



Shirokuma console
RAF-25~50RXE



R32 ducted
RAD-18QPE
RAD-25~60RPE

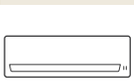
Multi-split Summit RAM-NEF outdoor units

	Rated power Cooling (kW)	4.0	5.3
	Heating capacity at -7°C Heating (kW)	Up to 3.5	Up to 4.3
(4 and 5.3 kW)	2 indoor units	SEER A++ 8.25 SCOP A+ 4.30	SEER A++ 8.10 SCOP A+ 4.10
(5.3kW)	3 indoor units		SEER A++ 8.10 SCOP A+ 4.10

R32 REFRIGERANT

Compatible indoor units

Multi-Split indoor units



Summit wall unit
RAK-15QEF
RAK-18~50REF

Benefits
Multi-split

1 Discreet design that blends in



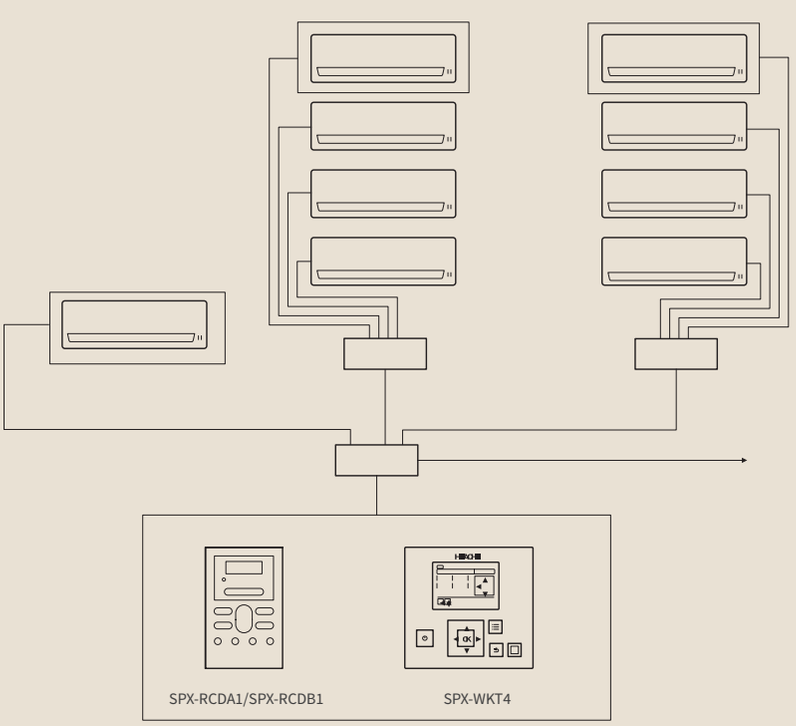
With their harmonized designs, the Shirokuma console and wall mount will fit perfectly into any indoor space.

2 Easy to install and maintain



- With duct-type units, you can adapt the static pressure to the needs of each installation.
- Outdoor units with 2 outlets come pre-charged with R32 gas. There is no need to add more gas. This saves on installation time and costs.
- Alarm code is displayed on the control for faster diagnostics.

3 Solutions to control the system in a centralized way



Central control for up to 13 indoor units with the wired remote control SPX-WTK4 and boxes SPX-DST1 + SPX-WDST8M

Multi-split

Standard R32 outdoor units



	Part no.	RAM-33NP2E	RAM-40NP2E	RAM-53NP2E	RAM-53NP3E	RAM-68NP3E	RAM-70NP4E	RAM-90NP5E	RAM-110NP5E
Number of connectible units (min-max)	-	2			2 / 3		2 / 4	2 / 5	2 / 5
Nominal cooling capacity (min-max)	kW	3.3 (1.50 - 3.80)	4.00 (1.50 - 4.20)	5.30 (1.50 - 6.60)		6.80 (2.40 - 8.00)	7.00 (2.40 - 8.80)	8.50 (1.52 - 9.50)	10.00 (1.50 - 12.50)
Nominal heating capacity (min-max)	kW	4.00 (1.50 - 4.60)	5.20 (1.50 - 5.50)	6.80 (1.50 - 7.20)		8.50 (2.40 - 9.50)	8.50 (2.60 - 9.50)	10.00 (1.50 - 11.50)	12.00 (1.50 - 12.70)
Heating capacity at -7°C [1]	kW	3.50	4.00	4.50	5.50	6.50		7.80	8.00
Rated power input Cooling (min-max)	kW	0.73 (0.20 - 1.05)	0.95 (0.20 - 1.15)	1.26 (0.20 - 1.66)	1.29 (0.20 - 1.68)	1.83 (0.46 - 2.96)	1.89 (0.46 - 3.20)	2.50 (0.50 - 3.85)	3.096 (0.50 - 4.50)
Rated power input Heating (min-max)	kW	0.90 (0.20 - 1.50)	1.18 (0.20 - 1.50)	1.61 (0.20 - 2.01)	1.61 (0.20 - 2.01)	2.12 (0.43 - 2.60)	2.02 (0.48 - 3.12)	2.56 (0.50 - 3.85)	3.158 (0.50 - 5.00)
EER/COP	-	4.50 / 4.40	4.20 / 4.40	4.20 / 4.20	4.10 / 4.20	3.70 / 4.00	3.70 / 4.20	3.40 / 3.90	3.23 / 3.8
SEER/SCOP (average climate)	-	8.50 / 4.60				8.10 / 4.60		7.90 / 4.30	6.52 / 4.22
Seasonal energy class (Cooling/Heating)	-	A+++ / A++				A++ / A++			A++ / A+
Sound pressure in Cooling mode	dB(A)	48	49	50				53	54
Sound power	dB(A)	60		61		63		66	68
Airflow (Cooling/Heating)	m3/h	1620 / 1620		2160 / 2160		2700 / 2700		3900 / 3900	4000 / 4000
Dimensions (HxWxD)	mm	570 x 750 x 280		750 x 850 x 298		800 x 850 x 298		800 x 950 x 370	
Net weight	kg	38	41	53	54	58		71	76
Power supply	-	220-230V							
Recommended fuse size	A	16			20			25	
Cable width (EN 60 335-1) [2]	mm^2	2 x 2.5 + E							
Indoor/outdoor connection	mm^2	3 x 1.5 + E							
Diameter of pipes (Liq/Gas)	inches	(1/4 x 2 / 3/8 x 2)			(1/4 x 3 / 3/8 x 3)		(1/4 x 4 / 3/8 x 3 + 1/2 x 1)	1/4 x 5 / (3/8 x 3) + (1/2 x 2)	
Initial refrigerant charge	kg	1.02		1.80	2.05			2.40	
Pre-charged for	m	35			30			35	30
Min. length	m	3							
Max. length / additional charge	m/g/m	35 / -			60 / 20			75 / 15	75 / 13
Max. level difference	m	10		20					
Operating range Cooling	°C	-10°C / +46°C							
Operating range Heating	°C	-15°C / +24°C							
Refrigerant	-	R32							
Compressor	-	ROTARY	TWIN ROTARY						

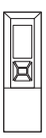
[1] Data includes defrosting. To find out the data for your project, refer to our technical catalogues.
[2] Data shown is for indication purpose only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.

Controls and compatible accessories (see page 161)



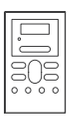
Wired programmable remote control

SPX-WKT4



Infrared remote control

SPX-RCKA1 for ducted
SPX-RCKA2 for RAK-60RPE
SPX-RCKA3 for cassette



Wired standard remote control

SPX-RCDA1



Wired standard remote control

SPX-RCDB1

Multi-split

Indoor units

Shirokuma wall unit



Shirokuma range of wall units

Suits any type of installation with models designed for smaller areas. The size 18 model is switchable to reduce power (1.8 kW > 1.2 kW in cooling mode and 2.5 kW > 1.8 kW in heating mode).

Motion sensor

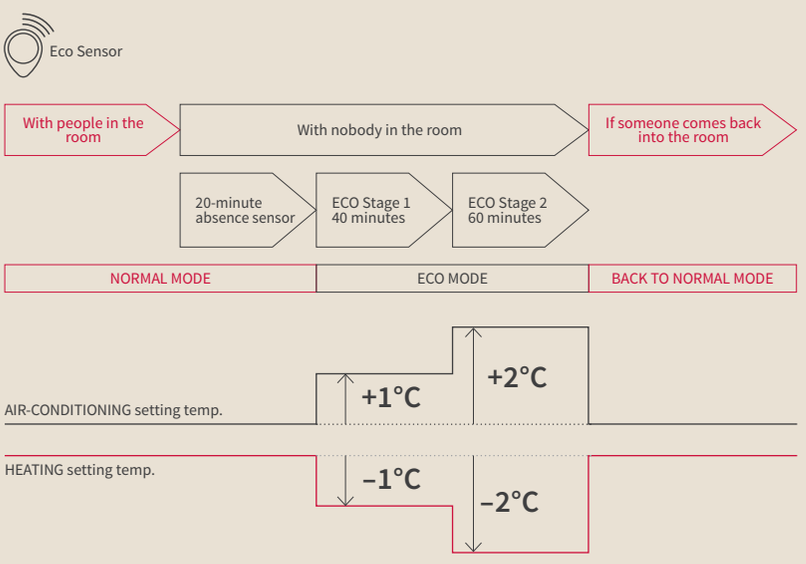
It adapts how the indoor unit works depending on whether there are people in the room or not. See Eco Sensor image opposite.

Ultra performance filtration

STAINLESS prefilters and Active Carbon filters as standard. The Active Carbon filter with silver ions (known for their antibacterial properties) acts by adsorption. This retains certain gas molecules or suspended particles on the surface of the filter. The air that comes out of the filter is then free of odors and pollutants.

Silent units

20 dB(A) on the size 25 model.



	Unit	RAK-18QXE	RAK-25RXE	RAK-35RXE	RAK-50RXE
Nominal cooling capacity (min - max)	kW	1.80 (1.00 - 2.50)	2.50 (0.90 - 3.10)	3.50 (0.90 - 4.00)	5.00 (1.90 - 5.20)
Nominal heating capacity (min - max)	kW	2.50 (1.10 - 3.20)	3.20 (0.90 - 4.20)	4.00 (0.90 - 4.80)	5.80 (2.20 - 7.00)
Sound pressure in Cooling mode (EL / L / M / H) [1]	dB(A)	20 / 25 / 30 / 36	20 / 27 / 35 / 43	22 / 29 / 37 / 45	25 / 31 / 39 / 47
Sound power	dB(A)	49	58	60	
Airflow in Cooling mode (EL / L / M / H)	m^3/h	300 / 330 / 430 / 500	300 / 330 / 510 / 600	320 / 340 / 520 / 660	350 / 400 / 580 / 720
Dehumidification	l/h	1.2	1.4	1.6	2.0
Dimensions (H x W x D)	mm	295 x 900 x 210			
Diameter of pipes (Liq / Gas)	inches	1/4 - 3/8			1/4 - 1/2
Net weight	kg	11.0			
Power supply	V	220 - 230V			
Cable width (EN 60 335 - 1) [2]	mm^2	3 x 1.50 + E			3 x 2.50 + E
Remote control	-	Weekly infrared RAR-6NE1 (included)			

[1] Sound pressure measurements were made 1 meter from the unit without obstructions (see the technical catalogue).
[2] Data shown is for indication purpose only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.

Multi-split

Indoor units

Performance wall units and Light commercial wall units



The Performance range of wall units

Suits any type of installation with models designed for smaller areas.
The size 15 model is switchable to reduce power (1.5 kW > 1 kW* in cooling mode and 2 kW > 1.5 kW in heating mode).
With its Active Carbon filter, the air is free of odors and pollutants.

	Unit	RAK-15QPE	RAK-18RPE	RAK-25RPE	RAK-35RPE	RAK-42RPE	RAK-50RPE	RAK-60RPE
Nominal cooling capacity (min - max)	kW	1.50 (0.90 - 2.00)	2.00 (0.90 - 2.50)	2.50 (0.90 - 3.10)	3.50 (0.90 - 4.00)	4.20 (1.70 - 5.00)	5.00 (1.90 - 5.20)	6.00 (1.20 - 6.50)
Nominal heating capacity (min - max)	kW	2.00 (1.00 - 2.50)	2.50 (0.90 - 3.20)	3.40 (0.90 - 4.40)	4.20 (0.90 - 5.00)	5.40 (1.70 - 6.00)	6.00 (2.20 - 7.30)	7.00 (1.20 - 8.00)
Sound pressure in Cooling mode (EL / L / M / H) [1]	dB(A)	20 / 24 / 30 / 34	21 / 24 / 33 / 37	22 / 24 / 33 / 40	25 / 26 / 36 / 43	25 / 28 / 39 / 46	25 / 28 / 39 / 46	30 / 33 / 42 / 48
Airflow in Cooling mode (EL / L / M / H)	m^3/h	312 / 350 / 400 420	312 / 350 / 400 440	333 / 370 / 430 510	353 / 420 / 485 680	353 / 410 / 540 720	353 / 410 / 540 750	310 / 410 / 570 / 720
Dehumidification	l/h	1.20	1.20	1.40	1.60	1.80	2.00	2.8
Dimensions (H x W x D)	mm	280 x 780 x 230						300 x 900 x 230
Diameter of pipes (Liq / Gas)	inches	1/4 - 3/8				1/4 - 1/2		
Net weight	kg	8.5						11.5
Power supply	V	220 - 230V						
Cable width (EN 60 335 - 1) [2]	mm^2	3 x 1.50 + E				3 x 2.50 + E		3 x 1.50 + E
Remote control	-	Weekly infrared RAR-6NE1 (included)						Not supplied (SPX-RCKA2 / SPX-RCDB1 / SPX-WKT4)

[1] Sound pressure measurements were made 1 meter from the unit without obstructions (see the technical catalogue).
[2] Data shown is for indication purpose only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.

Cassette unit 600 × 600



Indoor units	Unit	RAI-25RPE	RAI-35RPE	RAI-50RPE	RAI-60RPE
Nominal cooling capacity (min - max)	kW	2.50 (0.90 - 3.00)	3.50 (0.90 - 4.00)	5.00 (1.20 - 5.80)	6.00 (1.20 - 6.50)
Nominal heating capacity (min - max)	kW	3.50 (0.90 - 5.00)	4.80 (0.90 - 6.60)	6.00 (1.20 - 6.80)	7.00 (1.20 - 8.00)
Sound pressure in Cooling mode (EL / L / M / H) [1]	-	27 / 31 / 35 / 38	27 / 33 / 37 / 40	29 / 35 / 39 / 43	
Sound pressure in Heating mode (EL / L / M / H) [1]	-	28 / 32 / 36 / 39	28 / 34 / 38 / 41	30 / 36 / 40 / 44	
Sound power	dB(A)	54	56	56	
Airflow in Cooling mode (EL / L / M / H)	m^3/h	360 / 505 / 590 / 660		390 / 540 / 630 / 720	
Dehumidification	l/h	1.4	1.8	2.8	3.8
Dimensions (H x W x D)	mm	285 x 570 x 570			
Fascia panel dimensions (H x W x D)	mm	30 x 620 x 620			
Condensate outlet diameter (ext.)	mm	32			
Condensate pump	-	yes			
Diameter of pipes (Liq / Gas)	inches	1/4 - 3/8		1/4 - 1/2	1/4 - 1/2
Net weight	kg	17			
Net weight of fascia panel	kg	2.8			
Part number of front panel	-	P-AP56NAMS			
Power supply	V	220 - 230V			
Cable width (EN 60 335-1) [2]	mm^2	3 x 1.50 + E			
Remote control	-	Not supplied (SPX-RCKA3 / SPX-RCDB1 / SPX-WKT4)			

[1] Sound pressure measurements were made 1 meter from the unit without obstructions (see the technical catalogue).
[2] Data shown is for indication purpose only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.

Shirokuma console



Extended airflow

With a larger dynamic airflow, the air can reach every corner of the room. The room is conditioned (with heating or cooling air) at the touch of a button on the remote control. (Fig. 1)

Flexibility with the multi-split range

The indoor unit of the Shirokuma console is compatible with all multi-split outdoor groups. You can also have multiple indoor units installed in different rooms with a single outdoor unit.

Exceptionally high-performance

The console has an energy rating of A+++. Guaranteed energy savings!

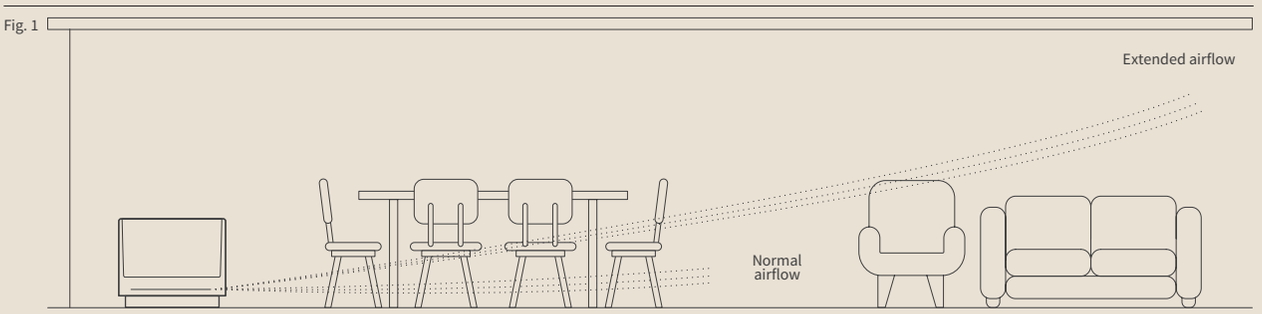
Management options

The console comes with an infrared remote control as standard. It is also compatible with the SPX-WKT4 wired remote control with hourly programming.

Compatible with airCloud

The entire Hitachi residential range is compatible with the airCloud for Home system, which allows you to control equipment from any mobile device acting as a remote control.

Fig. 1



Indoor units	Unit	RAF-25RXE	RAF-35RXE	RAF-50RXE
Nominal cooling capacity (min - max)	kW	2.50 (0.90 - 3.10)	3.50 (0.90 - 4.00)	5.00 (0.90 - 5.20)
Nominal heating capacity (min - max)	kW	3.40 (0.90 - 4.40)	4.50 (0.90 - 5.00)	6.00 (0.90 - 8.10)
Sound pressure in Cooling mode (EL / L / M / H) [1]	dB(A)	20 / 26 / 31 / 38	20 / 26 / 31 / 39	22 / 29 / 36 / 43
Sound power	dB(A)	52		56
Airflow in Cooling mode (EL / L / M / H)	m^3/h	270 / 390 / 510 / 630	270 / 390 / 510 / 660	300 / 450 / 540 / 720
Dehumidification	l/h	1.4	1.9	2.8
Dimensions (H x W x D)	mm	590 x 750 x 215		
Condensate outlet diameter (ext.)	mm	16		
Diameter of pipes (Liq / Gas)	inches	1/4 - 3/8		1/4 - 1/2
Net weight	kg	15		
Power supply	-	220 - 230 V		
Cable width (EN 60 335-1) [2]	mm^2	3 x 1.50 + E		3 x 2.50 + E
Remote control	-	Weekly infrared RAR-6NE1 (included)		

[1] Sound pressure measurements were made 1 meter from the unit without obstructions (see the technical catalogue).
[2] Data shown is for indication purpose only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.

Controls and compatible accessories (see page 161)

Leakage sensor
SPX-RAFGLS

Wired programmable remote control
SPX-WKT4

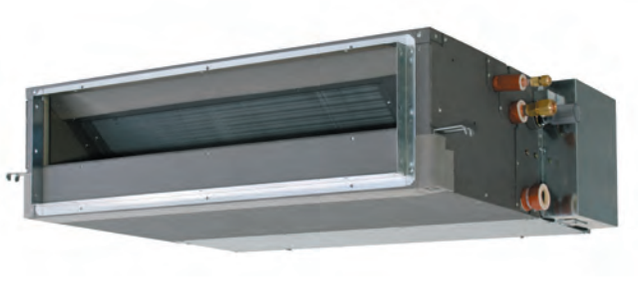
Infrared remote control
SPX-RCKA1 for ducted
SPX-RCKA2 for RAK-60RPE
SPX-RCKA3 for cassette

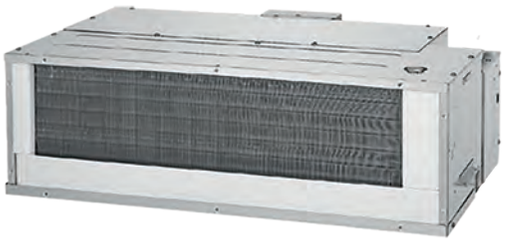
Wired standard remote control
SPX-RCDB1

Multi-split

Indoor units

R32 ducted





Indoor unit ducts

These now have a static pressure setting available: 50 to 150 Pa.

Plenums (optional)

Plenum supply air 2 x D200.
- return air plenum 2 x D200 (with or without filter access).

Remote sensor (optional)

For maximum comfort in the home
- Part number: SPX-RTH1

Indoor units	Unit	RAD-18QPE	RAD-25RPE	RAD-35RPE	RAD-50RPE	RAD-60RPE
Nominal cooling capacity (min - max)	kW	1.80 (0.90 - 2.50)	2.50 (0.90 - 3.00)	3.50 (0.90 - 4.00)	5.00 (1.20 - 5.80)	6.00 (1.20 - 6.50)
Nominal heating capacity (min - max)	kW	2.50 (0.90 - 3.20)	3.50 (0.90 - 5.50)	4.80 (0.90 - 6.60)	6.00 (1.20 - 6.80)	7.00 (1.20 - 8.00)
Sound pressure in Cooling mode (EL / L / M / H) [1]	dB(A)	30 / 33 / 37 / 41			29 / 32 / 35 / 39	
Sound pressure in Heating mode (EL / L / M / H) [1]	dB(A)	30 / 34 / 38 / 42			29 / 32 / 35 / 40	
Sound power	dB(A)	57			53	
Airflow in Cooling mode (EL / L / M / H)	m^3/h	330 / 390 / 450 / 510			350 / 540 / 800 / 1140	
Static pressure (L / M / H)	Pa	- / - / 70			50 / 100 / 150	
Dehumidification	l/h	1.4		1.6	2.8	2.8
Dimensions (H x W x D)	mm	235 x 750 x 400			270 x 900 x 720	
Condensate outlet diameter (ext)	mm	16			32	
Condensate pump	-	YES				
Diameter of pipes (Liq / Gas)	inches		1/4 - 3/8		1/4 - 1/2	
Net weight	kg	16			35	
Power supply	V		220 - 230V			
Cable width (EN 60 335-1) [2]	mm^2		3 x 1.5 + E		3 x 1.5 + E	
Remote control		Not supplied (SPX-RCKA1 / SPX-RCDB1 / SPX-WKT4)				

[1] Sound pressure measurements were made 1 meter from the unit without obstructions (see the technical catalogue).
[2] Data shown is for indication purpose only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.

Part number	Description	Length	Height	Depth	Compatibility	Number of ductwork connections
PIM1SOURADNH	STANDALONE SUPPLY AIR PLENUM 2XD200	720	200	300 + 50	RAD-18QPE* / RAD 25-35RPE	2 x 200
PIM1REPRADNH	STANDALONE RETURN AIR PLENUM 2XD200	655	205	200 + 50	RAD-18QPE / RAD 25-35RPE	2 x 200
PIM1REPRADNHF	STANDALONE RETURN AIR PLENUM filter access door 2XD200	655	205	200 + 50	RAD-18QPE / RAD 25-35RPE	2 x 200
PIM1SOURADDH	STANDALONE SUPPLY AIR PLENUM 3XD200	810	225	250 + 50	RAD-50-60RPE / RAD-70PPD	3 x 200
PIM1REPRADDH	STANDALONE RETURN AIR PLENUM 2XD200	820	225	200 + 50	RAD-50-60RPE / RAD-70PPD	2 x 200

* Only available as a multi option

Airzone: enjoy a whole range of benefits with the zoning solution

With a single ducted unit you can control up to 6 rooms separately thanks to motorized plenums that fit directly onto Hitachi units.

	Part numbers for ducted units	Power	Plenum model	Motorized fan blower plenums					Intake plenum
				2 outputs	3 outputs	4 outputs	5 outputs	6 outputs	
Residential use	RAD-RPE	5.0 kW 6.0 kW 7.0 kW	Standard	AZEZ6HITST032 930 x 300 x 454	AZEZ6HITST033 930 x 300 x 454	AZEZ6HITST03M4 1140 x 300 x 454	AZEZ6HITST03M5 1425 x 300 x 454	AZEZ6HITST03M6 1638 x 300 x 454	AZCEZHIPR03M 818 x 223.8 (2xD250)
			Medium	AZEZ6HITDB032 930 x 250 x 454	AZEZ6HITDB033 930 x 250 x 454	AZEZ6HITBS03M4 1140 x 250 x 454	AZEZ6HITBS03M5 1425 x 250 x 454	AZEZ6HITBS03M6 1638 x 250 x 454	
	RAD-RPE	2.5 kW 3.5 kW	Standard	AZEZ6HITST04S2 930 x 300 x 454	AZEZ6HITST04S3 930 x 300 x 454	AZEZ6HITST04S4 1140 x 300 x 454	-	-	AZCEZHIPR04S 647.2 x 208.1 (1x D250)
			Medium	AZEZ6HITBS04S2 930 x 250 x 454	AZEZ6HITBS04S3 930 x 250 x 454	AZEZ6HITBS04S4 1140 x 250 x 454	-	-	

Two versions of plenums are available: standard version (300 mm) and medium version with fresh air function (250 mm). The dimensions of the plenums are shown under the Part number

Connected and intuitive interfaces



Airzone Blueface thermostat

Wired connection / Touchscreen 3.5": Configurable as a general thermostat or by zone. A number of features and settings, ideal for ultimate control of your entire system, for more efficient and responsible heating. End-to-end, intuitive interface. Eco-adapt and standby function for tangible energy saving. Control the temperature, mode, and fan speed. Weekly programming. Access to weather forecasts (with Airzone Cloud webserver login) to anticipate changes in temperature.



Airzone Think thermostat

Wired or wireless connection / 2.7" screen: Configurable as a general thermostat or by zone. Low-energy device that makes it easy to reduce energy costs. Stylish and intuitive interface. Control the temperature, mode, and fan speed. Access to weather forecasts (with Airzone Cloud webserver login) to anticipate changes in temperature.



Airzone Lite thermostat

Wired or wireless connection: In systems with the Blueface thermostat, this solution is perfect for quick access to essential functions. Its modern and fun interface makes it easier to use, with color codes indicating the mode and temperature of the area. Start/ Stop function. Control the setting temperature in increments of 1°C with a scope of ±3°C.



Webserver Airzone Cloud

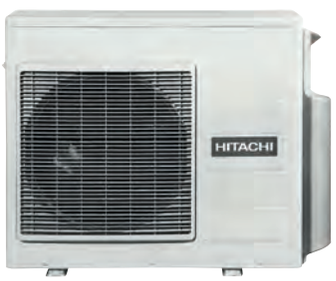
The Airzone Cloud app, compatible on your smartphone, tablet, and PC, offers complete remote control of the installation; anywhere, anytime. You can control multiple servers at once and up to 32 systems on a single webserver. All the features of your thermostats are combined on the cloud: Control the temperature, weekly programming, weather forecasts, login authorization…

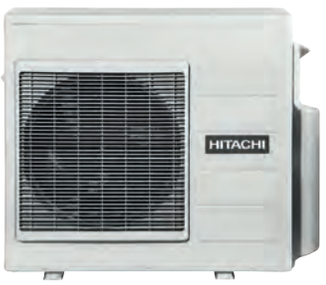
Interface	Airzone Blueface	Airzone Think	Airzone Lite	Webserver Airzone Cloud
Part number	AZCE6BLUEFACEB	AZCE6THINKCB	AZCE6LITECB	AZX6WSCLOUDDINC
Wireless connection	-	AZCE6THINKRB	AZCE6LITERB	AZX6WSCLOUDDINR
10m cable	AZX6CABLEBUS10	AZX6CABLEBUS10	AZX6CABLEBUS10	AZX6CABLEBUS10

Multi-split

Summit outdoor units







Outdoor units	Unit	RAM-40NE2F	RAM-53NE2F	RAM-53NE3F
Number of connectible units (min-max)	-	2 / 2		2 / 3
Nominal cooling capacity (min-max)	kW	4.0 (1.5-4.4)	5.3 (1.5-6.0)	
Nominal heating capacity (min-max)	kW	5.1 (1.5-5.5)	6.3 (1.5-6.6)	
Heating capacity at -7°C[1]	kW	3.5	4.3	
Rated power input Cooling (min-max)	kW	1.026 (0.25-1.27)	1.293 (0.35-1.71)	1.293 (0.35-2.16)
Rated power input Heating (min-max)	kW	1.243 (0.25-1.70)	1.615 (0.35-2.25)	
EER/COP	-	3.90 / 4.10	4.10 / 3.90	
SEER/SCOP (average climate)	-	8.25 / 4.30	8.10 / 4.10	
Seasonal energy class (Cooling/Heating)	-	A++/A+		
Sound pressure in Cooling mode	dB(A)	49	50	
Sound power	dB(A)	60	61	
Airflow (Cooling/Heating)	m^3/h	1620 / 1620	2160 / 2160	
Dimensions (HxWxD)	mm	570 x 750 x 280	750 x 850 x 298	
Net weight	kg	41	51	52
Power supply	-	220 - 230V		
Recommended fuse size	A	16		
Cable width (EN 60 335-1) [2]	mm^2	2 x 2.5 +E		
Indoor/outdoor connection	mm^2	3 x 1.5 +E		
Diameter of pipes (Liq/Gas)	inches	(1/4" x 2 / 3/8" x 2)		**(1/4" x 3 / 3/8" x 3)**
Initial refrigerant charge	kg	0.93	1.59	
Pre-charged for	m	35		
Min. length	m	3		
Max. length / additional charge	m/g/m	35/-		45/20
Max. level difference	m	10	20	
Working range in Cooling	°C	-10°C / 46°C		
Working range in Heating	°C	-15°C / 24°C		
Refrigerant	-	R32		
Compressor	-	Rotary		

[1] Data includes defrosting. To find out the data for your project, refer to our technical catalogues.
[2] Data shown is for indication purpose only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.

Multi-split

Indoor units

Summit wall unit



Compatible with the airCloud remote controller

In the app, you can turn the system on and off, turn the temperature up or down and program the system from anywhere in the world. All you need is a mobile phone, an Internet connection and Wi-Fi equipment (optional) to connect to the equipment.

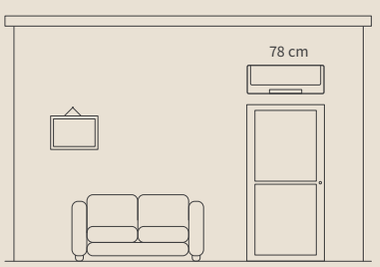
Maximum use of space

Thanks to its small size, you can install it discreetly. With a width of 780 mm, it will fit anywhere, including above a doorway. (Fig. 1)

Silent operation

With a low noise level of just 19dB*, you can enjoy a comfortable environment without noticing that the indoor unit is even running.

Fig. 1



Indoor units	Unit	RAK-15QEF*	RAK-18REF	RAK-25REF	RAK-35REF	RAK-50REF
Nominal cooling capacity (min - max)	kW	1.50 (0.9 - 2.00)	1.80 (0.90 - 2.50)	2.50 (0.90 - 3.10)	3.50 (0.90 - 4.00)	5.00 (1.90 - 5.20)
Nominal heating capacity (min - max)	kW	2.00 (1.00 - 2.50)	2.50 (0.90 - 3.20)	3.40 (0.90 - 4.40)	4.20 (0.90 - 5.00)	6.00 (2.2 - 7.30)
Sound pressure in Cooling mode (EL / L / M / H) [1]	dB(A)	21 / 24 / 33 / 37		22 / 24 / 33 /40	25 / 26 / 36 / 43	28 / 30 / 40 /46
Sound pressure in Heating mode (EL / L / M / H) [1]	dB(A)	19 / 22 / 33 / 38		20 / 23 / 34 / 41	26 / 27 / 36 / 44	25 / 30 / 39 /47
Sound power	dB(A)	52		54	57	60
Airflow in Cooling mode (EL / L / M / H)	m^3/h	312 / 350 / 400 / 440		333 / 370 / 430 / 510	333 / 400 / 485 / 600	333 / 450 / 600 / 700
Dehumidification	l/h	1.2		1.4	1.6	2.0
Dimensions (H x W x D)	mm	280 x 780 x 215				
Diameter of pipes (Liq / Gas)	inches	1/4 - 3/8				1/4 - 1/2
Net weight	kg	7.5				8
Power supply	V	220 - 230V				
Cable width (EN 60 335-1) [2]	mm^2	3 x 1.5 + E				3 x 2.5 + E
Remote control	-	Infrared RAR-7PE1 (included)				

[1] Sound pressure measurements were made 1 meter from the unit without obstructions (see the technical catalogue). * Only available as a multi option
[2] Data shown is for indication purpose only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.

Controls and compatible accessories (see page 161)



Infrared remote control

Included

RAR-7PE1



Wired standard remote control

SPX-RCDB1



Wired programmable remote control

SPX-WKT4



H-Link box

PSC-6RAD

Other*:

- Control box for multi-indoor units SPX-DST1 + SPX-WDST8M
- airCloud Home for interface SPX-WFG02
- Hi-Box AHP-SMB-01
- Hi Kumo interface for Hi-Box SPX-TAG01
- Single dry contact kit SPX-WDC3
- Single fault report kit SPX-WDC7 + HA-S100TSA

Indoor unit combinations

Standard multi-split

RAM - 33NP2E		COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
1 unit*	15	1.50	1.50 (1.00 - 2.20)	380 (250 - 480)	3.95	2.00	2.00 (1.10 - 3.20)	530 (250 - 970)	3.77
	18	1.80	1.80 (1.00 - 2.50)	455 (250 - 750)	3.96	2.50	2.50 (1.10 - 3.20)	690 (250 - 970)	3.62
	25	2.50	2.50 (1.00 - 3.10)	650 (250 - 880)	3.85	3.50	3.50 (1.10 - 4.40)	990 (250 - 1120)	3.54
	35	3.50	3.50 (1.00 - 3.80)	780 (250 - 1300)	4.49	4.00	4.60 (1.10 - 4.60)	1200 (250 - 1300)	3.33
2 units	15 + 15	1.50 + 1.50	3.00 (1.50 - 2.80)	730 (250 - 780)	4.11	2.00 + 2.00	4.00 (1.50 - 4.60)	890 (250 - 950)	4.49
	15 + 18	1.50 + 1.80	3.30 (1.50 - 3.50)	730 (250 - 1050)	4.52	1.78 + 2.22	4.00 (1.50 - 4.60)	900 (250 - 1020)	4.44
	15 + 25	1.24 + 2.06	3.30 (1.50 - 3.80)	950 (250 - 1050)	3.47	1.45 + 2.55	4.00 (1.50 - 4.60)	1080 (250 - 1500)	3.70
	15 + 35	0.99 + 2.31	3.30 (1.50 - 4.20)	1050 (250 - 1050)	3.14	1.18 + 2.82	4.00 (1.50 - 4.60)	1230 (250 - 1500)	3.25
	18 + 18	1.65 + 1.65	3.30 (1.50 - 3.80)	1050 (250 - 1050)	3.14	2.00 + 2.00	4.00 (1.50 - 4.60)	1250 (250 - 1500)	3.20
	18 + 25	1.38 + 1.92	3.30 (1.50 - 4.20)	1050 (250 - 1050)	3.14	1.67 + 2.33	4.00 (1.50 - 4.60)	1250 (250 - 1500)	3.20
	18 + 35	1.12 + 2.18	3.30 (1.50 - 4.20)	1050 (250 - 1050)	3.14	1.37 + 2.63	4.00 (1.50 - 4.60)	1250 (250 - 1500)	3.20
	25 + 25	1.65 + 1.65	3.30 (1.50 - 4.20)	1050 (250 - 1050)	3.14	2.00 + 2.00	4.00 (1.50 - 4.60)	1250 (250 - 1500)	3.20

* Note: this refers to the performance with only one unit in operation. However, at least 2 units must be connected to the outside unit.

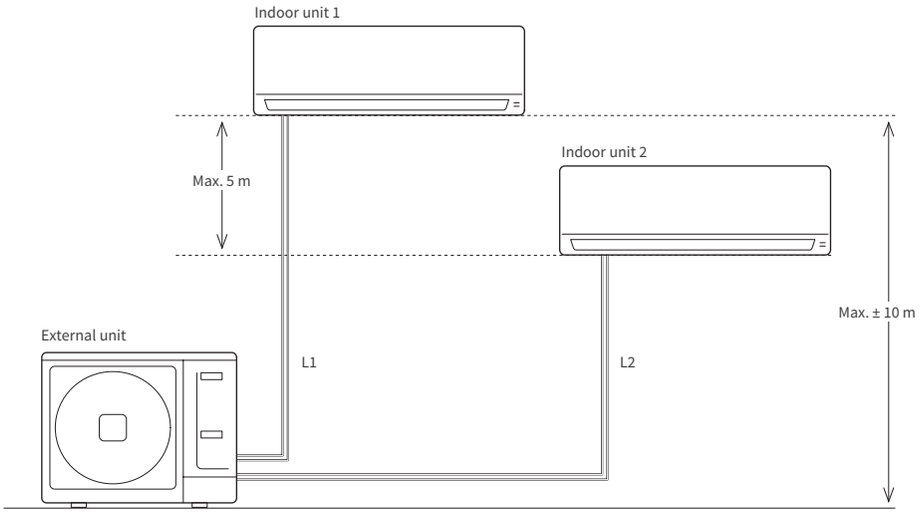
Pipe lengths

RAM-33NP2E

L1 + L2 < 35 m
L1 < 15 m ; L2 < 15 m

The max. level difference between 2 indoor units is 5m.

Always connect the most powerful indoor unit to the lowest connector. No additional charge necessary.



RAM - 40NP2E		COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
1 unit*	15	1.50	1.50 (1.00 - 2.20)	380 (200 - 480)	3.95	2.00	2.00 (1.10 - 3.20)	530 (250 - 970)	3.77 A
	18	1.80	1.80 (1.00 - 2.50)	455 (200 - 750)	3.96	2.50	2.50 (1.10 - 3.20)	690 (250 - 970)	3.62 A
	25	2.50	2.50 (1.00 - 3.10)	650 (200 - 880)	3.85	3.50	3.50 (1.10 - 4.40)	990 (250 - 1120)	3.54 B
	35	3.50	3.50 (1.00 - 4.00)	780 (200 - 1150)	4.49	4.80	4.80 (1.10 - 5.00)	1200 (250 - 1300)	4.00 A
2 units	15 + 15	1.50 + 1.50	3.00 (1.50 - 2.80)	700 (200 - 780)	4.29	2.00 + 2.00	4.00 (1.50 - 4.60)	890 (250 - 950)	4.49 A
	15 + 18	1.50 + 1.80	3.30 (1.50 - 3.50)	730 (200 - 930)	4.52	2.00 + 2.50	4.50 (1.50 - 5.00)	940 (250 - 1020)	4.79 A
	15 + 25	1.50 + 2.50	4.00 (1.50 - 4.00)	950 (200 - 1150)	4.21	1.89 + 3.31	5.20 (1.50 - 5.50)	1080 (250 - 1500)	4.81 A
	15 + 35	1.20 + 2.80	4.00 (1.50 - 4.20)	1100 (200 - 1150)	3.64	1.53 + 3.67	5.20 (1.50 - 5.50)	1230 (250 - 1500)	4.23 A
	18 + 18	1.80 + 1.80	3.60 (1.50 - 4.00)	1050 (200 - 1050)	3.43	2.50 + 2.50	5.00 (1.50 - 5.00)	1250 (250 - 1500)	4.00 A
	18 + 25	1.67 + 2.33	4.00 (1.50 - 4.20)	1090 (200 - 1150)	3.67	2.17 + 3.03	5.20 (1.50 - 5.50)	1250 (250 - 1500)	4.16 A
	18 + 35	1.36 + 2.64	4.00 (1.50 - 4.20)	1130 (200 - 1150)	3.54	1.78 + 3.42	5.20 (1.50 - 5.50)	1250 (250 - 1500)	4.16 A
	25 + 25	2.00 + 2.00	4.00 (1.50 - 4.20)	1150 (200 - 1150)	3.48	2.60 + 2.60	5.20 (1.50 - 5.50)	1250 (250 - 1500)	4.16 A

* Note: this refers to the performance with only one unit in operation. However, at least 2 units must be connected to the outside unit.

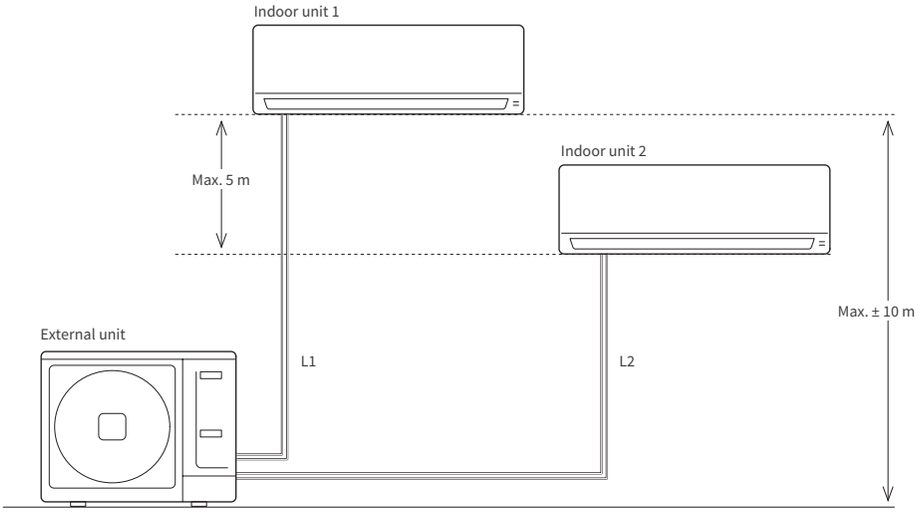
Pipe lengths

RAM-40NP2E

L1 + L2 < 35 m
L1 < 25 m ; L2 < 25 m

The max. level difference between 2 indoor units is 5m.

Always connect the most powerful indoor unit to the lowest connector. No additional charge necessary.



Indoor unit combinations

Standard multi-split

RAM - 53NP2E		COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
1 unit*	15	1.50	1.50 (1.00 - 2.20)	430 (350 - 480)	3.49	2.00	2.00 (1.10 - 2.20)	610 (350 - 650)	3.28
	18	1.80	1.80 (1.00 - 2.00)	495 (350 - 750)	3.64	2.50	2.50 (1.10 - 3.20)	690 (350 - 1050)	3.62
	25	2.50	2.50 (1.00 - 2.80)	700 (350 - 980)	3.57	3.90	3.90 (1.10 - 4.70)	1060 (350 - 1380)	3.68
	35	3.50	3.50 (1.00 - 3.90)	1030 (350 - 1280)	3.40	4.80	4.80 (1.10 - 5.80)	1320 (350 - 1870)	3.64
	42	4.20	4.20 (1.00 - 5.50)	1500 (350 - 1660)	2.80	6.50	6.50 (1.10 - 7.20)	1680 (350 - 2010)	3.87
	50	5.00	5.00 (1.00 - 5.50)	1510 (350 - 1660)	3.31	6.80	6.50 (1.10 - 7.20)	1680 (350 - 2010)	3.87
	60	6.00	5.30 (1.00 - 5.50)	1510 (350 - 1660)	3.51	7.00	6.50 (1.10 - 7.20)	1680 (350 - 2010)	3.87
2 units	15 + 15	1.50 + 1.50	3.00 (1.50 - 3.90)	920 (350 - 1000)	3.26	2.00 + 2.00	4.00 (1.50 - 4.70)	1060 (350 - 1380)	3.77
	15 + 18	1.50 + 1.80	3.30 (1.50 - 3.90)	1020 (350 - 1300)	3.24	2.00 + 2.50	4.50 (1.50 - 5.20)	1250 (350 - 1870)	3.6
	15 + 25	1.50 + 2.50	4.00 (1.50 - 4.50)	1180 (350 - 1250)	3.39	2.00 + 3.90	5.90 (1.50 - 6.50)	1550 (350 - 2010)	3.81
	15 + 35	1.50 + 3.50	5.00 (1.50 - 5.90)	1480 (350 - 1660)	3.38	2.00 + 4.80	6.80 (1.50 - 7.20)	1590 (350 - 2010)	4.28
	15 + 42(1)	1.39 + 3.91	5.30 (1.50 - 5.90)	1550 (350 - 1660)	3.42	1.60 + 5.20	6.80 (1.50 - 7.20)	1820 (350 - 2010)	3.74
	15 + 50(1)	1.22 + 4.08	5.30 (1.50 - 5.90)	1660 (350 - 1660)	3.19	1.60 + 5.20	6.80 (1.50 - 7.20)	1820 (350 - 2010)	3.74
	15 + 60(1)	1.06 + 4.24	5.30 (1.50 - 5.90)	1660 (350 - 1660)	3.19	1.60 + 5.20	6.80 (1.50 - 7.20)	1820 (350 - 2010)	3.74
	18 + 18	1.80 + 1.80	3.60 (1.50 - 4.00)	1080 (350 - 1300)	3.33	2.50 + 2.50	5.00 (1.50 - 5.20)	1290 (350 - 1550)	3.88
	18 + 25	1.80 + 2.50	4.30 (1.50 - 4.60)	1220 (350 - 1450)	3.52	2.50 + 3.90	6.40 (1.50 - 6.30)	1530 (350 - 1920)	4.18
	18 + 35	1.80 + 3.50	5.30 (1.50 - 5.60)	1260 (350 - 1660)	4.21	2.31 + 4.49	6.80 (1.50 - 7.20)	1610 (350 - 2010)	4.22
	18 + 42(1)	1.59 + 3.71	5.30 (1.50 - 5.90)	1550 (350 - 1660)	3.42	1.80 + 5.00	6.80 (1.50 - 7.20)	1820 (350 - 2010)	3.74
	18 + 50(1)	1.40 + 3.90	5.30 (1.50 - 5.90)	1550 (350 - 1660)	3.42	1.80 + 5.00	6.80 (1.50 - 7.20)	1820 (350 - 2010)	3.74
	18 + 60(1)	1.22 + 4.08	5.30 (1.50 - 5.90)	1660 (350 - 1660)	3.19	1.80 + 5.00	6.80 (1.50 - 7.20)	1820 (350 - 2010)	3.74
	25 + 25	2.50 + 2.50	5.00 (1.50 - 5.60)	1470 (350 - 1660)	3.40	3.40 + 3.40	6.80 (1.50 - 7.20)	1780 (350 - 2010)	3.82
	25 + 35	2.21 + 3.09	5.30 (1.50 - 5.70)	1550 (350 - 1660)	3.42	2.83 + 3.97	6.80 (1.50 - 7.20)	1820 (350 - 2010)	3.74
	25 + 42(1)	1.98 + 3.32	5.30 (1.50 - 5.90)	1550 (350 - 1660)	3.42	2.27 + 4.53	6.80 (1.50 - 7.20)	1820 (350 - 2010)	3.74
	25 + 50(1)	1.77 + 3.53	5.30 (1.50 - 5.90)	1660 (350 - 1660)	3.19	2.27 + 4.53	6.80 (1.50 - 7.20)	1820 (350 - 2010)	3.74
	25 + 60(1)	1.56 + 3.74	5.30 (1.50 - 5.90)	1660 (350 - 1660)	3.19	2.27 + 4.53	6.80 (1.50 - 7.20)	1820 (350 - 2010)	3.74
	35 + 35	2.65 + 2.65	5.30 (1.50 - 5.90)	1660 (350 - 1660)	3.19	3.40 + 3.40	6.80 (1.50 - 7.20)	1820 (350 - 2010)	3.74
	35 + 42(1)	2.41 + 2.89	5.30 (1.50 - 6.60)	1660 (350 - 1660)	3.19	2.80 + 4.00	6.80 (1.50 - 7.20)	1820 (350 - 2010)	3.74
	35 + 50(1)	2.18 + 3.12	5.30 (1.50 - 6.60)	1660 (350 - 1660)	3.19	2.80 + 4.00	6.80 (1.50 - 7.20)	1820 (350 - 2010)	3.74
	42 + 42(1)	2.65 + 2.65	5.30 (1.50 - 6.60)	1660 (350 - 1660)	3.19	2.80 + 4.00	6.80 (1.50 - 7.20)	1820 (350 - 2010)	3.74

* Note: this refers to the performance with only one unit in operation. However, at least 2 units must be connected to the outside unit.
(1) For each output corresponding to units 42, 50 and 60, a 3/8-to-1/2 pipe adapter is required.

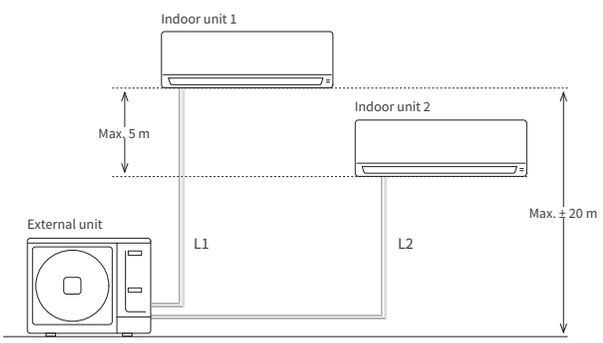
Pipe lengths

RAM-53NP2E

L1 + L2 < 35 m
L1 < 25 m ; L2 < 25 m

The max. level difference between 2 indoor units is 5m.

Always connect the most powerful indoor unit to the lowest connector. No additional charge necessary.



RAM - 53NP3E		COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
1 unit*	15	1.50	1.50 (1.00 - 1.60)	430 (200 - 480)	3.49	2.00	2.00 (1.10 - 2.20)	560 (320 - 850)	3.57
	18	1.80	1.80 (1.50 - 2.00)	495 (280 - 500)	3.64	2.50	2.50 (1.80 - 3.50)	720 (320 - 1130)	3.47
	25	2.50	2.50 (1.50 - 2.80)	700 (280 - 720)	3.57	3.40	3.40 (1.80 - 4.70)	980 (320 - 1480)	3.47
	35	3.50	3.50 (1.50 - 3.90)	1030 (280 - 1130)	3.40	4.30	4.30 (1.80 - 5.80)	1150 (320 - 1950)	3.74
	42	4.20	4.20 (1.50 - 5.60)	1450 (280 - 1800)	2.90	6.50	6.50 (1.80 - 7.20)	1800 (320 - 2010)	3.61
	50	5.00	5.00 (1.50 - 5.60)	1480 (280 - 1800)	3.38	6.50	6.50 (1.80 - 7.20)	1880 (320 - 2530)	3.46
	60	6.00	5.30 (1.50 - 6.60)	1481 (280 - 1930)	3.58	7.30	6.80 (1.80 - 7.80)	1880 (320 - 2530)	3.62
2 units	15 + 15	1.50 + 1.50	3.00 (1.50 - 3.50)	870 (380 - 980)	3.45	2.00 + 2.00	4.00 (2.20 - 4.70)	1080 (200 - 1100)	3.70
	15 + 18	1.50 + 1.80	3.30 (1.50 - 3.50)	950 (380 - 1000)	3.47	2.00 + 2.50	4.50 (2.20 - 5.20)	1200 (200 - 1300)	3.75
	15 + 25	1.50 + 2.50	4.00 (1.50 - 4.00)	1300 (380 - 1300)	3.08	2.00 + 3.40	5.40 (2.20 - 6.40)	1450 (200 - 1780)	3.72
	15 + 35	1.50 + 3.50	5.00 (1.50 - 5.20)	1450 (380 - 1450)	3.45	2.00 + 4.30	6.30 (2.20 - 7.20)	1660 (200 - 2010)	3.80
	15 + 42(1)	1.39 + 3.91	5.30 (1.50 - 5.90)	1580 (380 - 2380)	3.35	1.60 + 5.20	6.80 (2.20 - 7.20)	1680 (320 - 2010)	4.05
	15 + 50(1)	1.22 + 4.08	5.30 (1.50 - 6.30)	1700 (380 - 2380)	3.12	1.60 + 5.20	6.80 (2.20 - 7.20)	1770 (320 - 2010)	3.84
	15 + 60(1)	1.06 + 4.24	5.30 (1.50 - 6.30)	1700 (380 - 2380)	3.12	1.51 + 5.29	6.80 (2.20 - 7.20)	1950 (320 - 2010)	3.49
	18 + 18	1.80 + 1.80	3.60 (1.50 - 5.90)	1020 (380 - 1020)	3.53	2.50 + 2.50	5.00 (2.20 - 6.40)	1380 (320 - 2010)	3.62
	18 + 25	1.80 + 2.50	4.30 (1.50 - 5.90)	1200 (380 - 1360)	3.58	2.50 + 3.40	5.90 (2.20 - 7.20)	1580 (320 - 2010)	3.73
	18 + 35	1.80 + 3.50	5.30 (1.50 - 5.90)	1290 (380 - 1950)	4.11	2.50 + 4.30	6.80 (2.20 - 7.20)	1650 (320 - 2010)	4.12
	18 + 42(1)	1.80 + 5.00	5.30 (1.50 - 5.90)	1620 (380 - 2820)	3.27	1.89 + 4.91	6.80 (2.20 - 9.50)	1700 (430 - 2600)	4.00
	18 + 50(1)	1.80 + 5.00	5.30 (1.50 - 5.90)	1800 (380 - 2820)	2.94	1.89 + 4.91	6.80 (2.20 - 9.50)	2100 (430 - 2600)	3.24
	18 + 60(1)	1.80 + 6.00	5.30 (1.50 - 5.90)	1800 (380 - 2820)	2.94	1.79 + 5.01	6.80 (2.20 - 9.50)	2100 (430 - 2600)	3.24
	25 + 25	2.50 + 2.50	5.00 (2.00 - 5.50)	1480 (380 - 1720)	3.38	3.40 + 3.40	6.80 (2.20 - 9.50)	1770 (430 - 2010)	3.84
	25 + 35	2.50 + 3.50	5.30 (2.00 - 6.60)	1640 (380 - 2380)	3.23	3.00 + 3.80	6.80 (2.20 - 9.50)	1880 (430 - 2010)	3.62
	25 + 42(1)	1.98 + 3.32	5.30 (2.00 - 7.20)	1640 (380 - 2820)	3.23	2.34 + 4.46	6.80 (2.20 - 9.50)	2000 (430 - 2600)	3.40
	25 + 50(1)	1.77 + 3.53	5.30 (2.00 - 7.20)	1610 (380 - 2820)	3.29	2.34 + 4.46	6.80 (2.20 - 9.50)	2100 (430 - 2600)	3.24
	25 + 60(1)	1.56 + 3.74	5.30 (2.00 - 7.50)	1800 (380 - 2820)	2.94	2.22 + 4.58	6.80 (2.20 - 9.50)	1880 (430 - 2600)	3.62
	35 + 35	2.65 + 2.65	5.30 (2.00 - 7.50)	1800 (380 - 2820)	2.94	3.40 + 3.40	6.80 (2.20 - 9.50)	1880 (430 - 3120)	3.62
	35 + 42(1)	2.41 + 2.89	5.30 (2.00 - 7.50)	1800 (380 - 2820)	2.94	2.71 + 4.09	6.80 (2.20 - 9.50)	1880 (430 - 2600)	3.62
	35 + 50(1)	2.18 + 3.12	5.30 (2.00 - 7.50)	1800 (380 - 2820)	2.94	2.71 + 4.09	6.80 (2.20 - 9.50)	1880 (430 - 2600)	3.62
	35 + 60(1)	1.95 + 3.35	5.30 (2.00 - 7.50)	1800 (380 - 2820)	2.94	2.59 + 4.21	6.80 (2.20 - 9.50)	1880 (430 - 2600)	3.62
	42 + 42(1)	2.65 + 2.65	5.30 (2.00 - 7.50)	1800 (380 - 2820)	2.94	3.40 + 3.40	6.80 (2.20 - 9.50)	1880 (430 - 2600)	3.62
	42 + 50(1)	2.42 + 2.88	5.30 (2.00 - 7.50)	1800 (380 - 2820)	2.94	3.40 + 3.40	6.80 (2.20 - 9.50)	1880 (430 - 2600)	3.62
	42 + 60(1)	2.18 + 3.12	5.30 (2.00 - 7.50)	1800 (380 - 2820)	2.94	3.27 + 3.53	6.80 (2.20 - 9.50)	1880 (430 - 2600)	3.62
	50 + 50(1)	2.65 + 2.65	5.30 (2.00 - 7.50)	1800 (380 - 2820)	2.94	3.40 + 3.40	6.80 (2.20 - 9.50)	1880 (430 - 2600)	3.62

* Note: this refers to the performance with only one unit in operation. However, at least 2 units must be connected to the outside unit.
(1) For each output corresponding to units 42, 50 and 60, a 3/8-to-1/2 pipe adapter is required.

Pipe lengths

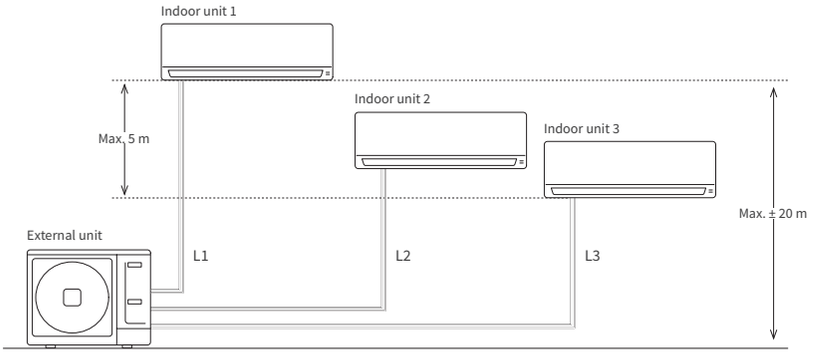
RAM-53NP3E

L1 + L2 + L3 < 60 m
L1 < 25 m ; L2 < 25 m ; L3 < 25 m

The max. level difference between 2 indoor units is 5m.

Pre-charged 35 m.
Beyond 35 m, allow an additional 20g/m.

Always connect the most powerful indoor unit to the lowest connector.



Indoor unit combinations

Standard multi-split

RAM - 53NP3E		COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
3 units	15 + 15 + 15	1.50 + 1.50 + 1.50	4.50 (2.20 - 5.00)	1400 (420 - 1680)	3.21	2.00 + 2.00 + 2.00	6.00 (2.40 - 6.50)	1650 (430 - 1800)	3.64
	15 + 15 + 18	1.50 + 1.50 + 1.80	4.80 (2.20 - 5.50)	1480 (240 - 1880)	3.24	2.00 + 2.00 + 2.50	6.50 (2.40 - 7.00)	1750 (430 - 2100)	3.71
	15 + 15 + 25	1.45 + 1.45 + 2.41	5.30 (2.20 - 6.00)	1680 (420 - 2280)	3.15	1.84 + 1.84 + 3.12	6.80 (2.20 - 9.30)	1850 (430 - 2200)	3.68
	15 + 15 + 35	1.22 + 1.22 + 2.85	5.30 (2.20 - 7.00)	1800 (420 - 2480)	2.94	1.64 + 1.64 + 3.52	6.80 (2.40 - 9.50)	1850 (430 - 2500)	3.68
	15 + 15 + 42[1]	1.10 + 1.10 + 3.09	5.30 (2.20 - 7.50)	1800 (420 - 2890)	2.94	1.30 + 1.30 + 4.21	6.80 (2.40 - 9.50)	1850 (430 - 2600)	3.68
	15 + 15 + 50[1]	0.99 + 0.99 + 3.31	5.30 (2.20 - 7.50)	1800 (420 - 2890)	2.94	1.30 + 1.30 + 4.21	6.80 (2.40 - 9.50)	2000 (430 - 2600)	3.40
	15 + 15 + 60[1]	0.88 + 0.88 + 3.53	5.30 (2.20 - 7.50)	1800 (420 - 2890)	2.94	1.24 + 1.24 + 4.33	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	15 + 18 + 18	1.50 + 1.80 + 1.80	5.10 (2.20 - 5.60)	1500 (420 - 2280)	3.40	1.94 + 2.43 + 2.43	6.80 (2.20 - 9.30)	1850 (430 - 2400)	3.68
	15 + 18 + 25	1.37 + 1.64 + 2.28	5.30 (2.20 - 6.30)	1590 (420 - 2480)	3.33	1.72 + 2.15 + 2.93	6.80 (2.40 - 9.50)	1850 (430 - 2600)	3.68
	15 + 18 + 35	1.17 + 1.40 + 2.73	5.30 (2.20 - 7.50)	1680 (420 - 2480)	3.15	1.55 + 1.93 + 3.32	6.80 (2.40 - 9.50)	1850 (430 - 2600)	3.68
	15 + 18 + 42[1]	1.06 + 1.27 + 2.97	5.30 (2.20 - 7.50)	1800 (420 - 2890)	2.94	1.24 + 1.55 + 4.02	6.80 (2.40 - 9.50)	1850 (430 - 2600)	3.68
	15 + 18 + 50[1]	0.96 + 1.15 + 3.19	5.30 (2.20 - 7.50)	1800 (420 - 2890)	2.94	1.24 + 1.55 + 4.02	6.80 (2.40 - 9.50)	2050 (430 - 2600)	3.32
	15 + 25 + 25	1.22 + 2.04 + 2.04	5.30 (1.50 - 7.00)	1710 (420 - 2480)	3.10	1.55 + 2.63 + 2.63	6.80 (2.40 - 9.50)	1850 (430 - 2600)	3.68
	15 + 25 + 35	1.06 + 1.77 + 2.47	5.30 (2.20 - 7.80)	1800 (420 - 2890)	2.94	1.40 + 2.38 + 3.01	6.80 (2.40 - 9.50)	1850 (430 - 2600)	3.68
	15 + 25 + 42[1]	0.97 + 1.62 + 2.71	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.14 + 1.94 + 3.71	6.80 (2.40 - 9.50)	1930 (430 - 2600)	3.52
	15 + 25 + 50[1]	0.88 + 1.47 + 2.94	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.14 + 1.94 + 3.71	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	15 + 35 + 35	0.94 + 2.18 + 2.18	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.28 + 2.76 + 2.76	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	15 + 35 + 42[1]	0.86 + 2.02 + 2.42	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.06 + 2.28 + 3.45	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	15 + 35 + 50[1]	0.80 + 1.86 + 2.65	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.06 + 2.28 + 3.45	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	15 + 42 + 42[1]	0.80 + 2.25 + 2.25	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	0.83 + 2.99 + 2.99	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	15 + 42 + 50[1]	0.74 + 2.08 + 2.48	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	0.83 + 2.99 + 2.99	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	18 + 18 + 18	1.77 + 1.77 + 1.77	5.30 (2.20 - 5.90)	1500 (420 - 2190)	3.53	2.27 + 2.27 + 2.27	6.80 (2.40 - 9.50)	1860 (430 - 2600)	3.66
	18 + 18 + 25	1.56 + 1.56 + 2.17	5.30 (2.20 - 6.70)	1610 (420 - 2480)	3.29	2.02 + 2.02 + 2.75	6.80 (2.40 - 9.50)	1740 (430 - 2600)	3.91
	18 + 18 + 35	1.34 + 1.34 + 2.61	5.30 (2.20 - 7.80)	1800 (420 - 2890)	2.94	1.83 + 1.83 + 3.14	6.80 (2.40 - 9.50)	1820 (430 - 2600)	3.74
	18 + 18 + 42[1]	1.22 + 1.22 + 2.85	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.48 + 1.48 + 3.84	6.80 (2.40 - 9.50)	1950 (430 - 2600)	3.49
	18 + 18 + 50[1]	1.11 + 1.11 + 3.08	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.48 + 1.48 + 3.84	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	18 + 25 + 25	1.40 + 1.95 + 1.95	5.30 (2.20 - 7.50)	1730 (420 - 2780)	3.06	1.83 + 2.49 + 2.49	6.80 (2.40 - 9.50)	1760 (430 - 2600)	3.86
	18 + 25 + 35	1.22 + 1.70 + 2.38	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.67 + 2.27 + 2.87	6.80 (2.40 - 9.50)	1820 (430 - 2600)	3.74
	18 + 25 + 42[1]	1.12 + 1.56 + 2.62	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.37 + 1.86 + 3.56	6.80 (2.40 - 9.50)	1970 (430 - 2600)	3.45
	18 + 25 + 50[1]	1.03 + 1.42 + 2.85	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.37 + 1.86 + 3.56	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	18 + 35 + 35	1.08 + 2.11 + 2.11	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.53 + 2.63 + 2.63	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	18 + 35 + 42[1]	1.00 + 1.95 + 2.34	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.28 + 2.20 + 3.32	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	18 + 35 + 50[1]	0.93 + 1.80 + 2.57	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.28 + 2.20 + 3.32	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	25 + 25 + 25	1.77 + 1.77 + 1.77	5.30 (2.20 - 7.80)	1800 (420 - 2890)	2.94	2.27 + 2.27 + 2.27	6.80 (2.40 - 9.50)	1870 (430 - 2600)	3.64
	25 + 25 + 35	1.56 + 1.56 + 2.18	5.30 (2.20 - 8.00)	1800 (420 - 2960)	2.94	2.08 + 2.08 + 2.63	6.80 (2.40 - 9.50)	1930 (430 - 2600)	3.52
	25 + 25 + 42[1]	1.44 + 1.44 + 2.42	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.74 + 1.74 + 3.32	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	25 + 25 + 50[1]	1.33 + 1.33 + 2.65	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.74 + 1.74 + 3.32	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	25 + 35 + 35	1.39 + 1.95 + 1.95	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.93 + 2.44 + 2.44	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	25 + 35 + 42[1]	1.30 + 1.82 + 2.18	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.63 + 2.06 + 3.11	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	25 + 35 + 50[1]	1.20 + 1.69 + 2.41	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.63 + 2.06 + 3.11	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	25 + 42 + 42[1]	1.22 + 2.04 + 2.04	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.63 + 2.06 + 3.11	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	35 + 35 + 35	1.77 + 1.77 + 1.77	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	2.27 + 2.27 + 2.27	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24

[1] For each output corresponding to units 42, 50, and 60, a 3/8-to-1/2 pipe adapter is required.

RAM - 68NP3E		COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
1 unit*	15	1.50	1.50 (1.00 - 1.60)	430 (200 - 480)	3.49	2.00	2.00 (1.10 - 2.20)	560 (320 - 850)	3.57
	18	1.80	1.80 (1.50 - 2.00)	495 (280 - 500)	3.64	2.50	2.50 (1.80 - 3.50)	720 (320 - 1130)	3.47
	25	2.50	2.50 (1.50 - 2.80)	700 (280 - 720)	3.57	3.40	3.40 (1.80 - 4.70)	980 (320 - 1480)	3.47
	35	3.50	3.50 (1.50 - 3.90)	1030 (280 - 1130)	3.40	4.30	4.30 (1.80 - 5.80)	1150 (320 - 1950)	3.74
	42	4.20	4.20 (1.50 - 5.60)	1450 (280 - 1800)	2.90	6.50	6.50 (1.80 - 7.20)	2030 (320 - 2530)	3.20
	50	5.00	5.00 (1.50 - 5.60)	1480 (280 - 1800)	3.38	6.50	6.50 (1.80 - 7.20)	2030 (320 - 2530)	3.20
	60	6.00	6.00 (1.50 - 6.60)	1480 (280 - 2290)	4.05	7.30	7.30 (1.80 - 8.50)	2590 (320 - 2860)	2.82
2 units	15 + 15	1.50 + 1.50	3.00 (1.50 - 2.80)	870 (380 - 980)	3.45	2.00 + 2.00	4.00 (2.20 - 4.70)	1080 (200 - 1100)	3.70
	15 + 18	1.50 + 1.80	3.30 (1.50 - 3.50)	950 (380 - 1000)	3.47	2.00 + 2.50	4.50 (2.20 - 5.20)	1200 (200 - 1300)	3.75
	15 + 25	1.50 + 2.50	4.00 (1.50 - 4.00)	1300 (380 - 1300)	3.08	2.00 + 3.40	5.40 (2.20 - 6.40)	1450 (200 - 1780)	3.72
	15 + 35	1.50 + 3.50	5.00 (1.50 - 5.20)	1450 (380 - 1450)	3.45	2.00 + 4.30	6.30 (2.20 - 7.20)	1660 (200 - 2010)	3.80
	15 + 42(1)	1.50 + 4.20	5.70 (1.50 - 5.90)	1700 (380 - 2380)	3.35	2.00 + 6.50	8.50 (2.20 - 7.20)	2200 (390 - 3120)	3.86
	15 + 50(1)	1.50 + 5.00	6.50 (1.50 - 5.90)	1830 (380 - 2380)	3.55	2.00 + 6.50	8.50 (2.20 - 7.20)	2200 (390 - 3120)	3.86
	15 + 60(1)	1.36 + 5.44	6.80 (1.50 - 6.50)	2120 (380 - 2580)	3.58	1.83 + 6.67	8.50 (2.20 - 8.60)	2200 (390 - 3120)	3.86
	18 + 18	1.80 + 1.80	3.60 (2.00 - 4.00)	1020 (380 - 1020)	3.53	2.50 + 2.50	5.00 (2.20 - 6.40)	1380 (390 - 2750)	3.62
	18 + 25	1.80 + 2.50	4.30 (2.00 - 4.70)	1380 (380 - 1360)	3.12	2.50 + 3.40	5.90 (2.20 - 7.20)	1580 (390 - 3000)	3.73
	18 + 35	1.80 + 3.50	5.30 (2.00 - 5.80)	1750 (380 - 1950)	3.03	2.50 + 4.30	6.80 (2.20 - 7.20)	1610 (390 - 3120)	4,22
	18 + 42(1)	1.80 + 5.00	6.00 (2.00 - 7.10)	1830 (380 - 2820)	3.28	2.36 + 6.14	8.50 (2.20 - 9.50)	2120 (390 - 3120)	4.01
	18 + 50(1)	1.80 + 5.00	6.80 (2.00 - 7.10)	1830 (380 - 2820)	3.72	2.36 + 6.14	8.50 (2.20 - 9.50)	2120 (390 - 3120)	4.01
	18 + 60(1)	1.70 + 5.40	6.80 (2.00 - 7.50)	1900 (380 - 2980)	3.58	2.17 + 6.33	8.50 (2.20 - 9.50)	2200 (390 - 3120)	3.86
	25 + 25	2.50 + 2.50	5.00 (2.00 - 5.50)	1480 (380 - 1720)	3.38	3.40 + 3.40	6.80 (2.20 - 9.50)	2000 (390 - 3120)	3.40
	25 + 35	2.50 + 3.50	6.00 (2.00 - 6.60)	1850 (380 - 2380)	3.24	3.40 + 4.30	7.70 (2.20 - 9.50)	2120 (390 - 3120)	3.63
	25 + 42(1)	2.50 + 4.20	6.70 (2.00 - 7.50)	2060 (380 - 2980)	3.25	2.92 + 5.58	8.50 (2.20 - 9.50)	2350 (390 - 3120)	3.62
	25 + 50(1)	2.27 + 4.53	6.80 (2.00 - 7.50)	2060 (380 - 2980)	3.30	2.92 + 5.58	8.50 (2.20 - 9.50)	2350 (390 - 3120)	3.62
	25 + 60(1)	2.10 + 5.00	6.80 (2.00 - 7.50)	2060 (380 - 2980)	3.30	2.70 + 5.80	8.50 (2.20 - 9.50)	2450 (390 - 3120)	3.47
	35 + 35	3.40 + 3.40	6.80 (2.00 - 7.40)	2060 (380 - 2940)	3.30	4.25 + 4.25	8.50 (2.20 - 9.50)	2350 (390 - 3120)	3.62
	35 + 42(1)	3.09 + 3.71	6.80 (2.00 - 7.50)	2060 (380 - 2890)	3.30	3.38 + 5.12	8.50 (2.20 - 9.50)	2350 (390 - 3120)	3.62
	35 + 50(1)	2.80 + 4.00	6.80 (2.00 - 7.50)	2060 (380 - 2890)	3.30	3.38 + 5.12	8.50 (2.20 - 9.50)	2350 (390 - 3120)	3.62
	35 + 60(1)	2.60 + 4.50	6.80 (2.00 - 7.80)	2060 (380 - 3100)	2.78	3.15 + 5.35	8.50 (2.20 - 9.50)	2450 (390 - 3120)	3.47
	42 + 42(1)	3.40 + 3.40	6.80 (2.00 - 8.00)	2060 (380 - 3170)	3.30	4.25 + 4.25	8.50 (2.20 - 9.50)	2350 (390 - 3120)	3.62
	42 + 50(1)	3.10 + 3.70	6.80 (2.00 - 8.00)	2060 (380 - 3170)	3.30	4.25 + 4.25	8.50 (2.20 - 9.50)	2350 (390 - 3120)	3,62
	42 + 60(1)	2.80 + 4.00	6.80 (2.00 - 8.00)	2060 (380 - 3170)	3,30	4.25 + 4.25	8.50 (2.20 - 9.50)	2350 (390 - 3120)	3.62
	50 + 50(1)	3.40 + 3.40	6.80 (2.00 - 8.00)	2060 (380 - 3170)	3.30	4.25 + 4.25	8.50 (2.20 - 9.50)	2350 (390 - 3120)	3.62
	50 + 60(1)	3.20 + 3.90	6.80 (2.00 - 8.00)	2360 (380 - 3170)	2.88	4.00 + 4.50	8.50 (2.20 - 9.50)	2450 (390 - 3120)	3.47

* Note: this refers to the performance with only one unit in operation. However, at least 2 units must be connected to the outside unit.
(1) For each output corresponding to units 42, 50 and 60, a 3/8-to-1/2 pipe adapter is required.

Pipe lengths

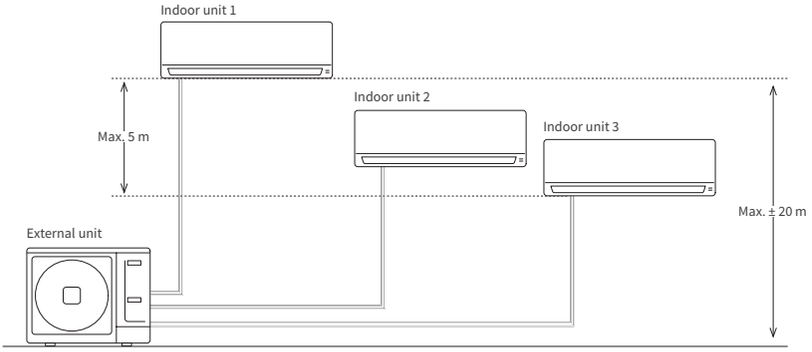
RAM-68NP3E

L1 + L2 + L3 < 60 m
L1 < 25 m ; L2 < 25 m ; L3 < 25 m

The max. level difference between 2 indoor units is 5m.

Pre-charged for 30 m.
Beyond 30 m, allow an additional 20g/m.

Always connect the most powerful indoor unit to the lowest connector.



Indoor unit combinations

Standard multi-split

RAM - 68NP3E		COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
3 units	15 + 15 + 15	1.50 + 1.50 + 1.50	4.50 (2.20 - 5.00)	1400 (420 - 1680)	3.21	2.00 + 2.00 + 2.00	6.00 (2.40 - 6.50)	1650 (430 - 1800)	3.64
	15 + 15 + 18	1.50 + 1.50 + 1.80	4.80 (2.20 - 5.50)	1480 (240 - 1880)	3.24	2.00 + 2.00 + 2.50	6.50 (2.40 - 7.00)	1750 (430 - 2100)	3.71
	15 + 15 + 25	1.50 + 1.50 + 2.50	5.50 (2.20 - 6.00)	1680 (420 - 2280)	3.27	2.00 + 2.00 + 3.40	7.40 (2.20 - 9.30)	2010 (430 - 2200)	3.68
	15 + 15 + 35	1.50 + 1.50 + 3.50	6.50 (2.20 - 7.00)	2010 (420 - 2480)	3.23	2.00 + 2.00 + 4.30	8.30 (2.40 - 9.50)	2260 (430 - 2500)	3.67
	15 + 15 + 42[1]	1.42 + 1.42 + 3.97	6.80 (2.20 - 7.50)	2100 (420 - 2890)	3.24	1.62 + 1.62 + 5.26	8.50 (2.40 - 9.50)	2300 (430 - 2600)	3.7
	15 + 15 + 50[1]	1.28 + 1.28 + 4.25	6.80 (2.20 - 7.50)	2100 (420 - 2890)	3.24	1.62 + 1.62 + 5.26	8.50 (2.40 - 9.50)	2300 (430 - 2600)	3,7
	15 + 15 + 60[1]	1.13 + 1.13 + 4.53	6.80 (2.20 - 8.00)	2180 (420 - 2960)	3.12	1.53 + 1.38 + 5.59	8.50 (2.40 - 9.50)	2260 (430 - 2600)	3.76
	15 + 18 + 18	1.50 + 1.80 + 1.80	5.10 (2.20 - 5.60)	1550 (420 - 2280)	3.29	2.00 + 2.50 + 2.50	7.00 (2.20 - 9.30)	1900 (430 - 2400)	3.68
	15 + 18 + 25	1.50 + 1.80 + 2.50	5.80 (2.20 - 6.30)	1800 (420 - 2480)	3.22	2.00 + 2.50 + 3.40	7.90 (2.40 - 9.50)	2150 (430 - 2600)	3.67
	15 + 18 + 35	1.50 + 1.80 + 3.50	6.80 (2.20 - 7.50)	2100 (420 - 2480)	3.24	1.93 + 2.41 + 4.15	8.50 (2.40 - 9.50)	2290 (430 - 2600)	3.71
	15 + 18 + 42[1]	1.36 + 1.63 + 3.81	6.80 (2.20 - 7.50)	2100 (420 - 2890)	3.24	1.55 + 1.93 + 5.02	8.50 (2.40 - 9.50)	2290 (430 - 2600)	3.71
	15 + 18 + 50[1]	1.23 + 1.47 + 4.10	6.80 (2.20 - 7.50)	2100 (420 - 2890)	3.24	1.55 + 1.93 + 5.02	8.50 (2.40 - 9.50)	2290 (430 - 2600)	3.71
	15 + 18 + 60[1]	1.10 + 1.32 + 4.39	6.80 (2.20 - 8.00)	2180 (420 - 2960)	3.12	1.44 + 1.80 + 5.26	8.50 (2.40 - 9.50)	2260 (430 - 2600)	3.76
	15 + 25 + 25	1.50 + 2.50 + 2.50	6.50 (1.50 - 7.00)	2020 (420 - 2480)	3.22	1.93 + 3.28 + 3.28	8.50 (2.40 - 9.50)	2290 (430 - 2600)	3.71
	15 + 25 + 35	1.36 + 2.27 + 3.17	6.80 (2.20 - 7.80)	2100 (420 - 2890)	3.24	1.75 + 2.98 + 3.77	8.50 (2.40 - 9.50)	2290 (430 - 2600)	3.71
	15 + 25 + 42[1]	1.24 + 2.07 + 3.48	6.80 (2.20 - 8.00)	2100 (420 - 2960)	3.24	1.43 + 2.43 + 4.64	8.50 (2.40 - 9.50)	2310 (430 - 2600)	3.68
	15 + 25 + 50[1]	1.13 + 1.89 + 3.78	6.80 (2.20 - 8.00)	2100 (420 - 2960)	3.24	1.43 + 2.43 + 4.64	8.50 (2.40 - 9.50)	2310 (430 - 2600)	3.68
	15 + 25 + 60[1]	1.02 + 1.70 + 4.08	6.80 (2.20 - 8.00)	2180 (420 - 2960)	3.12	1.34 + 2.28 + 4.89	8.50 (2.40 - 9.50)	2260 (430 - 2600)	3.76
	15 + 35 + 35	1.20 + 2.80 + 2.80	6.80 (2.20 - 8.00)	2100 (420 - 2890)	3.24	1.60 + 3.45 + 3.45	8.50 (2.40 - 9.50)	2310 (430 - 2600)	3.68
	15 + 35 + 42[1]	1.11 + 2.59 + 3.10	6.80 (2.20 - 8.00)	2100 (420 - 2960)	3.24	1.33 + 2.86 + 4.32	8.50 (2.40 - 9.50)	2310 (430 - 2600)	3.68
	15 + 35 + 50[1]	1.02 + 2.38 + 3.40	6.80 (2.20 - 8.00)	2100 (420 - 2960)	3,24	1.33 + 2.86 + 4.32	8.50 (2.40 - 9.50)	2310 (430 - 2600)	3.68
	15 + 35 + 60[1]	0.93 + 2.16 + 3.71	6.80 (2.20 - 8.00)	2180 (420 - 2960)	3.12	1.14 + 2.73 + 4.63	8.50 (2.40 - 9.50)	2260 (430 - 2600)	3.76
	15 + 42 + 42[1]	1.03 + 2.88 + 2.88	6.80 (2.20 - 8.00)	2180 (420 - 2960)	3.12	1.03 + 3.73 + 3.73	8.50 (2.40 - 9.50)	2260 (430 - 2600)	3.76
	15 + 42 + 50[1]	0.95 + 2.67 + 3.18	6.80 (2.20 - 8.00)	2180 (420 - 2960)	3.12	1.03 + 3.73 + 3.73	8.50 (2.40 - 9.50)	2260 (430 - 2600)	3.76
	18 + 18 + 18	1.80 + 1.80 + 1.80	5.40 (2.20 - 5.90)	1450 (420 - 2190)	3.72	2.50 + 2.50 + 2.50	7.50 (2.40 - 9.50)	2050 (430 - 2600)	3.66
	18 + 18 + 25	1.80 + 1.80 + 2.50	6.10 (2.20 - 6.70)	1720 (420 - 2480)	3.55	2.50 + 2.50 + 3.40	8.40 (2.40 - 9.50)	2150 (430 - 2600)	3.91
	18 + 18 + 35	1.72 + 1.72 + 3.35	6.80 (2.20 - 7.80)	2080 (420 - 2890)	3.27	2.28 + 2.28 + 3.93	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	18 + 18 + 42[1]	1.57 + 1.57 + 3.66	6.80 (2.20 - 8.00)	2080 (420 - 2960)	3.27	1.85 + 1.85 + 4.80	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	18 + 18 + 50[1]	1.42 + 1.42 + 3.95	6.80 (2.20 - 8.00)	2080 (420 - 2960)	3.27	1.85 + 1.85 + 4.80	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	18 + 18 + 60[1]	1.28 + 1.28 + 4.25	6.80 (2.20 - 8.00)	2160 (420 - 2960)	3.15	1.73 + 1.73 + 5.04	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	18 + 25 + 25	1.80 + 2.50 + 2.50	6.80 (2.20 - 7.50)	2080 (420 - 2780)	3.27	2.28 + 3.11 + 3.11	8.50 (2.40 - 9.50)	2200 (430 - 2600)	3.86
	18 + 25 + 35	1.57 + 2.18 + 3.05	6.80 (2.20 - 8.00)	2080 (420 - 2960)	3.27	2.08 + 2.83 + 3.58	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	18 + 25 + 42[1]	1.44 + 2.00 + 3.36	6.80 (2.20 - 8.00)	2080 (440 - 2770)	3.27	1.71 + 2.33 + 4.46	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	18 + 25 + 50[1]	1.32 + 1.83 + 3.66	6.80 (2.20 - 8.00)	2080 (440 - 2770)	3.27	1.71 + 2.33 + 4.46	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	18 + 25 + 60[1]	1.19 + 1.65 + 3.96	6.80 (2.20 - 8.00)	2160 (420 - 2960)	3.15	1.61 + 2.19 + 4.70	8.50 (2.40 - 9.50)	2260 (430 - 2600)	3.76
	18 + 35 + 35	1.39 + 2.70 + 2.70	6.80 (2.20 - 8.00)	2080 (420 - 2960)	3.27	1.91 + 3.29 + 3.29	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	18 + 35 + 42[1]	1.29 + 2.51 + 3.01	6.80 (2.20 - 8.00)	2080 (420 - 2960)	3.27	1.60 + 2.75 + 4.15	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	18 + 35 + 50[1]	1.19 + 2.31 + 3.30	6.80 (2.20 - 8.00)	2080 (420 - 2960)	3.27	1.60 + 2.75 + 4.15	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	25 + 25 + 25	2.27 + 2.27 + 2.27	6.80 (2.20 - 7.80)	2080 (420 - 2890)	3.27	2.83 + 2.83 + 2.83	8.50 (2.40 - 9.50)	2290 (430 - 2600)	3.71
	25 + 25 + 35	2.00 + 2.00 + 2.80	6.80 (2.20 - 8.00)	2080 (420 - 2960)	3.27	2.60 + 2.60 + 3.29	8.50 (2.40 - 9.50)	2290 (430 - 2600)	3.71
	25 + 25 + 42[1]	1.85 + 1.85 + 3.10	6.80 (2.20 - 8.00)	2080 (420 - 2960)	3.27	2.17 + 2.17 + 4.15	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	25 + 25 + 50[1]	1.70 + 1.70 + 3.40	6.80 (2.20 - 8.00)	2080 (420 - 2960)	3.27	2.17 + 2.17 + 4.15	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	25 + 25 + 60[1]	1.55 + 1.55 + 3.71	6.80 (2.20 - 8.00)	2160 (420 - 2960)	3.15	2.05 + 2.05 + 4.40	8.50 (2.40 - 9.50)	2260 (430 - 2600)	3.76
	25 + 35 + 35	1.79 + 2.51 + 2.51	6.80 (2.20 - 8.00)	2080 (420 - 2960)	3.27	2.41 + 3.05 + 3.05	8.50 (2.40 - 9.50)	2290 (430 - 2600)	3.71
	25 + 35 + 42[1]	1.67 + 2.33 + 2.80	6.80 (2.20 - 8.00)	2080 (420 - 2960)	3.27	2.04 + 2.57 + 3.89	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	25 + 35 + 50[1]	1.55 + 2.16 + 3.09	6.80 (2.20 - 8.00)	2080 (420 - 2960)	3.27	2.04 + 2.57 + 3.89	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	25 + 42 + 42[1]	1.56 + 2.62 + 2.62	6.80 (2.20 - 8.00)	2080 (420 - 2960)	3.27	2.04 + 2.57 + 3.89	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	35 + 35 + 35	2.27 + 2.27 + 2.27	6.80 (2.20 - 8.00)	2080 (420 - 2960)	3.27	2.83 + 2.83 + 2.83	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73

[1] For each output corresponding to units 42, 50, and 60, a 3/8-to-1/2 pipe adapter is required.

RAM - 70NP4E		COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP class
1 unit*	15	1.50	1.50 (1.00 - 1.60)	400 (200 - 480)	3.75	2.00	2.00 (1.10 - 2.20)	560 (320 - 850)	3.57
	18	1.80	1.80 (1.50 - 2.00)	450 (280 - 500)	4.00	2.50	2.50 (1.80 - 3.50)	720 (320 - 1130)	3.47
	25	2.50	2.50 (1.50 - 2.80)	650 (280 - 720)	3.85	3.40	3.40 (1.80 - 4.70)	980 (320 - 1480)	3.47
	35	3.50	3.50 (1.50 - 3.90)	1030 (280 - 1130)	3.40	4.30	4.30 (1.80 - 5.80)	1150 (320 - 1950)	3.74
	42	4.20	4.20 (1.50 - 5.60)	1450 (280 - 1800)	2.90	6.50	6.50 (1.80 - 7.20)	2030 (320 - 2530)	3.20
	50	5.00	5.00 (1.50 - 5.60)	1450 (280 - 1800)	3.45	6.50	6.50 (1.80 - 7.20)	2030 (320 - 2530)	3.20
	60	6.00	6.00 (1.50 - 6.60)	1450 (280 - 2290)	4.14	7.30	7.30 (1.80 - 8.50)	2100 (320 - 2860)	3.48
2 units	15 + 15	1.50 + 1.50	3.00 (1.50 - 2.80)	870 (380 - 980)	3.45	2.00 + 2.00	4.00 (2.20 - 4.70)	1080 (200 - 1100)	3.70
	15 + 18	1.50 + 1.80	3.30 (1.50 - 3.50)	950 (380 - 1000)	3.47	2.00 + 2.50	4.50 (2.20 - 5.20)	1200 (200 - 1300)	3.75
	15 + 25	1.50 + 2.50	4.00 (1.50 - 4.00)	1150 (380 - 1300)	3.48	2.00 + 3.40	5.40 (2.20 - 6.40)	1450 (200 - 1780)	3.72
	15 + 35	1.50 + 3.50	5.00 (1.50 - 5.20)	1450 (380 - 1450)	3.45	2.00 + 4.30	6.30 (2.20 - 7.20)	1660 (200 - 2010)	3.80
	15 + 42	1.50 + 4.20	5.70 (1.50 - 5.90)	1950 (380 - 2380)	2.92	2.00 + 6.50	8.50 (2.20 - 7.20)	2200 (390 - 3120)	3.86
	15 + 50	1.50 + 5.00	6.50 (1.50 - 5.90)	2000 (380 - 2380)	3.25	2.00 + 6.50	8.50 (2.20 - 7.20)	2200 (390 - 3120)	3.86
	15 + 60	1.40 + 5.60	7.00 (1.50 - 6.50)	2000 (380 - 2580)	3.50	1.83 + 6.67	8.50 (2.20 - 8.60)	2200 (390 - 3120)	3.86
	18 + 18	1.80 + 1.80	3.60 (2.00 - 4.00)	1020 (380 - 1020)	3.53	2.50 + 2.50	5.00 (2.20 - 6.40)	1380 (390 - 2750)	3.62
	18 + 25	1.80 + 2.50	4.30 (2.00 - 4.70)	1120 (380 - 1360)	3.84	2.50 + 3.40	5.90 (2.20 - 7.20)	1610 (390 - 3000)	3.66
	18 + 35	1.80 + 3.50	5.30 (2.00 - 5.80)	1600 (380 - 1950)	3.31	2.50 + 4.30	6.80 (2.20 - 7.20)	1850 (390 - 3120)	3.68
	18 + 42	1.80 + 4.20	6.00 (2.00 - 7.10)	1800 (380 - 2820)	3.33	2.36 + 6.14	8.50 (2.20 - 9.50)	2110 (390 - 3120)	4.03
	18 + 50	1.80 + 5.00	6.80 (2.00 - 7.10)	1830 (380 - 2820)	3.72	2.36 + 6.14	8.50 (2.20 - 9.50)	2120 (390 - 3120)	4.01
	18 + 60	1.70 + 5.40	7.00 (2.00 - 7.50)	2100 (380 - 2980)	3.33	2.17 + 6.33	8.50 (2.20 - 9.50)	2150 (390 - 3120)	3.95
	25 + 25	2.50 + 2.50	5.00 (2.00 - 5.50)	1410 (380 - 1720)	3.55	3.40 + 3.40	6.80 (2.20 - 9.50)	1850 (390 - 3120)	3.68
	25 + 35	2.50 + 3.50	6.00 (2.00 - 6.60)	1850 (380 - 2380)	3.24	3.60 + 4.30	7.70 (2.20 - 9.50)	2120 (390 - 3120)	3.63
	25 + 42	2.50 + 4.20	6.70 (2.00 - 7.50)	2100 (380 - 2980)	3.19	2.92 + 5.58	8.50 (2.20 - 9.50)	2350 (390 - 3120)	3.62
	25 + 50	2.33 + 4.67	7.00 (2.00 - 7.50)	2100 (380 - 2980)	3.33	2.92 + 5.58	8.50 (2.20 - 9.50)	2350 (390 - 3120)	3.62
	25 + 60	2.06 + 4.94	7.00 (2.00 - 7.50)	2100 (380 - 2980)	3.33	2.70 + 5.80	8.50 (2.20 - 9.50)	2350 (390 - 3120)	3.62
	35 + 35	3.50 + 3.50	7.00 (2.00 - 7.40)	1890 (380 - 2940)	3.70	4.25 + 4.25	8.50 (2.20 - 9.50)	2020 (390 - 3120)	4.21
	35 + 42	3.18 + 3.82	7.00 (2.00 - 7.50)	2100 (380 - 2890)	3.33	3.38 + 5.12	8.50 (2.20 - 9.50)	2350 (390 - 3120)	3.62
	35 + 50	2.88 + 4.12	7.00 (2.00 - 7.50)	2100 (380 - 2890)	3.33	3.38 + 5.12	8.50 (2.20 - 9.50)	2350 (390 - 3120)	3.62
	35 + 60	2.58 + 4.42	7.00 (2.00 - 7.80)	2100 (380 - 3100)	3.33	3.15 + 5.35	8.50 (2.20 - 9.50)	2350 (390 - 3120)	3.62
	42 + 42	3.50 + 3.50	7.00 (2.00 - 8.00)	2100 (380 - 3170)	3.33	4.25 + 4.25	8.50 (2.20 - 9.50)	2350 (390 - 3120)	3.62
	42 + 50	3.20 + 3.80	7.00 (2.00 - 8.00)	2100 (380 - 3170)	3.33	4.25 + 4.25	8.50 (2.20 - 9.50)	2350 (390 - 3120)	3.62
	42 + 60	2.88 + 4.12	7.00 (2.00 - 8.00)	2100 (380 - 3170)	3.33	4.25 + 4.25	8.50 (2.20 - 9.50)	2350 (390 - 3120)	3,62
	50 + 50	3.50 + 3.50	7.00 (2.00 - 8.00)	2100 (380 - 3170)	3.33	4.25 + 4.25	8.50 (2.20 - 9.50)	2350 (390 - 3120)	3,62
	50 + 60	3.18 + 3.82	7.00 (2.00 - 8.00)	2100 (380 - 3170)	3.33	4.00 + 4.50	8.50 (2.20 - 9.50)	2350 (390 - 3120)	3,62

* Note: this refers to the performance with only one unit in operation. However, at least 2 units must be connected to the outside unit.

Pipe lengths

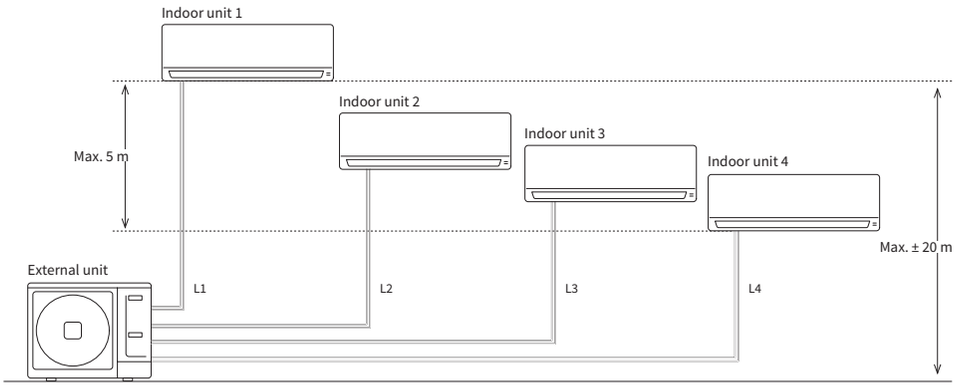
RAM-70NP4E

L1 + L2 + L3 + L4 < 60 m
L1 ; L2 ; L3 ; L4 < 25 m

The max. level difference between 2 indoor units is 5m.

Pre-charged for 30 m.
Beyond 30 m, allow an additional 20 g/m. The max. height between the highest indoor unit and the lowest indoor unit: 5 m.

Always connect the most powerful indoor unit to the lowest connector.



Indoor unit combinations

Standard multi-split

RAM - 70NP4E		COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
3 units	15 + 15 + 15	1.50 + 1.50 + 1.50	4.50 (2.20 - 5.00)	1400 (420 - 1680)	3.21	2.00 + 2.00 + 2.00	6.00 (2.40 - 6.50)	1650 (430 - 1800)	3.64
	15 + 15 + 18	1.50 + 1.50 + 1.80	4.80 (2.20 - 5.50)	1480 (240 - 1880)	3.24	2.00 + 2.00 + 2.50	6.50 (2.40 - 7.00)	1750 (430 - 2100)	3.71
	15 + 15 + 25	1.50 + 1.50 + 2.50	5.50 (2.20 - 6.00)	1680 (420 - 2280)	3.27	2.00 + 2.00 + 3.40	7.40 (2.20 - 9.30)	2010 (430 - 2200)	3.68
	15 + 15 + 35	1.50 + 1.50 + 3.50	6.50 (2.20 - 7.00)	2010 (420 - 2480)	3.23	2.00 + 2.00 + 4.30	8.30 (2.40 - 9.50)	2260 (430 - 2500)	3.67
	15 + 15 + 42	1.46 + 1.46 + 4.08	7.00 (2.20 - 7.50)	2100 (420 - 2890)	3.33	1.62 + 1.62 + 5.26	8.50 (2.40 - 9.50)	2300 (430 - 2600)	3.70
	15 + 15 + 50	1.31 + 1.31 + 4.38	7.00 (2.20 - 7.50)	2100 (420 - 2890)	3.33	1.62 + 1.62 + 5.26	8.50 (2.40 - 9.50)	2300 (430 - 2600)	3.70
	15 + 15 + 60	1.17 + 1.17 + 4.67	7.00 (2.20 - 8.00)	2100 (420 - 2960)	3.33	1.53 + 1.38 + 5.59	8.50 (2.40 - 9.50)	2260 (430 - 2600)	3.76
	15 + 18 + 18	1.50 + 1.80 + 1.80	5.10 (2.20 - 5.60)	1550 (420 - 2280)	3.29	2.00 + 2.50 + 2.50	7.00 (2.20 - 9.30)	1900 (430 - 2400)	3.68
	15 + 18 + 25	1.50 + 1.80 + 2.50	5.80 (2.20 - 6.30)	1800 (420 - 2480)	3.22	2.00 + 2.50 + 3.40	7.90 (2.40 - 9.50)	2150 (430 - 2600)	3.67
	15 + 18 + 35	1.50 + 1.80 + 3.50	6.80 (2.20 - 7.50)	2100 (420 - 2480)	3.24	1.93 + 2.41 + 4.15	8.50 (2.40 - 9.50)	2290 (430 - 2600)	3.71
	15 + 18 + 42	1.40 + 1.68 + 3.92	7.00 (2.20 - 7.50)	2100 (420 - 2890)	3.33	1.55 + 1.93 + 5.02	8.50 (2.40 - 9.50)	2290 (430 - 2600)	3.71
	15 + 18 + 50	1.27 + 1.52 + 4.22	7.00 (2.20 - 7.50)	2100 (420 - 2890)	3.33	1.55 + 1.93 + 5.02	8.50 (2.40 - 9.50)	2290 (430 - 2600)	3.71
	15 + 18 + 60	1.13 + 1.35 + 4.52	7.00 (2.20 - 8.00)	2100 (420 - 2960)	3.33	1.44 + 1.80 + 5.26	8.50 (2.40 - 9.50)	2260 (430 - 2600)	3.76
	15 + 25 + 25	1.50 + 2.50 + 2.50	6.50 (2.20 - 7.00)	2020 (420 - 2480)	3.22	1.93 + 3.28 + 3.28	8.50 (2.40 - 9.50)	2290 (430 - 2600)	3.71
	15 + 25 + 35	1.40 + 2.33 + 3.27	7.00 (2.20 - 7.80)	2100 (420 - 2890)	3.33	1.75 + 2.98 + 3.77	8.50 (2.40 - 9.50)	2290 (430 - 2600)	3.71
	15 + 25 + 42	1.28 + 2.13 + 3.59	7.00 (2.20 - 8.00)	2100 (420 - 2960)	3.33	1.43 + 2.43 + 4.64	8.50 (2.40 - 9.50)	2310 (430 - 2600)	3.68
	15 + 25 + 50	1.17 + 1.94 + 3.89	7.00 (2.20 - 8.00)	2100 (420 - 2960)	3.33	1.43 + 2.43 + 4.64	8.50 (2.40 - 9.50)	2310 (430 - 2600)	3.68
	15 + 25 + 60	1.05 + 1.75 + 4.20	7.00 (2.20 - 8.00)	2100 (420 - 2960)	3.33	1.34 + 2.28 + 4.89	8.50 (2.40 - 9.50)	2260 (430 - 2600)	3.76
	15 + 35 + 35	1.24 + 2.88 + 2.88	7.00 (2.20 - 8.00)	2100 (420 - 2890)	3.33	1.60 + 3.45 + 3.45	8.50 (2.40 - 9.50)	2260 (430 - 2600)	3.76
	15 + 35 + 42	1.14 + 2.66 + 3.20	7.00 (2.20 - 8.00)	2100 (420 - 2960)	3.33	1.33 + 2.86 + 4.32	8.50 (2.40 - 9.50)	2260 (430 - 2600)	3.76
	15 + 35 + 50	1.05 + 2.45 + 3.50	7.00 (2.20 - 8.00)	2100 (420 - 2960)	3.33	1.33 + 2.86 + 4.32	8.50 (2.40 - 9.50)	2260 (430 - 2600)	3.76
	15 + 35 + 60	0.95 + 2.23 + 3.82	7.00 (2.20 - 8.00)	2100 (420 - 2960)	3.33	1.25 + 2.69 + 4.56	8.50 (2.40 - 9.50)	2260 (430 - 2600)	3.76
	15 + 42 + 42	1.06 + 2.97 + 2.97	7.00 (2.20 - 8.00)	2100 (420 - 2960)	3.33	1.13 + 3.68 + 3.68	8.50 (2.40 - 9.50)	2260 (430 - 2600)	3.76
	15 + 42 + 50	0.98 + 2.75 + 3.27	7.00 (2.20 - 8.00)	2100 (420 - 2960)	3.33	1.13 + 3.68 + 3.68	8.50 (2.40 - 9.50)	2260 (430 - 2600)	3.76
	15 + 50 + 50	0.91 + 3.04 + 3.04	7.00 (2.20 - 8.00)	2100 (420 - 2960)	3.33	1.13 + 3.68 + 3.68	8.50 (2.40 - 9.50)	2260 (430 - 2600)	3.76
	18 + 18 + 18	1.80 + 1.80 + 1.80	5.40 (2.20 - 5.90)	1450 (420 - 2190)	3.72	2.50 + 2.50 + 2.50	7.50 (2.40 - 9.50)	2050 (430 - 2600)	3.66
	18 + 18 + 25	1.80 + 1.80 + 2.50	6.10 (2.20 - 6.70)	1720 (420 - 2480)	3.55	2.50 + 2.50 + 3.40	8.40 (2.40 - 9.50)	2290 (430 - 2600)	3.67
	18 + 18 + 35	1.77 + 1.77 + 3.45	7.00 (2.20 - 7.80)	2080 (420 - 2890)	3.37	2.28 + 2.28 + 3.93	8.50 (2.40 - 9.50)	2290 (430 - 2600)	3.71
	18 + 18 + 42	1.62 + 1.62 + 3.77	7.00 (2.20 - 8.00)	2080 (420 - 2890)	3.37	1.85 + 1.85 + 4.80	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	18 + 18 + 50	1.47 + 1.47 + 4.07	7.00 (2.20 - 8.00)	2080 (420 - 2890)	3.37	1.85 + 1.85 + 4.80	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	18 + 18 + 60	1.35 + 1.35 + 4.40	7.00 (2.20 - 8.00)	2100 (420 - 2960)	3.33	1.73 + 1.73 + 5.04	8.50 (2.40 - 9.50)	2320 (430 - 2600)	3.66
	18 + 25 + 25	1.80 + 2.50 + 2.50	6.8 (2.20 - 7.50)	2080 (420 - 2780)	3.27	2.28 + 3.11 + 3.11	8.50 (2.40 - 9.50)	2290 (430 - 2600)	3.71
	18 + 25 + 35	1.62 + 2.24 + 3.14	7.00 (2.20 - 8.00)	2080 (420 - 2890)	3.37	2.08 + 2.83 + 3.58	8.50 (2.40 - 9.50)	2290 (430 - 2600)	3.71
	18 + 25 + 42	1.48 + 2.06 + 3.46	7.00 (2.20 - 8.00)	2080 (420 - 2770)	3.37	1.71 + 2.33 + 4.46	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	18 + 25 + 50	1.35 + 1.88 + 3.76	7.00 (2.20 - 8.00)	2080 (420 - 2770)	3.37	1.71 + 2.33 + 4.46	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	18 + 25 + 60	1.25 + 1.70 + 4.15	7.00 (2.20 - 8.00)	2080 (420 - 2960)	3.37	1.61 + 2.19 + 4.70	8.50 (2.40 - 9.50)	2320 (430 - 2600)	3.66
	18 + 35 + 35	1.43 + 2.78 + 2.78	7.00 (2.20 - 8.00)	2080 (420 - 2960)	3.37	1.91 + 3.29 + 3.29	8.50 (2.40 - 9.50)	2290 (430 - 2600)	3.71
	18 + 35 + 42	1.33 + 2.58 + 3.09	7.00 (2.20 - 8.00)	2080 (420 - 2960)	3.37	1.60 + 2.75 + 4.15	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	18 + 35 + 50	1.22 + 2.38 + 3.40	7.00 (2.20 - 8.00)	2080 (420 - 2960)	3.37	1.60 + 2.75 + 4.15	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	18 + 42 + 42	1.24 + 2.88 + 2.88	7.00 (2.20 - 8.00)	2080 (420 - 2960)	3.37	1.60 + 2.75 + 4.15	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	18 + 42 + 50	1.15 + 2.67 + 3.18	7.00 (2.20 - 8.00)	2080 (420 - 2960)	3.37	1.60 + 2.75 + 4.15	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	25 + 25 + 25	2.33 + 2.33 + 2.33	7.00 (2.20 - 7.80)	2080 (420 - 2890)	3.37	2.83 + 2.83 + 2.83	8.50 (2.40 - 9.50)	2290 (430 - 2600)	3.71
	25 + 25 + 35	2.06 + 2.06 + 2.88	7.00 (2.20 - 8.00)	2080 (420 - 2960)	3.37	2.60 + 2.60 + 3.29	8.50 (2.40 - 9.50)	2290 (430 - 2600)	3.71
	25 + 25 + 42	1.90 + 1.90 + 3.20	7.00 (2.20 - 8.00)	2080 (420 - 2960)	3.37	2.17 + 2.17 + 4.15	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	25 + 25 + 50	1.75 + 1.75 + 3.50	7.00 (2.20 - 8.00)	2080 (420 - 2960)	3.37	2.17 + 2.17 + 4.15	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	25 + 25 + 60	1.60 + 1.60 + 3.90	7.00 (2.20 - 8.00)	2080 (420 - 2960)	3.37	2.05 + 2.05 + 4.40	8.50 (2.40 - 9.50)	2320 (430 - 2600)	3.66
	25 + 35 + 35	1.84 + 2.58 + 2.58	7.00 (2.20 - 8.00)	2080 (420 - 2960)	3.37	2.41 + 3.05 + 3.05	8.50 (2.40 - 9.50)	2290 (430 - 2600)	3.71
	25 + 35 + 42	1.72 + 2.40 + 2.88	7.00 (2.20 - 8.00)	2080 (420 - 2960)	3.37	2.04 + 2.57 + 3.89	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	25 + 35 + 50	1.59 + 2.23 + 3.18	7.00 (2.20 - 8.00)	2080 (420 - 2960)	3.37	2.04 + 2.57 + 3.89	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73
	35 + 35 + 35	2.33 + 2.33 + 2.33	7.00 (2.20 - 8.00)	2080 (420 - 2960)	3.37	2.83 + 2.83 + 2.83	8.50 (2.40 - 9.50)	2280 (430 - 2600)	3.73

RAM - 70NP4E		COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
4 units	15 + 15 + 15 + 15	1.50 + 1.50 + 1.50 + 1.50	6.00 (2.20 - 6.50)	1600 (200 - 1660)	3.75	2.00 + 2.00 + 2.00 + 2.00	8.00 (2.60 - 9.00)	2150 (460 - 2420)	3.72
	15 + 15 + 15 + 18	1.50 + 1.50 + 1.50 + 1.80	6.30 (2.20 - 6.70)	1650 (420 - 2010)	3.82	2.00 + 2.00 + 2.00 + 2.50	8.50 (2.60 - 9.50)	2180 (460 - 2520)	3.90
	15 + 15 + 15 + 25	1.50 + 1.50 + 1.50 + 2.50	7.00 (2.20 - 7.50)	1890 (420 - 2010)	3.70	1.81 + 1.81 + 1.81 + 3.07	8.50 (2.60 - 9.50)	2200 (480 - 2580)	3.86
	15 + 15 + 15 + 35	1.31 + 1.31 + 1.31 + 3.06	7.00 (2.40 - 7.90)	2100 (450 - 2650)	3.33	1.65 + 1.65 + 1.65 + 3.55	8.50 (2.60 - 9.50)	2200 (480 - 2580)	3.86
	15 + 15 + 15 + 42	1.21 + 1.21 + 1.21 + 3.38	7.00 (2.40 - 8.50)	2100 (450 - 2650)	3.33	1.36 + 1.36 + 1.36 + 4.42	8.50 (2.60 - 9.50)	2200 (480 - 2580)	3.86
	15 + 15 + 15 + 50	1.11 + 1.11 + 1.11 + 3.68	7.00 (2.40 - 8.50)	2100 (450 - 2650)	3.33	1.36 + 1.36 + 1.36 + 4.42	8.50 (2.60 - 9.50)	2200 (480 - 2580)	3.86
	15 + 15 + 15 + 60	1.00 + 1.00 + 1.00 + 4.00	7.00 (2.40 - 8.50)	2100 (450 - 2650)	3.33	1.28 + 1.28 + 1.28 + 4.67	8.50 (2.60 - 9.50)	2200 (480 - 2580)	3.86
	15 + 15 + 18 + 18	1.50 + 1.50 + 1.80 + 1.80	6.60 (2.20 - 7.00)	1850 (420 - 2010)	3.57	1.89 + 1.89 + 2.36 + 2.36	8.50 (2.60 - 9.50)	2200 (480 - 2580)	3.86
	15 + 15 + 18 + 25	1.44 + 1.44 + 1.73 + 2.40	7.00 (2.40 - 7.50)	2010 (420 - 2310)	3.48	1.72 + 1.72 + 2.15 + 2.92	8.50 (2.60 - 9.50)	2200 (480 - 2580)	3.86
	15 + 15 + 18 + 35	1.27 + 1.27 + 1.52 + 2.95	7.00 (2.40 - 7.70)	2100 (450 - 2650)	3.33	1.57 + 1.57 + 1.97 + 3.38	8.50 (2.60 - 9.50)	2200 (480 - 2580)	3.86
	15 + 15 + 18 + 42	1.17 + 1.17 + 1.40 + 3.27	7.00 (2.40 - 7.70)	2100 (450 - 2650)	3.33	1.31 + 1.31 + 1.63 + 4.25	8.50 (2.60 - 9.50)	2200 (480 - 2580)	3.86
	15 + 15 + 18 + 50	1.07 + 1.07 + 1.29 + 3.57	7.00 (2.40 - 7.70)	2100 (450 - 2650)	3.33	1.31 + 1.31 + 1.63 + 4.25	8.50 (2.60 - 9.50)	2200 (480 - 2580)	3.86
	15 + 15 + 18 + 60	0.97 + 0.97 + 1.17 + 3.89	7.00 (2.40 - 7.70)	2100 (450 - 3020)	3.33	1.23 + 1.23 + 1.54 + 4.50	8.50 (2.60 - 9.50)	2180 (460 - 2520)	3.90
	15 + 15 + 25 + 25	1.31 + 1.31 + 2.19 + 2.19	7.00 (2.40 - 7.90)	2100 (450 - 2650)	3.33	1.57 + 1.57 + 2.68 + 2.68	8.50 (2.60 - 9.50)	2200 (480 - 2580)	3.86
	15 + 15 + 25 + 35	1.17 + 1.17 + 1.94 + 2.72	7.00 (2.40 - 7.90)	2100 (450 - 2650)	3.33	1.45 + 1.45 + 2.47 + 3.12	8.50 (2.60 - 9.50)	2200 (480 - 2580)	3.86
	15 + 15 + 25 + 42	1.08 + 1.08 + 1.80 + 3.03	7.00 (2.40 - 8.50)	2100 (450 - 2650)	3.33	1.22 + 1.22 + 2.08 + 3.97	8.50 (2.60 - 9.50)	2180 (460 - 2520)	3.90
	15 + 15 + 25 + 50	1.00 + 1.00 + 1.67 + 3.33	7.00 (2.40 - 8.50)	2100 (450 - 2650)	3.33	1.22 + 1.22 + 2.08 + 3.97	8.50 (2.60 - 9.50)	2180 (460 - 2520)	3.90
	15 + 15 + 25 + 60	0.91 + 0.91 + 1.52 + 3.65	7.00 (2.40 - 8.80)	2100 (450 - 3020)	3.33	1.16 + 1.16 + 1.97 + 4.22	8.50 (2.60 - 9.50)	2180 (460 - 2520)	3.90
	15 + 15 + 35 + 35	1.05 + 1.05 + 2.45 + 2.45	7.00 (2.40 - 8.50)	2100 (450 - 2650)	3.33	1.35 + 1.35 + 2.90 + 2.90	8.50 (2.60 - 9.50)	2200 (480 - 2580)	3.86
	15 + 15 + 35 + 42	0.98 + 0.98 + 2.29 + 2.75	7.00 (2.40 - 8.80)	2100 (450 - 3020)	3.33	1.15 + 1.15 + 2.47 + 3.73	8.50 (2.60 - 9.50)	2180 (460 - 2520)	3.90
	15 + 15 + 35 + 50	0.91 + 0.91 + 2.13 + 3.04	7.00 (2.40 - 8.80)	2100 (450 - 3020)	3.33	1.15 + 1.15 + 2.47 + 3.73	8.50 (2.60 - 9.50)	2180 (460 - 2520)	3.90
	15 + 18 + 18 + 18	1.50 + 1.80 + 1.80 + 1.80	6.90 (2.40 - 7.50)	2010 (420 - 2310)	3.43	1.79 + 2.24 + 2.24 + 2.24	8.50 (2.60 - 9.50)	2200 (480 - 2580)	3.86
	15 + 18 + 18 + 25	1.38 + 1.66 + 1.66 + 2.30	7.00 (2.40 - 7.90)	2100 (450 - 2650)	3.33	1.63 + 2.04 + 2.04 + 2.78	8.50 (2.60 - 9.50)	2200 (480 - 2580)	3.86
	15 + 18 + 18 + 35	1.22 + 1.47 + 1.47 + 2.85	7.00 (2.40 - 7.90)	2100 (450 - 2650)	3.33	1.50 + 1.88 + 1.88 + 3.23	8.50 (2.60 - 9.50)	2200 (480 - 2580)	3.86
	15 + 18 + 18 + 42	1.13 + 1.35 + 1.35 + 3.16	7.00 (2.40 - 8.80)	2100 (450 - 2650)	3.33	1.26 + 1.57 + 1.57 + 4.09	8.50 (2.60 - 9.50)	2180 (460 - 2520)	3.90
	15 + 18 + 18 + 50	1.04 + 1.25 + 1.25 + 3.47	7.00 (2.40 - 8.80)	2100 (450 - 2650)	3.33	1.26 + 1.57 + 1.57 + 4.09	8.50 (2.60 - 9.50)	2180 (460 - 2520)	3.90
	15 + 18 + 18 + 60	0.95 + 1.14 + 1.14 + 3.78	7.00 (2.40 - 8.80)	2110 (450 - 3020)	3.32	1.19 + 1.49 + 1.49 + 4.34	8.50 (2.60 - 9.50)	2180 (460 - 2520)	3.90
	15 + 18 + 25 + 25	1.27 + 1.52 + 2.11 + 2.11	7.00 (2.40 - 7.90)	2110 (450 - 2650)	3.32	1.50 + 1.88 + 2.56 + 2.56	8.50 (2.60 - 9.50)	2200 (480 - 2580)	3.86
	15 + 18 + 25 + 35	1.13 + 1.35 + 1.88 + 2.63	7.00 (2.40 - 7.90)	2110 (450 - 2650)	3.32	1.39 + 1.74 + 2.37 + 3.00	8.50 (2.60 - 9.50)	2200 (480 - 2580)	3.86
	15 + 18 + 25 + 42	1.05 + 1.26 + 1.75 + 2.94	7.00 (2.40 - 8.80)	2110 (450 - 3020)	3.32	1.18 + 1.48 + 2.01 + 3.84	8.50 (2.60 - 9.50)	2180 (460 - 2520)	3.90
	15 + 18 + 25 + 50	0.97 + 1.17 + 1.62 + 3.24	7.00 (2.40 - 8.80)	2110 (450 - 3020)	3.32	1.18 + 1.48 + 2.01 + 3.84	8.50 (2.60 - 9.50)	2180 (460 - 2520)	3.90
	15 + 18 + 35 + 35	1.02 + 1.22 + 2.38 + 2.38	7.00 (2.40 - 7.90)	2110 (450 - 3020)	3.32	1.30 + 1.62 + 2.79 + 2.79	8.50 (2.60 - 9.50)	2200 (480 - 2580)	3.86
	15 + 25 + 25 + 25	1.17 + 1.94 + 1.94 + 1.94	7.00 (2.40 - 7.90)	2110 (450 - 2650)	3.32	1.39 + 2.37 + 2.37 + 2.37	8.50 (2.60 - 9.50)	2200 (480 - 2580)	3.86
	15 + 25 + 25 + 35	1.05 + 1.75 + 1.75 + 2.45	7.00 (2.40 - 8.80)	2110 (450 - 2650)	3.32	1.30 + 2.21 + 2.21 + 2.79	8.50 (2.60 - 9.50)	2200 (480 - 2580)	3.86
	15 + 25 + 35 + 35	0.95 + 1.59 + 2.23 + 2.23	7.00 (2.40 - 8.80)	2110 (450 - 3020)	3.32	1.21 + 2.06 + 2.61 + 2.61	8.50 (2.60 - 9.50)	2180 (460 - 2520)	3.90
	18 + 18 + 18 + 18	1.75 + 1.75 + 1.75 + 1.75	7.00 (2.40 - 7.90)	2110 (450 - 2870)	3.32	2.13 + 2.13 + 2.13 + 2.13	8.50 (2.60 - 9.50)	2120 (480 - 2580)	4.01
	18 + 18 + 18 + 25	1.59 + 1.59 + 1.59 + 2.22	7.00 (2.40 - 7.90)	2110 (450 - 3020)	3.32	1.95 + 1.95 + 1.95 + 2.65	8.50 (2.60 - 9.50)	2120 (480 - 2580)	4.01
	18 + 18 + 18 + 35	1.42 + 1.42 + 1.42 + 2.75	7.00 (2.40 - 8.50)	2110 (450 - 3090)	3.32	1.80 + 1.80 + 1.80 + 3.10	8.50 (2.60 - 9.50)	2120 (460 - 2520)	4.01
	18 + 18 + 18 + 42	1.31 + 1.31 + 1.31 + 3.06	7.00 (2.40 - 8.80)	2110 (450 - 3200)	3.32	1.52 + 1.52 + 1.52 + 3.95	8.50 (2.60 - 9.50)	2110 (460 - 2520)	4.03
	18 + 18 + 18 + 50	1.21 + 1.21 + 1.21 + 3.37	7.00 (2.40 - 8.80)	2110 (450 - 3200)	3.32	1.52 + 1.52 + 1.52 + 3.95	8.50 (2.60 - 9.50)	2110 (460 - 2520)	4.03
	18 + 18 + 25 + 25	1.47 + 1.47 + 2.03 + 2.03	7.00 (2.40 - 8.50)	2110 (450 - 3090)	3.32	1.80 + 1.80 + 2.45 + 2.45	8.50 (2.60 - 9.50)	2120 (460 - 2520)	4.01
	18 + 18 + 25 + 35	1.31 + 1.31 + 1.82 + 2.55	7.00 (2.40 - 8.50)	2100 (450 - 3090)	3.33	1.67 + 1.67 + 2.28 + 2.88	8.50 (2.60 - 9.50)	2120 (460 - 2520)	4.01
	18 + 18 + 35 + 35	1.19 + 1.19 + 2.31 + 2.31	7.00 (2.40 - 8.80)	2100 (450 - 3200)	3.33	1.56 + 1.56 + 2.69 + 2.69	8.50 (2.60 - 9.50)	2110 (460 - 2520)	4.03
	18 + 25 + 25 + 25	1.35 + 1.88 + 1.88 + 1.88	7.00 (2.40 - 8.50)	2100 (450 - 3090)	3.33	1.67 + 2.28 + 2.28 + 2.28	8.50 (2.60 - 9.50)	2120 (460 - 2520)	4.01
	18 + 25 + 25 + 35	1.22 + 1.70 + 1.70 + 2.38	7.00 (2.40 - 8.80)	2100 (450 - 3200)	3.33	1.56 + 2.13 + 2.13 + 2.69	8.50 (2.60 - 9.50)	2110 (460 - 2520)	4.03
	18 + 25 + 25 + 42	1.15 + 1.59 + 1.59 + 2.67	7.00 (2.40 - 8.80)	2100 (450 - 3200)	3.33	1.56 + 2.13 + 2.13 + 2.69	8.50 (2.60 - 9.50)	2110 (460 - 2520)	4.03
	25 + 25 + 25 + 25	1.75 + 1.75 + 1.75 + 1.75	7.00 (2.40 - 8.80)	2100 (450 - 3200)	3.33	2.13 + 2.13 + 2.13 + 2.13	8.50 (2.60 - 9.50)	2110 (460 - 2520)	4.03
	25 + 25 + 25 + 35	1.59 + 1.59 + 1.59 + 2.23	7.00 (2.40 - 8.80)	2100 (450 - 3200)	3.33	1.99 + 1.99 + 1.99 + 2.52	8.50 (2.60 - 9.50)	2110 (460 - 2520)	4.03

Indoor unit combinations

Standard multi-split

RAM - 90NP5E		COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
1 unit*	15	1.50	1.50 (1.00 - 1.60)	420 (320 - 480)	3.57	2.00	2.00 (1.50 - 2.20)	620 (360 - 850)	3.23
	18	2.00	1.80 (1.70 - 2.00)	500 (320 - 610)	3.60	2.50	2.50 (2.00 - 3.00)	780 (360 - 920)	3.21
	25	2.50	2.50 (1.70 - 2.80)	700 (320 - 860)	3.57	3.40	3.40 (2.00 - 4.00)	1140 (360 - 1340)	2.98
	35	3.50	3.50 (1.70 - 3.90)	1040 (320 - 1270)	3.37	4.30	4.30 (2.00 - 5.20)	1420 (360 - 1720)	3.03
	42	4.20	4.20 (1.70 - 4.20)	1250 (320 - 1270)	3.36	5.20	4.30 (2.00 - 6.50)	1420 (360 - 1720)	3.66
	50	5.00	5.00 (1.70 - 5.50)	1540 (320 - 1860)	3.25	6.50	6.50 (2.00 - 7.30)	2300 (360 - 2580)	2.83
	60	6.00	6.00 (1.70 - 6.60)	1630 (320 - 1860)	3.68	7.50	7.50 (2.00 - 8.20)	2300 (360 - 2950)	3.26
2 units	15 + 15	1.50 + 1.50	3.00 (2.40 - 3.50)	850 (500 - 1020)	3.53	2.00 + 2.00	4.00 (2.70 - 4.50)	950 (500 - 1140)	4.21
	15 + 18	1.50 + 1.80	3.30 (2.40 - 3.80)	950 (500 - 1140)	3.47	2.00 + 2.50	4.50 (2.70 - 5.00)	1180 (500 - 1416)	3.81
	15 + 25	1.50 + 2.50	4.00 (2.40 - 4.50)	1250 (500 - 1500)	3.20	2.00 + 3.40	5.40 (2.70 - 5.90)	1320 (500 - 1584)	4.09
	15 + 35	1.50 + 3.50	5.00 (2.40 - 5.50)	1550 (500 - 1860)	3.23	2.00 + 4.30	6.30 (2.70 - 6.80)	1550 (500 - 1860)	4.06
	15 + 42	1.50 + 4.20	5.70 (2.40 - 7.00)	1600 (500 - 1860)	3.56	2.00 + 5.20	7.20 (2.70 - 8.0)	1850 (500 - 2560)	3.89
	15 + 50	1.50 + 5.00	6.50 (2.40 - 7.00)	2100 (500 - 2520)	3.10	2.00 + 6.50	8.50 (2.70 - 9.00)	2300 (500 - 2760)	3.70
	15 + 60	1.50 + 6.00	7.50 (2.40 - 7.00)	2100 (500 - 2520)	3.57	2.00 + 7.50	9.50 (2.70 - 10.0)	2300 (500 - 2760)	4.13
	18 + 18	1.80 + 1.80	3.60 (2.40 - 4.00)	970 (500 - 860)	3.71	2.50 + 2.50	5.00 (2.70 - 6.90)	1240 (500 - 1710)	4.03
	18 + 25	1.80 + 2.50	4.30 (2.40 - 4.70)	1000 (500 - 1190)	4.30	2.50 + 3.40	5.90 (2.70 - 7.70)	1530 (500 - 1990)	3.86
	18 + 35	1.80 + 3.50	5.30 (2.40 - 5.80)	1590 (500 - 1900)	3.33	2.50 + 4.30	6.80 (2.70 - 8.50)	1870 (500 - 2320)	3.64
	18 + 42	1.80 + 4.20	6.00 (2.40 - 5.80)	1850 (500 - 1900)	3.24	2.50 + 5.20	7.70 (2.70 - 10.00)	2200 (500 - 2880)	3.50
	18 + 50	1.80 + 5.00	6.80 (2.40 - 7.50)	2370 (450 - 2970)	2.87	2.50 + 6.50	9.00 (2.70 - 10.00)	2470 (500 - 2880)	3.64
	18 + 60	1.80 + 6.00	7.80 (2.40 - 8.50)	2370 (450 - 3120)	3.29	2.50 + 7.50	10.00 (2.70 - 10.00)	2470 (500 - 2880)	4.05
	25 + 25	2.50 + 2.50	5.00 (2.40 - 5.50)	1370 (500 - 1640)	3.65	3.40 + 3.40	6.80 (2.70 - 8.50)	1920 (500 - 2250)	3.54
	25 + 35	2.50 + 3.50	6.00 (2.40 - 6.60)	2000 (500 - 2400)	3.00	3.40 + 4.30	7.70 (2.70 - 9.20)	2280 (500 - 2590)	3.38
	25 + 42	2.50 + 4.20	6.70 (2.40 - 6.60)	2000 (500 - 3470)	3.35	3.40 + 5.20	8.60 (2.70 - 9.20)	2400 (500 - 3110)	3.58
	25 + 50	2.50 + 5.00	7.50 (2.40 - 7.00)	2580 (500 - 3470)	2.91	3.40 + 6.50	9.90 (2.70 - 10.50)	2720 (500 - 3110)	3.64
	25 + 60	2.50 + 6.00	8.50 (2.40 - 8.80)	2580 (500 - 3470)	3.29	3.12 + 6.88	10.00 (2.70 - 11.00)	2720 (500 - 3110)	3.68
	35 + 35	3.50 + 3.50	7.00 (2.40 - 7.70)	2490 (450 - 2990)	2.81	4.30 + 4.30	8.60 (2.70 - 10.00)	2460 (500 - 2860)	3.50
	35 + 42	3.50 + 4.20	7.70 (2.40 - 7.70)	2490 (500 - 2990)	3.09	4.30 + 5.20	9.50 (2.70 - 11.00)	2680 (500 - 3320)	3.54
	35 + 50	3.50 + 5.00	8.50 (2.40 - 8.80)	2900 (500 - 3270)	2.93	3.98 + 6.02	10.00 (2.70 - 11.00)	2940 (500 - 3320)	3.40
	35 + 60	3.13 + 5.37	8.50 (2.40 - 9.10)	2900 (500 - 3270)	2.93	3.64 + 6.36	10.00 (2.70 - 11.40)	2940 (500 - 3320)	3.40
	42 + 42	4.20 + 4.20	8.40 (2.40 - 8.80)	2490 (450 - 3270)	3.37	4.30 + 4.30	8.60 (2.70 - 11.00)	2460 (500 - 3200)	3.50
	42 + 50	3.88 + 4.62	8.50 (2.40 - 8.80)	2900 (450 - 3270)	2.93	4.30 + 5.20	9.50 (2.70 - 11.00)	2940 (500 - 3200)	3.23
	42 + 60	3.50 + 5.00	8.50 (2.40 - 9.10)	2900 (450 - 3420)	2.93	3.98 + 6.02	10.00 (2.70 - 11.40)	2940 (500 - 3200)	3.40
	50 + 50	4.25 + 4.25	8.50 (2.40 - 9.20)	2900 (450 - 3460)	2.93	5.00 + 5.00	10.00 (2.70 - 11.40)	2940 (500 - 3200)	3.40
	50 + 60	3.86 + 4.64	8.50 (2.40 - 9.60)	2900 (450 - 3570)	2.93	4.44 + 5.56	10.00 (2.70 - 11.60)	2940 (500 - 3200)	3.40
	60 + 60	4.25 + 4.25	8.50 (2.40 - 9.90)	2900 (450 - 3870)	2.93	5.00 + 5.00	10.00 (2.70 - 12.10)	2940 (500 - 3200)	3.40

* Note: this refers to the performance with only one unit in operation. However, at least 2 units must be connected to the outside unit.

Pipe lengths

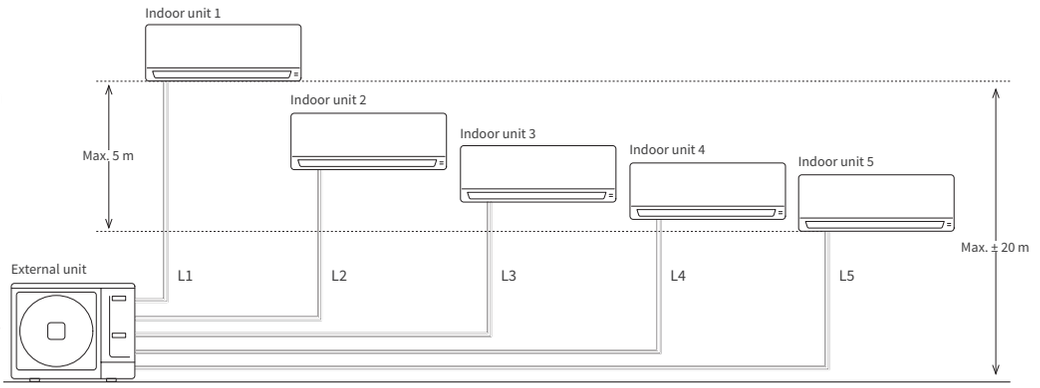
RAM-90NP5E

L1 + L2 + L3 + L4 + L5 = Max. 75 m;
L1 < 25 m; L2 < 25 m;
L3 < 25 m; L4 < 25 m; L5 < 25 m

The max. level difference between 2 indoor units is 5m.

Pre-charged for 30 m. Beyond 30 m, allow an additional 15 g/m.

Always connect the most powerful indoor unit to the lowest connector. Connection 3 is intended for indoor units 18, 25 or 35, otherwise you need a 3/8-to-1/2 adapter.



RAM - 90NP5E		COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
3 units	15 + 15 + 15	1.50 + 1.50 + 1.50	4.50 (2.70 - 5.00)	1250 (510 - 1500)	3.60	2.00 + 2.00 + 2.00	6.00 (2.90 - 6.50)	1540 (520 - 1848)	3.90
	15 + 15 + 18	1.50 + 1.50 + 1.80	4.80 (2.70 - 5.30)	1350 (510 - 1620)	3.56	2.00 + 2.00 + 2.50	6.50 (2.90 - 7.00)	1800 (520 - 2160)	3.61
	15 + 15 + 25	1.50 + 1.50 + 2.50	5.50 (2.70 - 6.00)	1490 (510 - 1788)	3.69	2.00 + 2.00 + 3.40	7.40 (2.90 - 7.90)	2010 (520 - 2412)	3.68
	15 + 15 + 35	1.50 + 1.50 + 3.50	6.50 (2.70 - 7.00)	2100 (510 - 2678)	3.10	2.00 + 2.00 + 4.30	8.30 (2.90 - 8.80)	2420 (520 - 2904)	3.43
	15 + 15 + 42	1.50 + 1.50 + 4.20	7.20 (2.70 - 8.50)	2150 (510 - 2676)	3.35	2.00 + 2.00 + 5.20	9.20 (2.90 - 11.00)	2180 (520 - 1848)	4.22
	15 + 15 + 50	1.50 + 1.50 + 5.00	8.00 (2.70 - 8.50)	2230 (510 - 2676)	3.59	1.90 + 1.90 + 6.19	10.00 (2.90 - 11.00)	2730 (520 - 1848)	3.66
	15 + 15 + 60	1.42 + 1.42 + 5.67	8.50 (2.70 - 8.50)	2230 (510 - 2676)	3.81	1.74 + 1.74 + 6.52	10.00 (2.90 - 11.50)	2730 (520 - 1848)	3.66
	15 + 18 + 18	1.50 + 1.80 + 1.80	5.10 (2.70 - 5.60)	1350 (510 - 1620)	3.78	2.00 + 2.50 + 2.50	7.00 (2.90 - 7.50)	1880 (520 - 2280)	3.72
	15 + 18 + 25	1.50 + 1.80 + 2.50	5.80 (2.70 - 6.30)	1350 (510 - 1620)	4.30	2.00 + 2.50 + 3.40	7.90 (2.90 - 8.40)	2130 (520 - 2616)	3.71
	15 + 18 + 35	1.50 + 1.80 + 3.50	6.80 (2.70 - 7.30)	1850 (510 - 2844)	3.68	2.00 + 2.50 + 4.30	8.80 (2.90 - 9.30)	2350 (520 - 1848)	3.74
	15 + 18 + 42	1.50 + 1.80 + 4.20	7.50 (2.40 - 7.00)	1950 (510 - 2844)	3.85	2.00 + 2.50 + 5.20	9.70 (2.90 - 11.00)	2350 (520 - 3360)	4.13
	15 + 18 + 50	1.50 + 1.80 + 5.00	8.30 (2.70 - 8.80)	2230 (510 - 2844)	3.72	1.82 + 2.27 + 5.91	10.00 (2.90 - 11.50)	2850 (520 - 3360)	3.51
	15 + 18 + 60	1.37 + 1.65 + 5.48	8.50 (2.70 - 8.80)	2230 (510 - 2844)	3.81	1.67 + 2.08 + 6.25	10.00 (2.90 - 11.50)	2850 (520 - 3360)	3.51
	15 + 25 + 25	1.50 + 2.50 + 2.50	6.50 (2.70 - 7.00)	1800 (510 - 2520)	3.61	2.00 + 3.40 + 3.40	8.80 (2.90 - 9.30)	2350 (520 - 1848)	3.74
	15 + 25 + 35	1.50 + 2.50 + 3.50	7.50 (2.40 - 7.00)	2100 (510 - 3096)	3.57	2.00 + 3.40 + 4.30	9.70 (2.90 - 10.20)	2620 (520 - 1848)	3.70
	15 + 25 + 42	1.50 + 2.50 + 4.20	8.20 (2.70 - 9.50)	2200 (510 - 3360)	3.73	1.89 + 3.21 + 4.91	10.00 (2.70 - 11.00)	2620 (520 - 1848)	3.82
	15 + 25 + 50	1.42 + 2.36 + 4.72	8.50 (2.70 - 9.50)	2680 (510 - 3360)	3.17	1.68 + 2.86 + 5.46	10.00 (2.70 - 11.50)	2890 (520 - 3360)	3.46
	15 + 25 + 60	1.28 + 2.13 + 5.10	8.50 (2.70 - 9.50)	2680 (510 - 3360)	3.17	1.55 + 2.64 + 5.81	10.00 (2.70 - 11.50)	2890 (520 - 3360)	3.46
	15 + 35 + 35	1.50 + 3.50 + 3.50	8.50 (2.70 - 9.00)	2560 (510 - 3360)	3.32	1.89 + 4.06 + 4.06	10.00 (2.90 - 11.10)	2990 (520 - 3360)	3.34
	15 + 35 + 42	1.39 + 3.23 + 3.88	8.50 (2.70 - 9.50)	2560 (510 - 3216)	3.32	1.74 + 3.74 + 4.52	10.00 (2.90 - 11.10)	2990 (520 - 3360)	3.34
	15 + 35 + 50	1.28 + 2.98 + 4.25	8.50 (2.70 - 9.50)	2740 (510 - 3216)	3.10	1.56 + 3.36 + 5.08	10.00 (2.90 - 11.50)	2890 (520 - 3360)	3.46
	15 + 35 + 60	1.16 + 2.70 + 4.64	8.50 (2.70 - 9.50)	2740 (510 - 3216)	3.10	1.45 + 3.12 + 5.43	10.00 (2.90 - 11.50)	2890 (520 - 3360)	3.46
	15 + 42 + 42	1.29 + 3.61 + 3.61	8.50 (2.70 - 9.50)	2560 (510 - 3216)	3.32	1.61 + 4.19 + 4.19	10.00 (2.90 - 11.10)	2990 (520 - 3360)	3.34
	15 + 42 + 50	1.19 + 3.34 + 3.97	8.50 (2.70 - 9.50)	2740 (510 - 3216)	3.10	1.46 + 3.80 + 4.74	10.00 (2.90 - 11.50)	2890 (520 - 3360)	3.46
	15 + 42 + 60	1.09 + 3.05 + 4.36	8.50 (2.70 - 9.50)	2740 (510 - 3216)	3.10	1.36 + 3.54 + 5.10	10.00 (2.90 - 11.50)	2890 (520 - 3360)	3.46
	15 + 50 + 50	1.11 + 3.70 + 3.70	8.50 (2.70 - 9.50)	2740 (510 - 3216)	3.10	1.33 + 4.33 + 4.33	10.00 (2.90 - 11.50)	2890 (520 - 3360)	3.46
	15 + 50 + 60	1.02 + 3.40 + 4.08	8.50 (2.70 - 9.50)	2740 (510 - 3216)	3.10	1.25 + 4.06 + 4.69	10.00 (2.90 - 11.50)	2890 (520 - 3360)	3.46
	15 + 60 + 60	0.94 + 3.78 + 3.78	8.50 (2.70 - 9.50)	2740 (510 - 3288)	3.10	1.18 + 4.41 + 4.41	10.00 (2.90 - 11.50)	2890 (520 - 3360)	3.46
	18 + 18 + 18	1.80 + 1.80 + 1.80	5.40 (2.70 - 5.90)	1480 (510 - 1780)	3.65	2.50 + 2.50 + 2.50	7.50 (2.90 - 9.10)	2020 (520 - 2440)	3.71
	18 + 18 + 25	1.80 + 1.80 + 2.50	6.10 (2.70 - 6.70)	1780 (510 - 2150)	3.43	2.50 + 2.50 + 3.40	8.40 (2.90 - 9.50)	2210 (520 - 2620)	3.80
	18 + 18 + 35	1.80 + 1.80 + 3.50	7.10 (2.70 - 7.80)	1910 (510 - 2310)	3.72	2.50 + 2.50 + 4.29	9.30 (2.90 - 10.20)	2370 (520 - 2740)	3.92
	18 + 18 + 42	1.80 + 1.80 + 4.20	7.80 (2.70 - 7.80)	1910 (510 - 3260)	4.08	2.45 + 2.45 + 5.09	10.00 (2.90 - 10.20)	2370 (520 - 3060)	4.22
	18 + 18 + 50	1.78 + 1.78 + 4.94	8.50 (2.70 - 9.50)	2650 (510 - 3260)	3.21	2.17 + 2.17 + 5.64	10.00 (2.90 - 11.30)	2730 (520 - 3060)	3.66
	18 + 18 + 60	1.59 + 1.59 + 5.31	8.50 (2.70 - 9.90)	2650 (510 - 3270)	3.21	2.00 + 2.00 + 5.99	10.00 (2.90 - 11.60)	2730 (520 - 3060)	3.66
	18 + 25 + 25	1.80 + 2.50 + 2.50	6.80 (2.70 - 7.50)	1860 (510 - 2260)	3.66	2.49 + 3.41 + 3.41	9.30 (2.90 - 10.00)	2370 (520 - 2760)	3.92
	18 + 25 + 35	1.80 + 2.50 + 3.50	7.80 (2.7 - 8.6)	2190 (510 - 2660)	3.56	2.45 + 3.33 + 4.22	10.00 (2.90 - 10.70)	2530 (520 - 2880)	3.95
	18 + 25 + 42	1.80 + 2.50 + 4.20	8.50 (2.7 - 8.6)	2190 (510 - 3270)	3.88	2.25 + 3.06 + 4.68	10.00 (2.90 - 11.00)	2530 (520 - 3220)	3.95
	18 + 25 + 50	1.66 + 2.26 + 4.58	8.50 (2.70 - 9.90)	2550 (510 - 3270)	3.33	2.02 + 2.74 + 5.24	10.00 (2.90 - 11.60)	2890 (520 - 3220)	3.46
	18 + 25 + 60	1.50 + 2.04 + 4.96	8.50 (2.70 - 9.90)	2550 (510 - 3320)	3.33	1.87 + 2.54 + 5.60	10.00 (2.90 - 11.60)	2890 (520 - 3220)	3.46
	18 + 35 + 35	1.74 + 3.38 + 3.38	8.50 (2.70 - 9.70)	2600 (510 - 3260)	3.27	2.25 + 3.87 + 3.87	10.00 (2.90 - 11.60)	2750 (520 - 3060)	3.64
	18 + 35 + 42	1.61 + 3.13 + 3.76	8.50 (2.70 - 9.70)	2600 (510 - 3320)	3.27	2.08 + 3.58 + 4.33	10.00 (2.90 - 11.60)	2750 (520 - 3330)	3.64
	18 + 35 + 50	1.47 + 2.88 + 4.16	8.50 (2.70 - 9.90)	2590 (510 - 3320)	3.28	1.88 + 3.23 + 4.90	10.00 (2.90 - 11.60)	2990 (520 - 3330)	3.34
	18 + 35 + 60	1.33 + 2.62 + 4.54	8.50 (2.70 - 9.90)	2590 (510 - 3320)	3.28	1.75 + 3.01 + 5.25	10.00 (2.90 - 11.60)	2990 (520 - 3330)	3.34
	18 + 42 + 42	1.50 + 3.50 + 3.50	8.50 (2.70 - 9.90)	2600 (510 - 3320)	3.27	2.25 + 3.87 + 3.87	10.00 (2.90 - 11.60)	2750 (520 - 3330)	3.64
	18 + 42 + 50	1.37 + 3.24 + 3.89	8.50 (2.70 - 9.90)	2590 (510 - 3320)	3.28	2.08 + 3.58 + 4.34	10.00 (2.90 - 11.60)	2990 (520 - 3330)	3.34
	18 + 42 + 60	1.26 + 2.97 + 4.28	8.50 (2.70 - 9.90)	2590 (510 - 3320)	3.28	1.88 + 3.23 + 4.90	10.00 (2.90 - 11.60)	2990 (520 - 3330)	3.34
	18 + 50 + 50	1.31 + 3.60 + 3.60	8.50 (2.70 - 9.90)	2590 (510 - 3320)	3.28	1.52 + 3.94 + 4.55	10.00 (2.90 - 11.60)	2990 (520 - 3330)	3.34
	18 + 50 + 60	1.21 + 3.32 + 3.98	8.50 (2.70 - 9.90)	2590 (510 - 3280)	3.28	1.94 + 4.03 + 4.03	10.00 (2.90 - 11.70)	2990 (520 - 3330)	3.34
	18 + 60 + 60	1.12 + 3.70 + 3.70	8.50 (2.70 - 9.90)	2590 (510 - 3320)	3.28	1.76 + 3.66 + 4.58	10.00 (2.90 - 12.10)	2990 (520 - 3330)	3.34
	25 + 25 + 25	2.50 + 2.50 + 2.50	7.50 (2.40 - 7.00)	2120 (510 - 2580)	3.54	3.33 + 3.33 + 3.33	10.00 (2.90 - 10.40)	2540 (520 - 2920)	3.94
	25 + 25 + 35	2.50 + 2.50 + 3.50	8.50 (2.70 - 9.4)	2560 (510 - 3110)	3.32	3.06 + 3.06 + 3.87	10.00 (2.90 - 11.20)	2730 (520 - 3070)	3.66
	25 + 25 + 42	2.31 + 2.31 + 3.88	8.50 (2.70 - 9.4)	2560 (510 - 3360)	3.32	2.83 + 2.83 + 4.33	10.00 (2.90 - 11.60)	2730 (520 - 3330)	3.66
	25 + 25 + 50	2.13 + 2.13 + 4.25	8.50 (2.70 - 9.90)	2620 (510 - 3360)	3.24	2.56 + 2.56 + 4.89	10.00 (2.90 - 11.60)	2990 (520 - 3330)	3.34
	25 + 25 + 60	1.93 + 1.93 + 4.64	8.50 (2.70 - 9.90)	2620 (510 - 3360)	3.24	2.38 + 2.38 + 5.24	10.00 (2.90 - 11.60)	2990 (520 - 3330)	3.34
	25 + 35 + 35	2.23 + 3.13 + 3.13	8.50 (2.70 - 9.90)	2600 (510 - 3330)	3.27	2.83 + 3.58 + 3.58	10.00 (2.90 - 11.60)	2890 (520 - 3220)	3.46
	25 + 35 + 42	2.07 + 2.92 + 3.50	8.50 (2.70 - 9.90)	2600 (510 - 3350)	3.27	2.64 + 3.33 + 4.03	10.00 (2.90 - 11.60)	2890 (520 - 3330)	3.46
	25 + 35 + 50	1.93 + 2.69 + 3.87	8.50 (2.70 - 9.90)	2620 (510 - 3350)	3.24	2.39 + 3.02 + 4.59	10.00 (2.90 - 11.60)	2990 (520 - 3330)	3.34

Indoor unit combinations

Standard multi-split

RAM - 90NP5E		COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
3 units	25 + 35 + 60	1.77 + 2.47 + 4.26	8.50 (2.70 - 9.90)	2620 (510 - 3350)	3.24	2.24 + 2.82 + 4.94	10.00 (2.90 - 11.70)	2990 (520 - 3330)	3.34
	25 + 42 + 42	1.94 + 3.28 + 3.28	8.50 (2.70 - 9.90)	2600 (510 - 3360)	3.27	2.83 + 3.58 + 3.58	10.00 (2.90 - 11.70)	2890 (520 - 3330)	3.46
	25 + 42 + 50	1.82 + 3.04 + 3.64	8.50 (2.70 - 9.90)	2620 (510 - 3360)	3.24	2.64 + 3.32 + 4.04	10.00 (2.90 - 11.60)	2990 (520 - 3330)	3.34
	25 + 42 + 60	1.67 + 2.80 + 4.03	8.50 (2.70 - 9.90)	2620 (510 - 3360)	3.24	2.39 + 3.02 + 4.59	10.00 (2.90 - 11.70)	2990 (520 - 3330)	3.34
	25 + 50 + 50	1.70 + 3.40 + 3.40	8.50 (2.70 - 9.90)	2620 (510 - 3360)	3.24	1.95 + 3.74 + 4.31	10.00 (2.90 - 11.70)	2990 (520 - 3330)	3.34
	25 + 50 + 60	1.57 + 3.15 + 3.78	8.50 (2.70 - 9.90)	2620 (510 - 3360)	3.24	2.46 + 3.77 + 3.77	10.00 (2.90 - 11.70)	2990 (520 - 3330)	3.34
	25 + 60 + 60	1.47 + 3.52 + 3.52	8.50 (2.70 - 9.90)	2620 (510 - 3350)	3.24	2.25 + 3.44 + 4.30	10.00 (2.90 - 12.10)	2990 (520 - 3330)	3.34
	35 + 35 + 35	2.83 + 2.83 + 2.83	8.50 (2.70 - 9.90)	2600 (510 - 3320)	3.27	3.33 + 3.33 + 3.33	10.00 (2.90 - 11.60)	2990 (520 - 3330)	3.34
	35 + 35 + 42	2.66 + 2.66 + 3.19	8.50 (2.70 - 9.90)	2600 (510 - 3360)	3.27	3.12 + 3.12 + 3.77	10.00 (2.90 - 11.70)	2990 (520 - 3330)	3.34
	35 + 35 + 50	2.50 + 2.50 + 3.49	8.50 (2.70 - 9.90)	2620 (510 - 3360)	3.24	2.85 + 2.87 + 4.25	10.00 (2.90 - 11.70)	2990 (520 - 3330)	3.34
	35 + 35 + 60	2.31 + 2.31 + 3.87	8.50 (2.70 - 9.90)	2620 (510 - 3360)	3.24	2.67 + 2.69 + 4.61	10.00 (2.90 - 11.70)	2990 (520 - 3330)	3.34
	35 + 42 + 42	2.50 + 3.00 + 3.00	8.50 (2.70 - 9.90)	2600 (510 - 3360)	3.27	2.93 + 3.54 + 3.54	10.00 (2.90 - 11.70)	2990 (520 - 3330)	3.34
	35 + 42 + 50	2.36 + 2.83 + 3.30	8.50 (2.70 - 9.90)	2620 (510 - 3360)	3.24	2.69 + 3.27 + 4.01	10.00 (2.90 - 11.70)	2990 (520 - 3330)	3.34
	35 + 42 + 60	2.19 + 2.63 + 3.67	8.50 (2.70 - 9.90)	2620 (510 - 3360)	3.24	2.53 + 3.08 + 4.36	10.00 (2.90 - 11.70)	2990 (520 - 3330)	3.34
	35 + 50 + 50	2.17 + 3.17 + 3.17	8.50 (2.70 - 9.90)	2620 (510 - 3360)	3.24	2.49 + 3.78 + 3.78	10.00 (2.90 - 12.10)	2990 (520 - 3330)	3.34
	35 + 50 + 60	2.02 + 2.95 + 3.54	8.50 (2.70 - 9.90)	2620 (510 - 3450)	3.24	2.35 + 3.57 + 4.12	10.00 (2.90 - 12.10)	2990 (520 - 3330)	3.34
	35 + 60 + 60	1.89 + 3.31 + 3.31	8.50 (2.70 - 9.90)	2620 (510 - 3450)	3.24	2.23 + 3.91 + 3.91	10.00 (2.90 - 12.10)	2990 (520 - 3330)	3.34
	42 + 42 + 42	2.80 + 2.85 + 2.85	8.50 (2.70 - 9.90)	2620 (510 - 3450)	3.24	3.33 + 3.35 + 3.35	10.00 (2.90 - 12.10)	2990 (520 - 3180)	3.34
	42 + 42 + 50	2.63 + 2.68 + 3.19	8.50 (2.70 - 9.90)	2620 (510 - 3450)	3.24	3.08 + 3.10 + 3.87	10.00 (2.90 - 12.10)	2990 (520 - 3180)	3.34
	42 + 42 + 60	2.45 + 2.50 + 3.56	8.50 (2.70 - 9.90)	2620 (510 - 3450)	3.24	2.91 + 2.93 + 4.21	10.00 (2.90 - 12.10)	2990 (520 - 3180)	3.34
	42 + 50 + 50	2.48 + 3.01 + 3.01	8.50 (2.70 - 9.90)	2620 (510 - 3450)	3.24	2.91 + 2.93 + 4.21	10.00 (2.90 - 12.10)	2990 (520 - 3180)	3.34
	42 + 50 + 60	2.32 + 2.82 + 3.38	8.50 (2.70 - 9.90)	2620 (510 - 3450)	3.24	2.91 + 2.93 + 4.21	10.00 (2.90 - 12.10)	2990 (520 - 3180)	3.34
	50 + 50 + 50	2.83 + 2.83 + 2.83	8.50 (2.70 - 9.90)	2690 (510 - 3450)	3.16	3.33 + 3.33 + 3.33	10.00 (2.90 - 12.10)	2890 (520 - 3180)	3.46
4 units	15 + 15 + 15 + 15	1.50 + 1.50 + 1.50 + 1.50	6.00 (2.90 - 6.50)	1580 (550 - 1620)	3.80	2.00 + 2.00 + 2.00 + 2.00	8.00 (3.00 - 8.50)	2000 (540 - 2652)	4.00
	15 + 15 + 15 + 18	1.50 + 1.50 + 1.50 + 1.80	6.30 (2.90 - 6.50)	1630 (550 - 1776)	3.87	2.00 + 2.00 + 2.00 + 2.50	8.50 (3.00 - 9.00)	2200 (540 - 2760)	3.86
	15 + 15 + 15 + 25	1.50 + 1.50 + 1.50 + 2.50	7.00 (2.90 - 7.50)	1780 (550 - 2136)	3.93	2.00 + 2.00 + 2.00 + 3.40	9.40 (3.00 - 9.90)	2390 (540 - 3036)	3.93
	15 + 15 + 15 + 35	1.50 + 1.50 + 1.50 + 3.50	8.00 (2.90 - 8.50)	2500 (550 - 3180)	3.20	1.94 + 1.94 + 1.94 + 4.17	10.00 (3.00 - 10.80)	2550 (540 - 3468)	3.92
	15 + 15 + 15 + 42	1.47 + 1.47 + 1.47 + 4.10	8.50 (2.90 - 8.50)	2600 (550 - 3180)	3.27	1.79 + 1.79 + 1.79 + 4.64	10.00 (3.00 - 11.50)	2550 (540 - 3360)	3.92
	15 + 15 + 15 + 50	1.34 + 1.34 + 1.34 + 4.47	8.50 (2.90 - 8.50)	2650 (550 - 3180)	3.21	1.60 + 1.60 + 1.60 + 5.20	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 15 + 15 + 60	1.21 + 1.21 + 1.21 + 4.86	8.50 (2.90 - 8.50)	2650 (550 - 3180)	3.21	1.48 + 1.48 + 1.48 + 5.56	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 15 + 18 + 18	1.50 + 1.50 + 1.80 + 1.80	6.60 (2.90 - 7.10)	1750 (550 - 2100)	3.77	2.00 + 2.00 + 2.50 + 2.50	9.00 (3.00 - 9.50)	2380 (540 - 3048)	3.78
	15 + 15 + 18 + 25	1.50 + 1.50 + 1.80 + 2.50	7.30 (2.90 - 7.80)	1850 (550 - 2220	3.95	2.00 + 2.00 + 2.50 + 3.40	9.90 (3.00 - 10.40)	2530 (540 - 3144)	3.91
	15 + 15 + 18 + 35	1.50 + 1.50 + 1.80 + 3.50	8.30 (2.90 - 8.80)	2180 (550 - 2616)	3.81	1.85 + 1.85 + 2.31 + 3.98	10.00 (3.00 - 11.30)	2480 (540 - 3468)	4.03
	15 + 15 + 18 + 42	1.42 + 1.42 + 1.70 + 3.97	8.50 (2.90 - 8.50)	2350 (550 - 3120)	3.62	1.71 + 1.71 + 2.14 + 4.44	10.00 (3.00 - 11.30)	2480 (540 - 3360)	4.03
	15 + 15 + 18 + 50	1.30 + 1.30 + 1.56 + 4.34	8.50 (2.90 - 8.50)	2600 (550 - 3120)	3.27	1.54 + 1.54 + 1.92 + 5.00	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 15 + 18 + 60	1.18 + 1.18 + 1.42 + 4.72	8.50 (2.90 - 8.50)	2600 (550 - 3120)	3.27	1.43 + 1.43 + 1.79 + 5.36	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 15 + 25 + 25	1.50 + 1.50 + 2.50 + 2.50	8.00 (2.90 - 8.50)	2150 (550 - 2580)	3.72	1.85 + 1.85 + 3.15 + 3.15	10.00 (3.00 - 11.30)	2480 (540 - 3420)	4.03
	15 + 15 + 25 + 35	1.42 + 1.42 + 2.36 + 3.31	8.50 (2.90 - 8.50)	2600 (550 - 3120)	3.27	1.71 + 1.71 + 2.91 + 3.68	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 15 + 25 + 42	1.31 + 1.31 + 2.19 + 3.68	8.50 (2.90 - 8.50)	2600 (550 - 3120)	3.27	1.59 + 1.59 + 2.70 + 4.13	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 15 + 25 + 50	1.21 + 1.21 + 2.02 + 4.05	8.50 (2.90 - 8.50)	2600 (550 - 3120)	3.27	1.44 + 1.44 + 2.45 + 4.68	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 15 + 25 + 60	1.11 + 1.11 + 1.85 + 4.43	8.50 (2.90 - 8.50)	2600 (550 - 3120)	3.27	1.34 + 1.34 + 2.28 + 5.03	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 15 + 35 + 35	1.28 + 1.28 + 2.98 + 2.98	8.50 (2.90 - 8.50)	2600 (550 - 3120)	3.27	1.59 + 1.59 + 3.41 + 3.41	10.00 (3.00 - 11.30)	2890 (540 - 3480)	3.46
	15 + 15 + 35 + 42	1.19 + 1.19 + 2.78 + 3.34	8.50 (2.90 - 8.50)	2600 (550 - 3210)	3.27	1.48 + 1.48 + 3.19 + 3.85	10.00 (3.00 - 11.30)	2890 (540 - 3360)	3.46
	15 + 15 + 35 + 50	1.11 + 1.11 + 2.59 + 3.70	8.50 (2.90 - 8.50)	2600 (550 - 3210)	3.27	1.35 + 1.35 + 2.91 + 4.39	10.00 (3.00 - 11.30)	2890 (540 - 3360)	3.46
	15 + 15 + 35 + 60	1.02 + 1.02 + 2.38 + 4.08	8.50 (2.90 - 8.50)	2600 (550 - 3210)	3.27	1.27 + 1.27 + 2.72 + 4.75	10.00 (3.00 - 11.30)	2890 (540 - 3360)	3.46
	15 + 15 + 42 + 42	1.12 + 1.12 + 3.13 + 3.13	8.50 (2.90 - 8.50)	2600 (550 - 3120)	3.27	1.59 + 1.59 + 3.41 + 3.41	10.00 (3.00 - 11.30)	2890 (540 - 3360)	3.46
	15 + 15 + 42 + 50	1.05 + 1.05 + 2.93 + 3.48	8.50 (2.90 - 8.50)	2600 (550 - 3210)	3.27	1.48 + 1.48 + 3.19 + 3.85	10.00 (3.00 - 11.30)	2890 (540 - 3360)	3.46
	15 + 15 + 42 + 60	0.97 + 0.97 + 2.70 + 3.86	8.50 (2.9 - 8.50)	2600 (550 - 3210)	3.27	1.35 + 1.35 + 2.91 + 4.39	10.00 (3.00 - 11.30)	2890 (540 - 3360)	3.46
	15 + 15 + 50 + 50	0.98 + 0.98 + 3.27 + 3.27	8.50 (2.50 - 8.50)	2600 (550 - 3210)	3.27	1.39 + 1.39 + 3.61 + 3.61	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 15 + 50 + 60	0.91 + 0.91 + 3.04 + 3.64	8.50 (2.50 - 8.50)	2600 (550 - 3210)	3.27	1.27 + 1.27 + 3.31 + 4.14	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 15 + 60 + 60	0.85 + 0.85 + 3.40 + 3.40	8.50 (2.50 - 8.50)	2600 (550 - 3210)	3.27	1.27 + 1.27 + 3.31 + 4.14	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 18 + 18 + 18	1.50 + 1.80 + 1.80 + 1.80	6.90 (2.50 - 7.40)	2140 (550 - 2244)	3.22	2.00 + 2.50 + 2.50 + 2.50	9.50 (3.00 - 10.0)	2750 (540 - 3144)	3.45
	15 + 18 + 18 + 25	1.50 + 1.80 + 1.80 + 2.50	7.60 (2.50 - 8.10)	2140 (550 - 2568)	3.55	1.92 + 2.40 + 2.40 + 3.27	10.00 (3.00 - 10.90)	2750 (540 - 3468)	3.64
	15 + 18 + 18 + 35	1.48 + 1.78 + 1.78 + 3.46	8.50 (2.50 - 8.50)	2140 (550 - 3060)	3.97	1.77 + 2.21 + 2.21 + 3.81	10.00 (3.00 - 11.50)	2750 (540 - 3360)	3.64

RAM - 90NP5E		COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
4 units	15 + 18 + 18 + 42	1.37 + 1.65 + 1.65 + 3.84	8.50 (2.50 - 8.50)	2550 (550 - 3120)	3.33	1.64 + 2.05 + 2.05 + 4.26	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 18 + 18 + 50	1.26 + 1.51 + 1.51 + 4.21	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.48 + 1.85 + 1.85 + 4.81	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 18 + 18 + 60	1.15 + 1.38 + 1.38 + 4.59	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.38 + 1.72 + 1.72 + 5.17	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 18 + 25 + 25	1.50 + 1.80 + 2.50 + 2.50	8.30 (2.50 - 8.3)	2740 (550 - 3288)	3.03	1.77 + 2.21 + 3.01 + 3.01	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 18 + 25 + 35	1.37 + 1.65 + 2.28 + 3.20	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.64 + 2.05 + 2.79 + 3.52	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 18 + 25 + 42	1.28 + 1.53 + 2.13 + 3.57	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.53 + 1.91 + 2.60 + 3.97	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 18 + 25 + 50	1.18 + 1.42 + 1.97 + 3.94	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.39 + 1.74 + 2.36 + 4.51	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 18 + 25 + 60	1.08 + 1.30 + 1.80 + 4.32	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.30 + 1.62 + 2.21 + 4.87	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 18 + 35 + 35	1.24 + 1.49 + 2.89 + 2.89	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.53 + 1.91 + 3.28 + 3.28	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 18 + 35 + 42	1.16 + 1.39 + 2.70 + 3.25	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.43 + 1.79 + 3.07 + 3.71	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 18 + 35 + 50	1.08 + 1.30 + 2.52 + 3.60	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.31 + 1.63 + 2.81 + 4.25	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 18 + 35 + 60	1.00 + 1.20 + 2.32 + 3.98	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.23 + 1.53 + 2.64 + 4.60	10.00 (3.00 - 11.30)	2890 (540 - 3360)	3.46
	15 + 18 + 42 + 42	1.09 + 1.31 + 3.05 + 3.05	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.53 + 1.91 + 3.28 + 3.28	10.00 (3.00 - 10.50)	2800 (540 - 3360)	3.57
	15 + 18 + 42 + 50	1.02 + 1.22 + 2.86 + 3.40	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.43 + 1.79 + 3.07 + 3.71	10.00 (3.00 - 10.50)	2800 (540 - 3360)	3.57
	15 + 18 + 42 + 60	0.94 + 1.13 + 2.64 + 3.78	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.31 + 1.63 + 2.81 + 4.25	10.00 (3.00 - 10.50)	2800 (540 - 3360)	3.57
	15 + 18 + 50 + 50	0.96 + 1.15 + 3.20 + 3.20	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.34 + 1.68 + 3.49 + 3.49	10.00 (3.00 - 10.50)	#N/A	#N/A
	15 + 18 + 50 + 60	0.89 + 1.07 + 2.97 + 3.57	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.23 + 1.54 + 3.21 + 4.01	10.00 (3.00 - 10.50)	2800 (540 - 3360)	3.57
	15 + 18 + 60 + 60	0.83 + 1.00 + 3.33 + 3.33	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.14 + 1.43 + 3.71 + 3.71	10.00 (3.00 - 10.50)	2800 (540 - 3360)	3.57
	15 + 25 + 25 + 25	1.42 + 2.36 + 2.36 + 2.36	8.50 (2.50 - 8.50)	2600 (550 - 3132)	3.27	1.64 + 2.79 + 2.79 + 2.79	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 25 + 25 + 35	1.28 + 2.13 + 2.13 + 2.98	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.53 + 2.60 + 2.60 + 3.28	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 25 + 25 + 42	1.19 + 1.99 + 1.99 + 3.34	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.43 + 2.43 + 2.43 + 3.71	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 25 + 25 + 50	1.11 + 1.85 + 1.85 + 3.70	8.50 concrete pipe (TBA)	2600 (550 - 3120)	3.27	1.31 + 2.22 + 2.22 + 4.25	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 25 + 25 + 60	1.02 + 1.70 + 1.70 + 4.08	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.23 + 2.09 + 2.09 + 4.60	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 25 + 35 + 35	1.16 + 1.93 + 2.70 + 2.70	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.43 + 2.43 + 3.07 + 3.07	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 25 + 35 + 42	1.09 + 1.82 + 2.54 + 3.05	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.34 + 2.28 + 2.89 + 3.49	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 25 + 35 + 50	1.02 + 1.70 + 2.38 + 3.40	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.23 + 2.10 + 2.65 + 4.01	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 25 + 35 + 60	0.94 + 1.57 + 2.20 + 3.78	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.16 + 1.98 + 2.50 + 4.36	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 25 + 42 + 42	1.03 + 1.71 + 2.88 + 2.88	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.27 + 2.15 + 3.29 + 3.29	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 25 + 42 + 50	0.97 + 1.61 + 2.70 + 3.22	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.17 + 1.99 + 3.04 + 3.80	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 25 + 42 + 60	0.90 + 1.50 + 2.51 + 3.59	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.10 + 1.88 + 2.87 + 4.14	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 25 + 50 + 50	0.91 + 1.52 + 3.04 + 3.04	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.09 + 1.85 + 3.53 + 3.53	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 25 + 50 + 60	0.85 + 1.42 + 2.83 + 3.40	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.03 + 1.75 + 3.35 + 3.87	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 35 + 35 + 35	1.06 + 2.48 + 2.48 + 2.48	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.34 + 2.89 + 2.89 + 2.89	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 35 + 35 + 42	1.00 + 2.34 + 2.34 + 2.81	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.27 + 2.72 + 2.72 + 3.29	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 35 + 35 + 50	0.94 + 2.20 + 2.20 + 3.15	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.17 + 2.51 + 2.51 + 3.80	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 35 + 35 + 60	0.88 + 2.05 + 2.05 + 3.52	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.10 + 2.38 + 2.38 + 4.14	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 35 + 42 + 42	0.95 + 2.22 + 2.66 + 2.66	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.20 + 2.57 + 3.11 + 3.11	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 35 + 42 + 50	0.90 + 2.10 + 2.51 + 2.99	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.11 + 2.39 + 2.89 + 3.61	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 35 + 42 + 60	0.84 + 1.96 + 2.35 + 3.36	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.05 + 2.26 + 2.74 + 3.95	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 35 + 50 + 50	0.85 + 1.98 + 2.83 + 2.83	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.04 + 2.23 + 3.37 + 3.37	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 42 + 42 + 42	0.90 + 2.53 + 2.53 + 2.53	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.14 + 2.95 + 2.95 + 2.95	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	15 + 42 + 42 + 50	0.86 + 2.40 + 2.40 + 2.85	8.50 (2.50 - 8.50)	2600 (550 - 3120)	3.27	1.06 + 2.75 + 2.75 + 3.44	10.00 (3.00 - 11.50)	2890 (540 - 3360)	3.46
	18 + 18 + 18 + 18	1.80 + 1.80 + 1.80 + 1.80	7.20 (2.90 - 7.90)	2330 (550 - 2292)	3.09	2.50 + 2.50 + 2.50 + 2.50	10.00 (3.00 - 10.90)	2400 (540 - 2720)	4.17
	18 + 18 + 18 + 25	1.80 + 1.80 + 1.80 + 2.50	7.90 (2.90 - 8.70)	2380 (550 - 3120)	3.32	2.29 + 2.29 + 2.29 + 3.12	10.00 (3.00 - 11.10)	2700 (540 - 3050)	3.70
	18 + 18 + 18 + 35	1.72 + 1.72 + 1.72 + 3.34	8.50 (2.90 - 9.80)	2630 (550 - 3120)	3.23	2.12 + 2.12 + 2.12 + 3.64	10.00 (3.00 - 11.40)	2700 (540 - 3020)	3.70
	18 + 18 + 18 + 42	1.59 + 1.59 + 1.59 + 3.72	8.50 (2.90 - 9.80)	2640 (550 - 3260)	3.22	1.97 + 1.97 + 1.97 + 4.09	10.00 (3.00 - 11.40)	2700 (540 - 3020)	3.70
	18 + 18 + 18 + 50	1.46 + 1.46 + 1.46 + 4.11	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.79 + 1.78 + 1.78 + 4.66	10.00 (3.00 - 11.40)	2700 (540 - 3020)	3.70
	18 + 18 + 18 + 60	1.33 + 1.33 + 1.33 + 4.49	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.67 + 1.66 + 1.66 + 5.02	10.00 (3.00 - 11.40)	2700 (540 - 3020)	3.70
	18 + 18 + 25 + 25	1.78 + 1.78 + 2.47 + 2.47	8.50 (2.90 - 9.50)	2690 (550 - 3040)	3.16	2.12 + 2.12 + 2.88 + 2.88	10.00 (3.00 - 11.20)	2700 (540 - 3020)	3.70
	18 + 18 + 25 + 35	1.59 + 1.59 + 2.21 + 3.10	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.97 + 1.97 + 2.68 + 3.39	10.00 (3.00 - 11.40)	2700 (540 - 3020)	3.70
	18 + 18 + 25 + 42	1.49 + 1.49 + 2.06 + 3.47	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.84 + 1.84 + 2.50 + 3.82	10.00 (3.00 - 11.40)	2700 (540 - 3020)	3.70
	18 + 18 + 25 + 50	1.37 + 1.37 + 1.90 + 3.88	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.68 + 1.67 + 2.27 + 4.41	10.00 (3.00 - 11.40)	2700 (540 - 3020)	3.70
	18 + 18 + 25 + 60	1.25 + 1.25 + 1.75 + 4.26	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.57 + 1.56 + 2.13 + 4.77	10.00 (3.00 - 11.40)	2700 (540 - 3020)	3.70
	18 + 18 + 35 + 35	1.44 + 1.44 + 2.81 + 2.81	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.84 + 1.84 + 3.16 + 3.16	10.00 (3.00 - 11.40)	2700 (540 - 3020)	3.70
	18 + 18 + 35 + 42	1.35 + 1.35 + 2.63 + 3.16	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.72 + 1.72 + 2.97 + 3.59	10.00 (3.00 - 11.40)	2700 (540 - 3020)	3.70
	18 + 18 + 35 + 50	1.27 + 1.27 + 2.46 + 3.49	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.58 + 1.59 + 2.72 + 4.09	10.00 (3.00 - 11.40)	2700 (540 - 3020)	3.70
	18 + 18 + 35 + 60	1.18 + 1.18 + 2.27 + 3.87	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.49 + 1.50 + 2.56 + 4.44	10.00 (3.00 - 11.40)	2700 (540 - 3020)	3.70

Indoor unit combinations

Standard multi-split

RAM - 90NP5E		COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
	18 + 18 + 42 + 42	1.28 + 1.28 + 2.98 + 2.98	8.50 (2.90 - 9.90)	2390 (550 - 3230)	3.56	1.62 + 1.62 + 3.38 + 3.38	10.00 (3.00 - 11.60)	2700 (540 - 3020)	3.70
	18 + 18 + 42 + 50	1.21 + 1.21 + 2.79 + 3.30	8.50 (2.90 - 9.90)	2390 (550 - 3230)	3.56	1.50 + 1.51 + 3.11 + 3.87	10.00 (3.00 - 11.60)	2700 (540 - 3020)	3.70
	18 + 18 + 42 + 60	1.12 + 1.12 + 2.59 + 3.68	8.50 (2.90 - 9.90)	2390 (550 - 3230)	3.56	1.41 + 1.42 + 2.94 + 4.22	10.00 (3.00 - 11.60)	2700 (540 - 3020)	3.70
	18 + 18 + 50 + 50	1.14 + 1.14 + 3.12 + 3.12	8.50 (2.90 - 9.90)	2370 (550 - 3230)	3.59	1.39 + 1.40 + 3.60 + 3.60	10.00 (3.00 - 11.60)	2700 (540 - 3020)	3.70
	18 + 18 + 50 + 60	1.06 + 1.06 + 2.90 + 3.48	8.50 (2.90 - 9.90)	2370 (550 - 3230)	3.59	1.32 + 1.33 + 3.41 + 3.94	10.00 (3.00 - 12.10)	2700 (540 - 3020)	3.70
	18 + 25 + 25 + 25	1.68 + 2.28 + 2.28 + 2.28	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.97 + 2.70 + 2.70 + 2.62	10.00 (3.00 - 11.40)	2700 (540 - 3020)	3.70
	18 + 25 + 25 + 35	1.52 + 2.08 + 2.08 + 2.83	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.84 + 2.52 + 2.52 + 3.10	10.00 (3.00 - 11.40)	2700 (540 - 3020)	3.70
	18 + 25 + 25 + 42	1.42 + 1.92 + 1.92 + 3.24	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.72 + 2.33 + 2.33 + 3.58	10.00 (3.00 - 11.40)	2700 (540 - 3020)	3.70
	18 + 25 + 25 + 50	1.33 + 1.79 + 1.79 + 3.59	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.58 + 2.14 + 2.14 + 4.10	10.00 (3.00 - 11.40)	2700 (540 - 3020)	3.70
	18 + 25 + 25 + 60	1.23 + 1.65 + 1.65 + 3.97	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.49 + 2.01 + 2.01 + 4.45	10.00 (3.00 - 11.40)	2700 (540 - 3020)	3.70
	18 + 25 + 35 + 35	1.32 + 1.89 + 2.64 + 2.64	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.72 + 2.35 + 2.98 + 2.98	10.00 (3.00 - 11.40)	2700 (540 - 3020)	3.70
	18 + 25 + 35 + 42	1.25 + 1.78 + 2.49 + 2.99	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.62 + 2.22 + 2.80 + 3.39	10.00 (3.00 - 11.40)	2700 (540 - 3020)	3.70
	18 + 25 + 35 + 50	1.23 + 1.65 + 2.31 + 3.30	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.50 + 2.03 + 2.56 + 3.87	10.00 (3.00 - 11.40)	2700 (540 - 3020)	3.70
	18 + 25 + 35 + 60	1.14 + 1.53 + 2.15 + 3.68	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.41 + 1.91 + 2.42 + 4.22	10.00 (3.00 - 11.40)	2700 (540 - 3020)	3.70
	18 + 25 + 42 + 42	1.22 + 1.65 + 2.81 + 2.81	8.50 (2.90 - 9.90)	2370 (550 - 3230)	3.59	1.53 + 2.07 + 3.19 + 3.19	10.00 (3.00 - 12.10)	2630 (540 - 2890)	3.80
	18 + 25 + 42 + 50	1.15 + 1.55 + 2.64 + 3.15	8.50 (2.90 - 9.90)	2370 (550 - 3230)	3.59	1.42 + 1.91 + 2.95 + 3.69	10.00 (3.00 - 12.10)	2630 (540 - 2890)	3.80
	18 + 25 + 42 + 60	1.08 + 1.45 + 2.46 + 3.52	8.50 (2.90 - 9.90)	2370 (550 - 3230)	3.59	1.34 + 1.81 + 2.80 + 4.03	10.00 (3.00 - 12.10)	2630 (540 - 2890)	3.80
	18 + 25 + 50 + 50	1.09 + 1.47 + 2.97 + 2.97	8.50 (2.90 - 9.90)	2370 (550 - 3230)	3.59	1.32 + 1.78 + 3.44 + 3.44	10.00 (3.00 - 12.10)	2630 (540 - 2890)	3.80
	18 + 25 + 50 + 60	1.02 + 1.37 + 2.78 + 3.33	8.50 (2.90 - 9.90)	2370 (550 - 3230)	3.59	1.26 + 1.69 + 3.27 + 3.77	10.00 (3.00 - 12.10)	2630 (540 - 2890)	3.80
	18 + 35 + 35 + 35	1.21 + 2.43 + 2.43 + 2.43	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.62 + 2.80 + 2.80 + 2.80	10.00 (3.00 - 12.10)	2700 (540 - 3020)	3.70
	18 + 35 + 35 + 42	1.15 + 2.30 + 2.30 + 2.76	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.53 + 2.65 + 2.65 + 3.20	10.00 (3.00 - 12.10)	2700 (540 - 3080)	3.70
	18 + 35 + 35 + 50	1.14 + 2.15 + 2.15 + 3.06	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.42 + 2.43 + 2.43 + 3.67	10.00 (3.00 - 12.10)	2700 (540 - 3080)	3.70
	18 + 35 + 35 + 60	1.06 + 2.00 + 2.00 + 3.43	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.34 + 2.30 + 2.30 + 4.01	10.00 (3.00 - 12.10)	2700 (540 - 3080)	3.70
	18 + 35 + 42 + 42	1.14 + 2.15 + 2.61 + 2.61	8.50 (2.90 - 9.90)	2370 (550 - 3230)	3.59	1.45 + 2.48 + 3.02 + 3.02	10.00 (3.00 - 12.10)	2630 (540 - 2890)	3.80
	18 + 35 + 42 + 50	1.08 + 2.03 + 2.46 + 2.93	8.50 (2.90 - 9.90)	2370 (550 - 3230)	3.59	1.35 + 2.30 + 2.81 + 3.51	10.00 (3.00 - 12.10)	2630 (540 - 2890)	3.80
	18 + 35 + 42 + 60	1.01 + 1.90 + 2.30 + 3.29	8.50 (2.90 - 9.90)	2370 (550 - 3230)	3.59	1.28 + 2.19 + 2.67 + 3.85	10.00 (3.00 - 12.10)	2630 (540 - 2890)	3.80
4 units	18 + 35 + 50 + 50	1.02 + 1.92 + 2.78 + 2.78	8.50 (2.90 - 9.90)	2370 (550 - 3230)	3.59	1.26 + 2.15 + 3.28 + 3.28	10.00 (3.00 - 12.10)	2630 (540 - 2890)	3.80
	18 + 42 + 42 + 42	1.08 + 2.46 + 2.48 + 2.48	8.50 (2.90 - 9.90)	2370 (550 - 3230)	3.59	1.38 + 2.85 + 2.87 + 2.87	10.00 (3.00 - 12.10)	2630 (540 - 2890)	3.80
	18 + 42 + 42 + 50	1.03 + 2.33 + 2.35 + 2.80	8.50 (2.90 - 9.90)	2370 (550 - 3230)	3.59	1.21 + 2.49 + 3.14 + 3.14	10.00 (3.00 - 12.10)	2630 (540 - 2890)	3.80
	25 + 25 + 25 + 25	2.13 + 2.13 + 2.13 + 2.13	8.50 (2.90 - 9.90)	2370 (550 - 3260)	3.59	2.50 + 2.50 + 2.50 + 2.50	10.00 (3.00 - 11.4)	2700 (540 - 3020)	3.70
	25 + 25 + 25 + 35	1.93 + 1.93 + 1.93 + 2.69	8.50 (2.90 - 9.90)	2370 (550 - 3260)	3.59	2.34 + 2.34 + 2.34 + 2.96	10.00 (3.00 - 11.4)	2700 (540 - 3010)	3.70
	25 + 25 + 25 + 42	1.82 + 1.82 + 1.82 + 3.04	8.50 (2.90 - 9.90)	2370 (550 - 3260)	3.59	2.21 + 2.21 + 2.21 + 3.37	10.00 (3.00 - 11.4)	2700 (540 - 3010)	3.70
	25 + 25 + 25 + 50	1.70 + 1.70 + 1.70 + 3.40	8.50 (2.90 - 9.90)	2370 (550 - 3260)	3.59	2.04 + 2.04 + 2.04 + 3.89	10.00 (3.00 - 11.60)	2700 (540 - 3010)	3.70
	25 + 25 + 25 + 60	1.57 + 1.57 + 1.57 + 3.78	8.50 (2.90 - 9.90)	2370 (550 - 3260)	3.59	1.92 + 1.92 + 1.92 + 4.24	10.00 (3.00 - 11.60)	2700 (540 - 3010)	3.70
	25 + 25 + 35 + 35	1.77 + 1.77 + 2.47 + 2.47	8.50 (2.90 - 9.90)	2370 (550 - 3260)	3.59	2.21 + 2.21 + 2.78 + 2.78	10.00 (3.00 - 11.4)	2700 (540 - 3020)	3.70
	25 + 25 + 35 + 42	1.67 + 1.67 + 2.33 + 2.80	8.50 (2.90 - 9.90)	2370 (550 - 3260)	3.59	2.09 + 2.09 + 2.63 + 3.18	10.00 (3.00 - 12.10)	2700 (540 - 3010)	3.70
	25 + 25 + 35 + 50	1.57 + 1.57 + 2.20 + 3.15	8.50 (2.90 - 9.90)	2370 (550 - 3260)	3.59	1.93 + 1.93 + 2.44 + 3.69	10.00 (3.00 - 12.10)	2700 (540 - 3010)	3.70
	25 + 25 + 35 + 60	1.47 + 1.47 + 2.05 + 3.52	8.50 (2.90 - 9.90)	2370 (550 - 3260)	3.59	1.83 + 1.83 + 2.31 + 4.03	10.00 (3.00 - 12.10)	2700 (540 - 3010)	3.70
	25 + 25 + 42 + 42	1.59 + 1.59 + 2.65 + 2.65	8.50 (2.90 - 9.90)	2370 (550 - 3230)	3.59	1.98 + 1.98 + 3.01 + 3.01	10.00 (3.00 - 12.10)	2700 (540 - 2890)	3.70
	25 + 25 + 42 + 50	1.50 + 1.50 + 2.51 + 2.99	8.50 (2.90 - 9.90)	2370 (550 - 3230)	3.59	1.93 + 1.93 + 2.44 + 3.69	10.00 (3.00 - 12.10)	2700 (540 - 2890)	3.70
	25 + 25 + 42 + 60	1.40 + 1.40 + 2.35 + 3.36	8.50 (2.90 - 9.90)	2370 (550 - 3230)	3.59	1.83 + 1.83 + 2.31 + 4.03	10.00 (3.00 - 12.10)	2700 (540 - 2890)	3.70
	25 + 25 + 50 + 50	1.42 + 1.42 + 2.83 + 2.83	8.50 (2.90 - 9.90)	2370 (550 - 3230)	3.59	1.72 + 1.72 + 3.28 + 3.28	10.00 (3.00 - 12.10)	2630 (540 - 2890)	3.80
	25 + 35 + 35 + 35	1.64 + 2.29 + 2.29 + 2.29	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	2.09 + 2.64 + 2.64 + 2.64	10.00 (3.00 - 11.60)	2700 (540 - 3010)	3.70
	25 + 35 + 35 + 42	1.56 + 2.17 + 2.17 + 2.61	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.98 + 2.50 + 2.50 + 3.02	10.00 (3.00 - 12.10)	2700 (540 - 2890)	3.70
	25 + 35 + 35 + 50	1.48 + 2.05 + 2.05 + 2.93	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.84 + 2.32 + 2.32 + 3.51	10.00 (3.00 - 12.10)	2630 (540 - 2890)	3.80
	25 + 35 + 35 + 60	1.38 + 1.92 + 1.92 + 3.29	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.74 + 2.21 + 2.21 + 3.85	10.00 (3.00 - 12.10)	2630 (540 - 2890)	3.80
	25 + 35 + 42 + 42	1.49 + 2.07 + 2.48 + 2.48	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.88 + 2.38 + 2.87 + 2.87	10.00 (3.00 - 12.10)	2700 (540 - 2890)	3.70
	25 + 35 + 42 + 50	1.41 + 1.96 + 2.35 + 2.80	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.75 + 2.22 + 2.68 + 3.35	10.00 (3.00 - 12.10)	2630 (540 - 2890)	3.80
	25 + 42 + 42 + 42	1.42 + 2.36 + 2.36 + 2.36	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	1.75 + 2.22 + 2.68 + 3.35	10.00 (3.00 - 12.10)	2630 (540 - 2890)	3.80
	35 + 35 + 35 + 35	2.13 + 2.13 + 2.13 + 2.13	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	2.50 + 2.50 + 2.50 + 2.50	10.00 (3.00 - 12.10)	2630 (540 - 2890)	3.80
	35 + 35 + 35 + 42	2.02 + 2.02 + 2.02 + 2.43	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	2.38 + 2.38 + 2.38 + 2.87	10.00 (3.00 - 12.10)	2630 (540 - 2890)	3.80
	35 + 35 + 35 + 50	1.92 + 1.92 + 1.92 + 2.74	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	2.22 + 2.22 + 2.22 + 3.35	10.00 (3.00 - 12.10)	2630 (540 - 2890)	3.80
	35 + 35 + 42 + 42	1.93 + 1.93 + 2.32 + 2.32	8.50 (2.90 - 9.90)	2390 (550 - 3260)	3.56	2.22 + 2.22 + 2.22 + 3.35	10.00 (3.00 - 12.10)	2630 (540 - 2890)	3.80

RAM - 90NP5E		COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
5 units	15 + 15 + 15 + 15 + 15	1.50 + 1.50 + 1.50 + 1.50 + 1.50	7.50 (2.40 - 7.00)	2200 (550 - 2800)	3.41	2.00 + 2.00 + 2.00 + 2.00 + 2.00	10.00 (3.40 - 10.50)	2350 (610 - 2820)	4.26
	15 + 15 + 15 + 15 + 18	1.50 + 1.50 + 1.50 + 1.50 + 1.80	7.80 (2.70 - 8.60)	2280 (550 - 2800)	3.42	1.90 + 1.90 + 1.90 + 1.90 + 2.38	10.00 (3.40 - 11.00)	2360 (610 - 2832)	4.24
	15 + 15 + 15 + 15 + 25	1.50 + 1.50 + 1.50 + 1.50 + 2.50	8.50 (2.90 - 9.90)	2330 (550 - 2800)	3.65	1.75 + 1.75 + 1.75 + 1.75 + 2.98	10.00 (3.40 - 11.50)	2400 (610 - 2880)	4.17
	15 + 15 + 15 + 15 + 35	1.34 + 1.34 + 1.34 + 1.34 + 3.13	8.50 (2.90 - 9.90)	2590 (550 - 3260)	3.28	1.63 + 1.63 + 1.63 + 1.63 + 3.50	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 15 + 42	1.25 + 1.25 + 1.25 + 1.25 + 3.50	8.50 (2.90 - 9.90)	2590 (550 - 3260)	3.28	1.52 + 1.52 + 1.52 + 1.52 + 3.94	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 15 + 50	1.16 + 1.16 + 1.16 + 1.16 + 3.86	8.50 (2.90 - 9.90)	2590 (550 - 3260)	3.28	1.38 + 1.38 + 1.38 + 1.38 + 4.48	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 15 + 60	1.06 + 1.06 + 1.06 + 1.06 + 4.25	8.50 (2.90 - 9.90)	2590 (550 - 3260)	3.28	1.29 + 1.29 + 1.29 + 1.29 + 4.84	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 18 + 18	1.50 + 1.50 + 1.50 + 1.80 + 1.80	8.10 concrete pipe (TBA)	2150 (550 - 2292)	3.77	1.82 + 1.82 + 1.82 + 2.27 + 2.27	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 18 + 25	1.45 + 1.45 + 1.45 + 1.74 + 2.41	8.50 (2.90 - 9.90)	2200 (550 - 2292)	3.86	1.68 + 1.68 + 1.68 + 2.10 + 2.86	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 18 + 35	1.30 + 1.30 + 1.30 + 1.56 + 3.04	8.50 (2.90 - 9.90)	2620 (550 - 3260)	3.24	1.56 + 1.56 + 1.56 + 1.95 + 3.36	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 18 + 42	1.21 + 1.21 + 1.21 + 1.46 + 3.40	8.50 (2.90 - 9.90)	2620 (550 - 3260)	3.24	1.46 + 1.46 + 1.46 + 1.82 + 3.80	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 18 + 50	1.13 + 1.13 + 1.13 + 1.35 + 3.76	8.50 (2.90 - 9.90)	2620 (550 - 3260)	3.24	1.33 + 1.33 + 1.33 + 1.67 + 4.33	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 18 + 60	1.04 + 1.04 + 1.04 + 1.24 + 4.15	8.50 (2.90 - 9.90)	2680 (550 - 3260)	3.17	1.25 + 1.25 + 1.25 + 1.56 + 4.69	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 25 + 25	1.34 + 1.34 + 1.34 + 2.24 + 2.24	8.50 (2.90 - 9.90)	2480 (550 - 3260)	3.43	1.56 + 1.56 + 1.56 + 2.66 + 2.66	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 25 + 35	1.21 + 1.21 + 1.21 + 2.02 + 2.83	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.46 + 1.46 + 1.46 + 2.48 + 3.14	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 25 + 42	1.14 + 1.14 + 1.14 + 1.90 + 3.19	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.37 + 1.37 + 1.37 + 2.33 + 3.56	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 25 + 50	1.06 + 1.06 + 1.06 + 1.77 + 3.54	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.26 + 1.26 + 1.26 + 2.14 + 4.09	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 25 + 60	0.98 + 0.98 + 0.98 + 1.63 + 3.92	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.18 + 1.18 + 1.18 + 2.01 + 4.44	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 35 + 35	1.11 + 1.11 + 1.11 + 2.59 + 2.59	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.37 + 1.37 + 1.37 + 2.95 + 2.95	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 35 + 42	1.05 + 1.05 + 1.05 + 2.44 + 2.93	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.29 + 1.29 + 1.29 + 2.77 + 3.35	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 35 + 50	0.98 + 0.98 + 0.98 + 2.29 + 3.27	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.19 + 1.19 + 1.19 + 2.56 + 3.87	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 35 + 60	0.91 + 0.91 + 0.91 + 2.13 + 3.64	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.12 + 1.12 + 1.12 + 2.42 + 4.21	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 42 + 42	0.99 + 0.99 + 0.99 + 2.77 + 2.77	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.22 + 1.22 + 1.22 + 3.17 + 3.17	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 42 + 50	0.93 + 0.93 + 0.93 + 2.61 + 3.10	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.13 + 1.13 + 1.13 + 2.94 + 3.67	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 42 + 60	0.87 + 0.87 + 0.87 + 2.43 + 3.47	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.07 + 1.07 + 1.07 + 2.78 + 4.01	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 50 + 50	0.88 + 0.88 + 0.88 + 2.93 + 2.93	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.05 + 1.05 + 1.05 + 3.42 + 3.42	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 15 + 50 + 60	0.82 + 0.82 + 0.82 + 2.74 + 3.29	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.00 + 1.00 + 1.00 + 3.25 + 3.75	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 18 + 18 + 18	1.50 + 1.50 + 1.80 + 1.80 + 1.80	8.40 concrete pipe (TBA)	2180 (550 - 2292)	3.85	1.74 + 1.74 + 2.17 + 2.17 + 2.17	10.00 (3.40 - 11.50)	2460 concrete pipe (TBA)	4.07
	15 + 15 + 18 + 18 + 25	1.40 + 1.40 + 1.68 + 1.68 + 2.34	8.50 (2.90 - 9.90)	2490 (550 - 3260)	3.41	1.61 + 1.61 + 2.02 + 2.02 + 2.74	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 18 + 18 + 35	1.26 + 1.26 + 1.51 + 1.51 + 2.95	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.50 + 1.50 + 1.88 + 1.88 + 3.23	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 18 + 18 + 42	1.18 + 1.18 + 1.42 + 1.42 + 3.31	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.41 + 1.41 + 1.76 + 1.76 + 3.66	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 18 + 18 + 50	1.10 + 1.10 + 1.32 + 1.32 + 3.66	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.29 + 1.29 + 1.61 + 1.61 + 4.19	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 18 + 18 + 60	1.01 + 1.01 + 1.21 + 1.21 + 4.05	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.21 + 1.21 + 1.52 + 1.52 + 4.55	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 18 + 25 + 25	1.30 + 1.30 + 1.56 + 2.17 + 2.17	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.50 + 1.50 + 1.88 + 2.56 + 2.56	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 18 + 25 + 35	1.18 + 1.18 + 1.42 + 1.97 + 2.75	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.41 + 1.41 + 1.76 + 2.39 + 3.03	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 18 + 25 + 42	1.11 + 1.11 + 1.33 + 1.85 + 3.10	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.32 + 1.32 + 1.66 + 2.25 + 3.44	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 18 + 25 + 50	1.04 + 1.04 + 1.24 + 1.73 + 3.46	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.22 + 1.22 + 1.52 + 2.07 + 3.96	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 18 + 25 + 60	0.96 + 0.96 + 1.15 + 1.60 + 3.83	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.15 + 1.15 + 1.44 + 1.95 + 4.31	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 18 + 35 + 35	1.08 + 1.08 + 1.30 + 2.52 + 2.52	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.32 + 1.32 + 1.66 + 2.85 + 2.85	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 18 + 35 + 42	1.02 + 1.02 + 1.22 + 2.38 + 2.86	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.25 + 1.25 + 1.56 + 2.69 + 3.25	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 18 + 35 + 50	0.96 + 0.96 + 1.15 + 2.24 + 3.20	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.16 + 1.16 + 1.45 + 2.49 + 3.76	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 18 + 35 + 60	0.89 + 0.89 + 1.07 + 2.08 + 3.57	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.09 + 1.09 + 1.37 + 2.35 + 4.10	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 18 + 42 + 42	0.97 + 0.97 + 1.16 + 2.70 + 2.70	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.18 + 1.18 + 1.48 + 3.08 + 3.08	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 18 + 42 + 50	0.91 + 0.91 + 1.09 + 2.55 + 3.04	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.10 + 1.10 + 1.37 + 2.86 + 3.57	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 18 + 42 + 60	0.85 + 0.85 + 1.02 + 2.38 + 3.40	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.04 + 1.04 + 1.30 + 2.71 + 3.91	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 18 + 50 + 50	0.86 + 0.86 + 1.03 + 2.87 + 2.87	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.03 + 1.03 + 1.28 + 3.33 + 3.33	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 25 + 25 + 25	1.21 + 1.21 + 2.02 + 2.02 + 2.02	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.41 + 1.41 + 2.39 + 2.39 + 2.39	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 25 + 25 + 35	1.11 + 1.11 + 1.85 + 1.85 + 2.59	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.32 + 1.32 + 2.25 + 2.25 + 2.85	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 25 + 25 + 42	1.05 + 1.05 + 1.74 + 1.74 + 2.93	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.25 + 1.25 + 2.13 + 2.13 + 3.25	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 25 + 25 + 50	0.98 + 0.98 + 1.63 + 1.63 + 3.27	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.16 + 1.16 + 1.97 + 1.97 + 3.76	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 25 + 25 + 60	0.91 + 0.91 + 1.52 + 1.52 + 3.64	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.09 + 1.09 + 1.86 + 1.86 + 4.10	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 25 + 35 + 35	1.02 + 1.02 + 1.70 + 2.38 + 2.38	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.25 + 1.25 + 2.13 + 2.69 + 2.69	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 25 + 35 + 42	0.97 + 0.97 + 1.61 + 2.25 + 2.70	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.18 + 1.18 + 2.01 + 2.54 + 3.08	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 25 + 35 + 50	0.91 + 0.91 + 1.52 + 2.13 + 3.04	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.10 + 1.10 + 1.87 + 2.36 + 3.57	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 25 + 35 + 60	0.85 + 0.85 + 1.42 + 1.98 + 3.40	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.04 + 1.04 + 1.77 + 2.24 + 3.91	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 25 + 42 + 42	0.92 + 0.92 + 1.53 + 2.57 + 2.57	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.12 + 1.12 + 1.91 + 2.92 + 2.92	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 25 + 42 + 50	0.87 + 0.87 + 1.45 + 2.43 + 2.89	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.05 + 1.05 + 1.78 + 2.72 + 3.40	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07

Indoor unit combinations

Standard multi-split

	RAM - 90NP5E	COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
	15 + 15 + 25 + 50 + 50	0.82 + 0.82 + 1.37 + 2.74 + 2.74	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	0.98 + 0.98 + 1.67 + 3.19 + 3.19	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 35 + 35 + 35	0.94 + 0.94 + 2.20 + 2.20 + 2.20	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.18 + 1.18 + 2.54 + 2.54 + 2.54	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 35 + 35 + 42	0.90 + 0.90 + 2.10 + 2.10 + 2.51	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.12 + 1.12 + 2.42 + 2.42 + 2.92	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 35 + 35 + 50	0.85 + 0.85 + 1.98 + 1.98 + 2.83	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.05 + 1.05 + 2.25 + 2.25 + 3.40	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 15 + 35 + 42 + 42	0.86 + 0.86 + 2.00 + 2.40 + 2.40	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.05 + 1.05 + 2.25 + 2.25 + 3.40	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 18 + 18 + 18	1.47 + 1.76 + 1.76 + 1.76 + 1.76	8.50 (2.90 - 9.90)	2530 (550 - 3260)	3.36	1.67 + 2.08 + 2.08 + 2.08 + 2.08	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 18 + 18 + 25	1.36 + 1.63 + 1.63 + 1.63 + 2.26	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.55 + 1.94 + 1.94 + 1.94 + 2.64	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 18 + 18 + 35	1.23 + 1.47 + 1.47 + 1.47 + 2.86	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.45 + 1.81 + 1.81 + 1.81 + 3.12	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 18 + 18 + 42	1.15 + 1.38 + 1.38 + 1.38 + 3.22	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.36 + 1.70 + 1.70 + 1.70 + 3.54	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 18 + 18 + 50	1.07 + 1.29 + 1.29 + 1.29 + 3.57	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.25 + 1.56 + 1.56 + 1.56 + 4.06	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 18 + 18 + 60	0.99 + 1.19 + 1.19 + 1.19 + 3.95	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.18 + 1.47 + 1.47 + 1.47 + 4.41	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 18 + 25 + 25	1.26 + 1.51 + 1.51 + 2.10 + 2.10	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.45 + 1.81 + 1.81 + 2.46 + 2.46	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 18 + 25 + 35	1.15 + 1.38 + 1.38 + 1.91 + 2.68	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.36 + 1.70 + 1.70 + 2.31 + 2.93	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 18 + 25 + 42	1.08 + 1.30 + 1.30 + 1.80 + 3.03	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.28 + 1.60 + 1.60 + 2.18 + 3.33	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 18 + 25 + 50	1.01 + 1.21 + 1.21 + 1.69 + 3.37	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.18 + 1.48 + 1.48 + 2.01 + 3.85	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 18 + 25 + 60	0.94 + 1.13 + 1.13 + 1.56 + 3.75	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.12 + 1.40 + 1.40 + 1.90 + 4.19	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 18 + 35 + 35	1.05 + 1.26 + 1.26 + 2.46 + 2.46	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.28 + 1.60 + 1.60 + 2.76 + 2.76	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 18 + 35 + 42	1.00 + 1.20 + 1.20 + 2.32 + 2.79	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.21 + 1.52 + 1.52 + 2.61 + 3.15	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 18 + 35 + 50	0.94 + 1.13 + 1.13 + 2.19 + 3.13	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.12 + 1.40 + 1.40 + 2.42 + 3.65	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 18 + 35 + 60	0.87 + 1.05 + 1.05 + 2.04 + 3.49	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.06 + 1.33 + 1.33 + 2.29 + 3.99	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 18 + 42 + 42	0.94 + 1.13 + 1.13 + 2.64 + 2.64	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.15 + 1.44 + 1.44 + 2.99 + 2.99	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 18 + 42 + 50	0.89 + 1.07 + 1.07 + 2.50 + 2.97	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.07 + 1.34 + 1.34 + 2.78 + 3.48	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 18 + 42 + 60	0.83 + 1.00 + 1.00 + 2.33 + 3.33	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.02 + 1.27 + 1.27 + 2.64 + 3.81	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 18 + 50 + 50	0.84 + 1.01 + 1.01 + 2.81 + 2.81	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.00 + 1.25 + 1.25 + 3.25 + 3.25	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 25 + 25 + 25	1.18 + 1.42 + 1.97 + 1.97 + 1.97	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.36 + 1.70 + 2.31 + 2.31 + 2.31	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 25 + 25 + 35	1.08 + 1.30 + 1.80 + 1.80 + 2.52	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.28 + 1.60 + 2.18 + 2.18 + 2.76	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 25 + 25 + 42	1.02 + 1.22 + 1.70 + 1.70 + 2.86	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.21 + 1.52 + 2.06 + 2.06 + 3.15	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
5 units	15 + 18 + 25 + 25 + 50	0.96 + 1.15 + 1.60 + 1.60 + 3.20	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.12 + 1.40 + 1.91 + 1.91 + 3.65	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 25 + 25 + 60	0.89 + 1.07 + 1.49 + 1.49 + 3.57	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.06 + 1.33 + 1.81 + 1.81 + 3.99	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 25 + 35 + 35	1.00 + 1.20 + 1.66 + 2.32 + 2.32	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.21 + 1.52 + 2.06 + 2.61 + 2.61	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 25 + 35 + 42	0.94 + 1.13 + 1.57 + 2.20 + 2.64	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.15 + 1.44 + 1.95 + 2.47 + 2.99	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 25 + 35 + 50	0.89 + 1.07 + 1.49 + 2.08 + 2.97	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.07 + 1.34 + 1.82 + 2.30 + 3.48	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 25 + 35 + 60	0.83 + 1.00 + 1.39 + 1.94 + 3.33	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.02 + 1.27 + 1.73 + 2.18 + 3.81	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 25 + 42 + 42	0.90 + 1.08 + 1.50 + 2.51 + 2.51	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.09 + 1.37 + 1.86 + 2.84 + 2.84	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 25 + 42 + 50	0.85 + 1.02 + 1.42 + 2.38 + 2.83	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.02 + 1.28 + 1.73 + 2.65 + 3.32	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 35 + 35 + 35	0.92 + 1.11 + 2.16 + 2.16 + 2.16	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.15 + 1.44 + 2.47 + 2.47 + 2.47	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 35 + 35 + 42	0.88 + 1.06 + 2.05 + 2.05 + 2.46	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.09 + 1.37 + 2.35 + 2.35 + 2.84	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 35 + 35 + 50	0.83 + 1.00 + 1.94 + 1.94 + 2.78	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.02 + 1.28 + 2.19 + 2.19 + 3.32	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 18 + 35 + 42 + 42	0.84 + 1.01 + 1.96 + 2.35 + 2.35	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.02 + 1.28 + 2.19 + 2.19 + 3.32	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 25 + 25 + 25 + 25	1.11 + 1.85 + 1.85 + 1.85 + 1.85	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.28 + 2.18 + 2.18 + 2.18 + 2.18	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 25 + 25 + 25 + 35	1.02 + 1.70 + 1.70 + 1.70 + 2.38	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.21 + 2.06 + 2.06 + 2.06 + 2.61	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 25 + 25 + 25 + 42	0.97 + 1.61 + 1.61 + 1.61 + 2.70	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.15 + 1.95 + 1.95 + 1.95 + 2.99	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 25 + 25 + 25 + 50	0.91 + 1.52 + 1.52 + 1.52 + 3.04	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.07 + 1.82 + 1.82 + 1.82 + 3.48	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 25 + 25 + 25 + 60	0.85 + 1.42 + 1.42 + 1.42 + 3.40	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.02 + 1.73 + 1.73 + 1.73 + 3.81	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 25 + 25 + 35 + 35	0.94 + 1.57 + 1.57 + 2.20 + 2.20	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.15 + 1.95 + 1.95 + 2.47 + 2.47	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 25 + 25 + 35 + 42	0.90 + 1.50 + 1.50 + 2.10 + 2.51	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.09 + 1.86 + 1.86 + 2.35 + 2.84	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 25 + 25 + 35 + 50	0.85 + 1.42 + 1.42 + 1.98 + 2.83	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.02 + 1.73 + 1.73 + 2.19 + 3.32	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 25 + 25 + 42 + 42	0.86 + 1.43 + 1.43 + 2.40 + 2.40	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.15 + 1.95 + 1.95 + 2.47 + 2.47	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 25 + 35 + 35 + 35	0.88 + 1.47 + 2.05 + 2.05 + 2.05	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.09 + 1.86 + 2.35 + 2.35 + 2.35	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 25 + 35 + 35 + 42	0.84 + 1.40 + 1.96 + 1.96 + 2.35	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.04 + 1.77 + 2.24 + 2.24 + 2.71	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	15 + 35 + 35 + 35 + 35	0.82 + 1.92 + 1.92 + 1.92 + 1.92	8.50 (2.90 - 9.90)	2690 (550 - 3260)	3.16	1.04 + 1.77 + 2.24 + 2.24 + 2.71	10.00 (3.40 - 11.50)	2460 (610 - 2952)	4.07
	18 + 18 + 18 + 18 + 18	1.70 + 1.70 + 1.70 + 1.70 + 1.70	8.50 (2.90 - 9.90)	2530 (600 - 3040)	3.36	2.00 + 2.00 + 2.00 + 2.00 + 2.00	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 18 + 18 + 25	1.58 + 1.58 + 1.58 + 1.58 + 2.19	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.87 + 1.87 + 1.87 + 1.87 + 2.54	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 18 + 18 + 35	1.43 + 1.43 + 1.43 + 1.43 + 2.78	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.75 + 1.75 + 1.75 + 1.75 + 3.01	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 18 + 18 + 42	1.34 + 1.34 + 1.34 + 1.34 + 3.13	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.64 + 1.64 + 1.64 + 1.64 + 3.42	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07

	RAM - 90NP5E	COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
5 units	18 + 18 + 18 + 18 + 50	1.25 + 1.25 + 1.25 + 1.25 + 3.48	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.52 + 1.52 + 1.52 + 1.52 + 3.94	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 18 + 18 + 60	1.16 + 1.16 + 1.16 + 1.16 + 3.86	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.43 + 1.43 + 1.43 + 1.43 + 4.29	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 18 + 25 + 25	1.47 + 1.47 + 1.47 + 2.04 + 2.04	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.75 + 1.75 + 1.75 + 2.38 + 2.38	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 18 + 25 + 35	1.34 + 1.34 + 1.34 + 1.86 + 2.61	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.64 + 1.64 + 1.64 + 2.24 + 2.83	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 18 + 25 + 42	1.26 + 1.26 + 1.26 + 1.76 + 2.95	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.55 + 1.55 + 1.55 + 2.11 + 3.23	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 18 + 25 + 50	1.19 + 1.19 + 1.19 + 1.65 + 3.29	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.44 + 1.44 + 1.44 + 1.95 + 3.74	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 18 + 25 + 60	1.10 + 1.10 + 1.10 + 1.53 + 3.67	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.36 + 1.36 + 1.36 + 1.85 + 4.08	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 18 + 35 + 35	1.23 + 1.23 + 1.23 + 2.40 + 2.40	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.55 + 1.55 + 1.55 + 2.67 + 2.67	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 18 + 35 + 42	1.17 + 1.17 + 1.17 + 2.27 + 2.73	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.47 + 1.47 + 1.47 + 2.53 + 3.06	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 18 + 35 + 50	1.10 + 1.10 + 1.10 + 2.14 + 3.06	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.37 + 1.37 + 1.37 + 2.35 + 3.55	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 18 + 35 + 60	1.03 + 1.03 + 1.03 + 2.00 + 3.42	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.37 + 1.37 + 1.37 + 2.35 + 3.55	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 18 + 42 + 42	1.11 + 1.11 + 1.11 + 2.59 + 2.59	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.40 + 1.40 + 1.40 + 2.91 + 2.91	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 18 + 42 + 50	1.05 + 1.05 + 1.05 + 2.45 + 2.91	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.30 + 1.30 + 1.30 + 2.71 + 3.39	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 18 + 50 + 50	0.99 + 0.99 + 0.99 + 2.76 + 2.76	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.30 + 1.30 + 1.30 + 2.71 + 3.39	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 25 + 25 + 25	1.38 + 1.38 + 1.91 + 1.91 + 1.91	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.64 + 1.64 + 2.24 + 2.24 + 2.24	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 25 + 25 + 35	1.26 + 1.26 + 1.76 + 1.76 + 2.46	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.55 + 1.55 + 2.11 + 2.11 + 2.67	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 25 + 25 + 42	1.20 + 1.20 + 1.66 + 1.66 + 2.79	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.47 + 1.47 + 2.00 + 2.00 + 3.06	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 25 + 25 + 50	1.13 + 1.13 + 1.56 + 1.56 + 3.13	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.37 + 1.37 + 1.86 + 1.86 + 3.55	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 25 + 25 + 60	1.05 + 1.05 + 1.46 + 1.46 + 3.49	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.30 + 1.30 + 1.76 + 1.76 + 3.89	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 25 + 35 + 35	1.17 + 1.17 + 1.62 + 2.27 + 2.27	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.47 + 1.47 + 2.00 + 2.53 + 2.53	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 25 + 35 + 42	1.11 + 1.11 + 1.54 + 2.16 + 2.59	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.40 + 1.40 + 1.90 + 2.40 + 2.91	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 25 + 35 + 50	1.05 + 1.05 + 1.46 + 2.04 + 2.91	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.30 + 1.30 + 1.77 + 2.24 + 3.39	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 25 + 42 + 42	1.06 + 1.06 + 1.47 + 2.46 + 2.46	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.33 + 1.33 + 1.81 + 2.77 + 2.77	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 25 + 42 + 50	1.00 + 1.00 + 1.39 + 2.33 + 2.78	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.33 + 1.33 + 1.81 + 2.77 + 2.77	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 35 + 35 + 35	1.09 + 1.09 + 2.11 + 2.11 + 2.11	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.40 + 1.40 + 2.40 + 2.40 + 2.40	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 35 + 35 + 42	1.03 + 1.03 + 2.01 + 2.01 + 2.41	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.33 + 1.33 + 2.29 + 2.29 + 2.77	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 18 + 35 + 42 + 42	0.99 + 0.99 + 1.92 + 2.30 + 2.30	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.33 + 1.33 + 2.29 + 2.29 + 2.77	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 25 + 25 + 25 + 25	1.30 + 1.80 + 1.80 + 1.80 + 1.80	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.55 + 2.11 + 2.11 + 2.11 + 2.11	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 25 + 25 + 25 + 35	1.20 + 1.66 + 1.66 + 1.66 + 2.32	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.47 + 2.00 + 2.00 + 2.00 + 2.53	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 25 + 25 + 25 + 42	1.13 + 1.57 + 1.57 + 1.57 + 2.64	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.40 + 1.90 + 1.90 + 1.90 + 2.91	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 25 + 25 + 25 + 50	1.07 + 1.49 + 1.49 + 1.49 + 2.97	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	6.00 + 0.82 + 0.82 + 0.82 + 1.56	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 25 + 25 + 25 + 60	1.00 + 1.39 + 1.39 + 1.39 + 3.33	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.24 + 1.68 + 1.68 + 1.68 + 3.71	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 25 + 25 + 35 + 35	1.11 + 1.54 + 1.54 + 2.16 + 2.16	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.40 + 1.90 + 1.90 + 2.40 + 2.40	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 25 + 25 + 35 + 42	1.06 + 1.47 + 1.47 + 2.05 + 2.46	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.33 + 1.81 + 1.81 + 2.29 + 2.77	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 25 + 25 + 35 + 50	1.00 + 1.39 + 1.39 + 1.94 + 2.78	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.24 + 1.69 + 1.69 + 2.14 + 3.23	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 25 + 25 + 42 + 42	1.01 + 1.40 + 1.40 + 2.35 + 2.35	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.27 + 1.73 + 1.73 + 2.64 + 2.64	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 25 + 35 + 35 + 35	1.03 + 1.44 + 2.01 + 2.01 + 2.01	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.33 + 1.81 + 2.29 + 2.29 + 2.29	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	18 + 25 + 35 + 35 + 42	0.99 + 1.37 + 1.92 + 1.92 + 2.30	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.27 + 1.73 + 2.18 + 2.18 + 2.64	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	25 + 25 + 25 + 25 + 25	1.70 + 1.70 + 1.70 + 1.70 + 1.70	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	2.00 + 2.00 + 2.00 + 2.00 + 2.00	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	25 + 25 + 25 + 25 + 35	1.57 + 1.57 + 1.57 + 1.57 + 2.20	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.90 + 1.90 + 1.90 + 1.90 + 2.40	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	25 + 25 + 25 + 25 + 42	1.50 + 1.50 + 1.50 + 1.50 + 2.51	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.81 + 1.81 + 1.81 + 1.81 + 2.77	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	25 + 25 + 25 + 25 + 50	1.42 + 1.42 + 1.42 + 1.42 + 2.83	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.69 + 1.69 + 1.69 + 1.69 + 3.23	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	25 + 25 + 25 + 35 + 35	1.47 + 1.47 + 1.47 + 2.05 + 2.05	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.81 + 1.81 + 1.81 + 2.29 + 2.29	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	25 + 25 + 25 + 35 + 42	1.40 + 1.40 + 1.40 + 1.96 + 2.35	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.73 + 1.73 + 1.73 + 2.18 + 2.64	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07
	25 + 25 + 35 + 35 + 35	1.37 + 1.37 + 1.92 + 1.92 + 1.92	8.50 (2.90 - 9.90)	2690 (600 - 3040)	3.16	1.73 + 1.73 + 2.18 + 2.18 + 2.18	10.00 (3.40 - 12.10)	2460 (610 - 2710)	4.07

Indoor unit combinations

Standard multi-split

	RAM-110NP5E	COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
1 unit	15	1.50	1.50 (1.00 - 1.60)	420 (320 - 480)	3.57	2.00	2.00 (1.50 - 2.20)	620 (360 - 850)	3.23
	18	1.80	1.80 (1.70 - 2.00)	500 (320 - 610)	3.60	2.50	2.50 (2.00 - 3.00)	780 (360 - 920)	3.21
	25	2.50	2.50 (1.70 - 2.80)	700 (320 - 860)	3.57	3.40	3.40 (2.00 - 4.00)	1140 (360 - 1340)	2.98
	35	3.50	3.50 (1.70 - 3.90)	1040 (320 - 1270)	3.37	4.30	4.30 (2.00 - 5.20)	1420 (360 - 1720)	3.03
	42	4.20	4.20 (1.70 - 4.20)	1250 (320 - 1270)	3.36	5.20	4.30 (2.00 - 6.50)	1420 (360 - 1720)	3.03
	50	5.00	5.00 (1.70 - 5.50)	1540 (320 - 1860)	3.25	6.50	6.50 (2.00 - 7.30)	2300 (360 - 2580)	2.83
	60	6.00	6.00 (1.70 - 6.60)	1630 (320 - 1860)	3.68	7.50	7.50 (2.00 - 8.20)	2300 (360 - 2950)	3.26
2 units	15 + 15	1.50 + 1.50	3.00 (2.40 - 3.50)	850 (500 - 1020)	3.53	2.00 + 2.00	4.00 (2.70 - 4.70)	950 (500 - 1140)	4.21
	15 + 18	1.50 + 1.80	3.30 (2.40 - 3.80)	950 (500 - 1140)	3.47	2.00 + 2.50	4.50 (2.70 - 5.20)	1180 (500 - 1416)	3.81
	15 + 25	1.50 + 2.50	4.00 (2.40 - 4.50)	1150 (500 - 1500)	3.48	2.00 + 3.40	5.40 (2.70 - 6.10)	1320 (500 - 1584)	4.09
	15 + 35	1.50 + 3.50	5.00 (2.40 - 5.50)	1550 (500 - 1860)	3.23	2.00 + 4.30	6.30 (2.70 - 7.00)	1550 (500 - 1860)	4.06
	15 + 42	1.50 + 4.20	5.70 (2.40 - 6.20)	1700 (500 - 1860)	3.35	2.00 + 5.20	7.20 (2.70 - 7.90)	1850 (500 - 2560)	3.89
	15 + 50	1.50 + 5.00	6.50 (2.40 - 7.00)	2100 (500 - 2520)	3.10	2.00 + 6.50	8.50 (2.70 - 9.20)	2800 (500 - 3000)	3.04
	15 + 60	1.50 + 6.00	7.50 (2.40 - 8.00)	2100 (500 - 2520)	3.57	2.00 + 7.50	9.50 (2.70 - 10.20)	2800 (500 - 3000)	3.39
	18 + 18	1.80 + 1.80	3.60 (2.40 - 4.00)	1000 (500 - 1160)	3.60	2.50 + 2.50	5.00 (2.70 - 5.70)	1240 (500 - 1710)	4.03
	18 + 25	1.80 + 2.50	4.30 (2.40 - 4.70)	1200 (500 - 1590)	3.58	2.50 + 3.40	5.90 (2.70 - 6.60)	1530 (500 - 1990)	3.86
	18 + 35	1.80 + 3.50	5.30 (2.40 - 5.80)	1590 (500 - 1900)	3.33	2.50 + 4.30	6.80 (2.70 - 7.50)	1870 (500 - 2320)	3.64
	18 + 42	1.59 + 3.71	6.00 (2.40 - 5.80)	1760 (500 - 1900)	3.41	2.50 + 5.20	7.70 (2.70 - 8.40)	2200 (500 - 2880)	3.50
	18 + 50	1.80 + 5.00	6.80 (2.40 - 7.50)	2370 (500 - 2970)	2.87	2.50 + 6.50	9.00 (2.70 - 9.70)	2970 (500 - 3400)	3.03
	18 + 60	1.80 + 6.00	7.80 (2.40 - 8.20)	2370 (500 - 3120)	3.29	2.50 + 7.50	10.00 (2.70 - 10.70)	2970 (500 - 3400)	3.37
	25 + 25	2.50 + 2.50	5.00 (2.40 - 5.50)	1370 (500 - 1640)	3.65	3.40 + 3.40	6.80 (2.70 - 7.50)	1920 (500 - 2250)	3.54
	25 + 35	2.50 + 3.50	6.00 (2.40 - 6.60)	2000 (500 - 2400)	3.00	3.40 + 4.30	7.70 (2.70 - 8.40)	2280 (500 - 2590)	3.38
	25 + 42	2.50 + 4.20	6.70 (2.40 - 7.00)	2000 (500 - 2400)	3.35	3.40 + 5.20	8.60 (2.70 - 9.30)	2400 (500 - 3110)	3.58
	25 + 50	2.50 + 5.00	7.50 (2.40 - 8.00)	2580 (500 - 3270)	2.91	3.40 + 6.50	9.90 (2.70 - 10.60)	3220 (500 - 3400)	3.07
	25 + 60	2.50 + 6.00	8.50 (2.40 - 9.00)	2580 (500 - 3270)	3.29	3.40 + 7.50	10.90 (2.70 - 11.60)	3220 (500 - 3400)	3.39
	35 + 35	3.50 + 3.50	7.00 (2.40 - 7.80)	2490 (450 - 2990)	2.81	4.30 + 4.30	8.60 (2.70 - 9.30)	2460 (500 - 2860)	3.50
	35 + 42	3.50 + 4.20	7.70 (2.40 - 8.10)	2490 (500 - 2990)	3.09	4.30 + 5.20	9.50 (2.70 - 10.20)	2680 (500 - 3320)	3.54
	35 + 50	3.50 + 5.00	8.50 (2.40 - 8.80)	2700 (500 - 3270)	3.15	4.30 + 6.50	10.80 (2.70 - 11.50)	3290 (500 - 3600)	3.28
	35 + 60	3.50 + 6.00	9.50 (2.40 - 10.10)	2700 (500 - 3270)	3.52	4.30 + 7.50	11.80 (2.70 - 12.50)	3290 (500 - 3600)	3.59
	42 + 42	4.20 + 4.20	8.40 (2.40 - 8.80)	2700 (500 - 3270)	3.11	5.20 + 5.20	10.40 (2.70 - 11.10)	2460 (500 - 2860)	4.23
	42 + 50	4.20 + 5.00	9.20 (2.40 - 9.70)	2900 (500 - 3470)	3.17	5.20 + 6.50	11.70 (2.70 - 12.40)	3440 (500 - 3800)	3.40
	42 + 60	3.99 + 5.70	10.00 (2.40 - 10.59)	2900 (500 - 3470)	3.45	4.91 + 7.09	12.00 (2.70 - 12.70)	3440 (500 - 3800)	3.49
	50 + 50	5.00 + 5.00	10.00 (2.40 - 11.00)	3100 (500 - 3670)	3.23	6.00 + 6.00	12.00 (2.70 - 12.70)	3440 (500 - 3800)	3.49
	50 + 60	4.55 + 5.45	10.00 (2.40 - 11.00)	3200 (500 - 3780)	3.13	5.57 + 6.43	12.00 (2.70 - 12.70)	3440 (500 - 3800)	3.49
	60 + 60	5.00 + 5.00	10.00 (2.40 - 11.00)	3300 (500 - 3870)	3.03	6.00 + 6.00	12.00 (2.70 - 12.70)	3440 (500 - 3800)	3.49
3 units	15 + 15 + 15	1.50 + 1.50 + 1.50	4.50 (2.70 - 5.00)	1250 (510 - 1500)	3.60	2.00 + 2.00 + 2.00	6.00 (2.90 - 6.70)	1540 (520 - 1848)	3.90
	15 + 15 + 18	1.50 + 1.50 + 1.80	4.80 (2.70 - 5.30)	1350 (510 - 1620)	3.56	2.00 + 2.00 + 2.50	6.50 (2.90 - 7.20)	1800 (520 - 2160)	3.61
	15 + 15 + 25	1.50 + 1.50 + 2.50	5.50 (2.70 - 6.00)	1550 (510 - 1988)	3.55	2.00 + 2.00 + 3.40	7.40 (2.90 - 8.10)	2010 (520 - 2412)	3.68
	15 + 15 + 35	1.50 + 1.50 + 3.50	6.50 (2.70 - 7.00)	2100 (510 - 2676)	3.10	2.00 + 2.00 + 4.30	8.30 (2.90 - 9.00)	2420 (520 - 2904)	3.43
	15 + 15 + 42	1.50 + 1.50 + 4.20	7.20 (2.70 - 7.80)	2150 (510 - 2676)	3.35	2.00 + 2.00 + 5.20	9.20 (2.90 - 9.90)	2580 (520 - 2904)	3.57
	15 + 15 + 50	1.50 + 1.50 + 5.00	8.00 (2.70 - 8.50)	2400 (510 - 2876)	3.33	2.00 + 2.00 + 6.50	10.50 (2.90 - 11.20)	3030 (520 - 3448)	3.47
	15 + 15 + 60	1.50 + 1.50 + 6.00	9.00 (2.70 - 9.50)	2470 (510 - 2876)	3.64	2.00 + 2.00 + 7.50	11.50 (2.90 - 12.20)	3030 (520 - 3448)	3.80
	15 + 18 + 18	1.50 + 1.80 + 1.80	5.10 (2.70 - 5.60)	1450 (510 - 1620)	3.52	2.00 + 2.50 + 2.50	7.00 (2.90 - 7.70)	1880 (520 - 2280)	3.72
	15 + 18 + 25	1.50 + 1.80 + 2.50	5.80 (2.70 - 6.30)	1650 (510 - 1820)	3.52	2.00 + 2.50 + 3.40	7.90 (2.90 - 8.60)	2130 (520 - 2616)	3.71
	15 + 18 + 35	1.50 + 1.80 + 3.50	6.80 (2.70 - 7.30)	1850 (510 - 2844)	3.68	2.00 + 2.50 + 4.30	8.80 (2.90 - 9.50)	2580 (520 - 3030)	3.41
	15 + 18 + 42	1.50 + 1.80 + 4.20	7.50 (2.70 - 8.00)	2200 (510 - 2844)	3.41	2.00 + 2.50 + 5.20	9.70 (2.90 - 10.40)	2630 (520 - 3030)	3.69
	15 + 18 + 50	1.50 + 1.80 + 5.00	8.30 (2.70 - 9.10)	2400 (510 - 2844)	3.46	2.00 + 2.50 + 6.50	11.00 (2.90 - 11.70)	3150 (520 - 3690)	3.49
	15 + 18 + 60	1.50 + 1.80 + 6.00	9.30 (2.70 - 10.20)	2550 (510 - 2844)	3.65	2.00 + 2.50 + 7.50	12.00 (2.90 - 12.70)	3150 (520 - 3690)	3.81
	15 + 25 + 25	1.50 + 2.50 + 2.50	6.50 (2.70 - 7.00)	1800 (510 - 2520)	3.61	2.00 + 3.40 + 3.40	8.80 (2.90 - 9.50)	2350 (520 - 3030)	3.74
	15 + 25 + 35	1.50 + 2.50 + 3.50	7.50 (2.70 - 8.30)	2100 (510 - 3096)	3.57	2.00 + 3.40 + 4.30	9.70 (2.90 - 10.40)	2620 (520 - 3030)	3.70
	15 + 25 + 42	1.50 + 2.50 + 4.20	8.20 (2.70 - 8.70)	2200 (510 - 3360)	3.73	2.00 + 3.40 + 5.20	10.60 (2.90 - 11.30)	2750 (520 - 3030)	3.85
	15 + 25 + 50	1.50 + 2.50 + 5.00	9.00 (2.70 - 9.90)	2680 (510 - 3360)	3.36	2.00 + 3.40 + 6.50	11.90 (2.90 - 12.60)	3290 (520 - 3690)	3.62
	15 + 25 + 60	1.50 + 2.50 + 6.00	10.00 (2.70 - 10.60)	2780 (510 - 3360)	3.60	1.86 + 3.16 + 6.98	12.00 (2.90 - 12.70)	3290 (520 - 3690)	3.65
	15 + 35 + 35	1.50 + 3.50 + 3.50	8.50 (2.70 - 9.40)	2560 (510 - 3360)	3.32	2.00 + 4.30 + 4.30	10.60 (2.90 - 11.30)	2990 (520 - 3360)	3.55
	15 + 35 + 42	1.50 + 3.50 + 4.20	9.20 (2.70 - 9.70)	2700 (510 - 3460)	3.41	2.00 + 4.30 + 5.20	11.50 (2.90 - 12.20)	2990 (520 - 3360)	3.85
	15 + 35 + 50	1.50 + 3.50 + 5.00	10.00 (2.70 - 10.70)	3000 (510 - 3460)	3.33	1.88 + 4.03 + 6.09	12.00 (2.90 - 12.70)	3290 (520 - 3690)	3.65
	15 + 35 + 60	1.36 + 3.18 + 5.46	10.00 (2.70 - 11.00)	3100 (510 - 3460)	3.23	1.74 + 3.74 + 6.52	12.00 (2.90 - 12.70)	3290 (520 - 3690)	3.65
	15 + 42 + 42	1.50 + 4.20 + 4.20	9.90 (2.70 - 10.50)	3000 (510 - 3460)	3.30	1.94 + 5.03 + 5.03	12.00 (2.90 - 12.70)	3290 (520 - 3690)	3.65
	15 + 42 + 50	1.40 + 3.93 + 4.67	10.00 (2.70 - 10.56)	3210 (510 - 3460)	3.12	1.75 + 4.55 + 5.69	12.00 (2.90 - 12.70)	3390 (520 - 3690)	3.54
	15 + 42 + 60	1.28 + 3.59 + 5.13	10.00 (2.70 - 10.60)	3300 (510 - 3800)	3.03	1.63 + 4.24 + 6.12	12.00 (2.90 - 12.70)	3390 (520 - 3690)	3.54
	15 + 50 + 50	1.30 + 4.35 + 4.35	10.00 (2.70 - 10.70)	3500 (510 - 3800)	2.86	1.60 + 5.20 + 5.20	12.00 (2.90 - 12.70)	3490 (520 - 3890)	3.44
	15 + 50 + 60	1.20 + 4.00 + 4.80	10.00 (2.70 - 10.80)	3600 (510 - 3800)	2.78	1.50 + 4.88 + 5.63	12.00 (2.90 - 12.70)	3490 (520 - 3890)	3.44
	15 + 60 + 60	1.11 + 4.44 + 4.44	10.00 (2.70 - 10.96)	3680 (510 - 3800)	2.72	1.41 + 5.29 + 5.29	12.00 (2.90 - 12.70)	3490 (520 - 3890)	3.44
	18 + 18 + 18	1.80 + 1.80 + 1.80	5.40 (2.70 - 6.00)	1480 (510 - 1780)	3.65	2.50 + 2.50 + 2.50	7.50 (2.90 - 8.20)	2420 (520 - 2860)	3.10
	18 + 18 + 25	1.80 + 1.80 + 2.50	6.10 (2.70 - 6.80)	1780 (510 - 2150)	3.43	2.50 + 2.50 + 3.40	8.40 (2.90 - 9.10)	2420 (520 - 3060)	3.47
	18 + 18 + 35	1.80 + 1.80 + 3.50	7.10 (2.70 - 7.90)	2050 (510 - 2310)	3.46	2.50 + 2.50 + 4.30	9.30 (2.90 - 10.00)	2630 (520 - 3060)	3.54
	18 + 18 + 42	1.80 + 1.80 + 4.20	7.80 (2.70 - 8.20)	2250 (510 - 3460)	3.47	2.50 + 2.50 + 5.20	10.20 (2.90 - 10.90)	2670 (520 - 3060)	3.82
	18 + 18 + 50	1.80 + 1.80 + 5.00	8.60 (2.70 - 9.50)	2650 (510 - 3460)	3.25	2.50 + 2.50 + 6.50	11.50 (2.90 - 12.20)	3230 (520 - 3690)	3.56
	18 + 18 + 60	1.80 + 1.80 + 6.00	9.60 (2.70 - 10.60)	2650 (510 - 3460)	3.62	2.40 + 2.40 + 7.20	12.00 (2.90 - 12.70)	3230 (520 - 3690)	3.72
	18 + 25 + 25	1.80 + 2.50 + 2.50	6.80 (2.70 - 7.60)	1860 (510 - 2260)	3.66	2.50 + 3.40 + 3.40	9.30 (2.90 - 10.00)	2450 (520 - 2760)	3.80
	18 + 25 + 35	1.80 + 2.50 + 3.50	7.80 (2.70 - 8.70)	2250 (510 - 3270)	3.47	2.50 + 3.40 + 4.30	10.20 (2.90 - 10.90)	2530 (520 - 2880)	4.03
	18 + 25 + 42	1.80 + 2.50 + 4.20	8.50 (2.70 - 9.00)	2450 (510 - 3270)	3.47	2.50 + 3.40 + 5.20	11.10 (2.90 - 11.80)	2830 (520 - 3220)	3.92
	18 + 25 + 50	1.80 + 2.50 + 5.00	9.30 (2.70 - 10.30)	2750 (510 - 3270)	3.38	2.42 + 3.29 + 6.29	12.00 (2.90 - 12.70)	3290 (520 - 3690)	3.65

	RAM-110NP5E	COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
3 units	18 + 25 + 60	1.75 + 2.43 + 5.83	10.00 (2.70 - 10.80)	2850 (510 - 3320)	3.51	2.24 + 3.04 + 6.72	12.00 (2.90 - 12.70)	3290 (520 - 3690)	3.65
	18 + 35 + 35	1.80 + 3.50 + 3.50	8.80 (2.70 - 9.80)	2600 (510 - 3460)	3.38	2.50 + 4.30 + 4.30	11.10 (2.90 - 11.80)	3050 (520 - 3330)	3.64
	18 + 35 + 42	1.80 + 3.50 + 4.20	9.50 (2.70 - 10.10)	2800 (510 - 3460)	3.39	2.50 + 4.30 + 5.20	12.00 (2.90 - 12.70)	3050 (520 - 3330)	3.93
	18 + 35 + 50	1.75 + 3.40 + 4.85	10.00 (2.70 - 10.80)	3080 (510 - 3580)	3.25	2.26 + 3.88 + 5.86	12.00 (2.90 - 12.70)	3290 (520 - 3690)	3.65
	18 + 35 + 60	1.59 + 3.10 + 5.31	10.00 (2.70 - 10.50)	4000 (510 - 3580)	2.50	2.10 + 3.61 + 6.29	12.00 (2.90 - 12.70)	3290 (520 - 3690)	3.65
	18 + 42 + 42	1.76 + 4.12 + 4.12	10.00 (2.70 - 10.50)	3000 (510 - 3580)	3.33	2.33 + 4.84 + 4.84	12.00 (2.90 - 12.70)	3290 (520 - 3690)	3.65
	18 + 42 + 50	1.64 + 3.82 + 4.55	10.00 (2.70 - 10.64)	3290 (510 - 3580)	3.04	2.11 + 4.39 + 5.49	12.00 (2.90 - 12.70)	3290 (520 - 3690)	3.65
	18 + 42 + 60	1.50 + 3.50 + 5.00	10.00 (2.70 - 11.00)	3400 (510 - 4000)	2.94	1.97 + 4.11 + 5.92	12.00 (2.90 - 12.70)	3290 (520 - 3690)	3.65
	18 + 50 + 50	1.53 + 4.24 + 4.24	10.00 (2.70 - 10.80)	3580 (510 - 4000)	2.79	1.94 + 5.03 + 5.03	12.00 (2.90 - 12.70)	3490 (520 - 3890)	3.44
	18 + 50 + 60	1.41 + 3.91 + 4.69	10.00 (2.70 - 12.00)	3680 (510 - 4000)	2.72	1.82 + 4.73 + 5.45	12.00 (2.90 - 12.70)	3490 (520 - 3890)	3.44
	18 + 60 + 60	1.30 + 4.35 + 4.35	10.00 (2.70 - 12.50)	3780 (510 - 4000)	2.65	1.71 + 5.14 + 5.14	12.00 (2.90 - 12.70)	3490 (520 - 3890)	3.44
	25 + 25 + 25	2.50 + 2.50 + 2.50	7.50 (2.70 - 8.40)	2120 (510 - 2580)	3.54	3.40 + 3.40 + 3.40	10.20 (2.90 - 10.90)	2540 (520 - 2920)	4.02
	25 + 25 + 35	2.50 + 2.50 + 3.50	8.50 (2.70 - 9.50)	2560 (510 - 3110)	3.32	3.40 + 3.40 + 4.30	11.10 (2.90 - 11.80)	2730 (520 - 3070)	4.07
	25 + 25 + 42	2.50 + 2.50 + 4.20	9.20 (2.70 - 9.80)	2650 (510 - 3360)	3.47	3.40 + 3.40 + 5.20	12.00 (2.90 - 12.70)	2930 (520 - 3330)	4.10
	25 + 25 + 50	2.50 + 2.50 + 5.00	10.00 (2.70 - 11.10)	3000 (510 - 3360)	3.33	3.07 + 3.07 + 5.86	12.00 (2.90 - 12.70)	3190 (520 - 3560)	3.76
	25 + 25 + 60	2.27 + 2.27 + 5.45	10.00 (2.70 - 11.09)	3000 (510 - 3360)	3.33	2.85 + 2.85 + 6.29	12.00 (2.90 - 12.70)	3190 (520 - 3560)	3.76
	25 + 35 + 35	2.50 + 3.50 + 3.50	9.50 (2.70 - 10.60)	2800 (510 - 3330)	3.39	3.40 + 4.30 + 4.30	12.00 (2.90 - 12.70)	2890 (520 - 3220)	4.15
	25 + 35 + 42	2.45 + 3.43 + 4.12	10.00 (2.70 - 10.69)	3000 (510 - 3660)	3.33	3.16 + 4.00 + 4.84	12.00 (2.90 - 12.70)	2990 (520 - 3330)	4.01
	25 + 35 + 50	2.27 + 3.18 + 4.55	10.00 (2.70 - 11.09)	3280 (510 - 3660)	3.05	2.87 + 3.63 + 5.49	12.00 (2.90 - 12.70)	3190 (520 - 3690)	3.76
	25 + 35 + 60	2.08 + 2.92 + 5.00	10.00 (2.70 - 11.50)	3380 (510 - 3660)	2.96	2.68 + 3.39 + 5.92	12.00 (2.90 - 12.70)	3190 (520 - 3690)	3.76
	25 + 42 + 42	2.29 + 3.85 + 3.85	10.00 (2.70 - 10.28)	3200 (510 - 3660)	3.13	2.96 + 4.52 + 4.52	12.00 (2.90 - 12.70)	3290 (520 - 3690)	3.65
	25 + 42 + 50	2.14 + 3.59 + 4.27	10.00 (2.70 - 10.68)	3500 (510 - 4000)	2.86	2.70 + 4.13 + 5.17	12.00 (2.90 - 12.70)	3290 (520 - 3690)	3.65
	25 + 42 + 60	1.97 + 3.31 + 4.72	10.00 (2.70 - 12.00)	3500 (510 - 4000)	2.86	2.53 + 3.88 + 5.59	12.00 (2.90 - 12.70)	3490 (520 - 3890)	3.44
	25 + 50 + 50	2.00 + 4.00 + 4.00	10.00 (2.70 - 11.6)	3500 (510 - 4000)	2.86	2.49 + 4.76 + 4.76	12.00 (2.90 - 12.70)	3490 (520 - 3890)	3.44
	25 + 50 + 60	1.85 + 3.70 + 4.44	10.00 (2.70 - 12.5)	3500 (510 - 4000)	2.86	2.34 + 4.48 + 5.17	12.00 (2.90 - 12.70)	3490 (520 - 3890)	3.44
	25 + 60 + 60	1.72 + 4.14 + 4.14	10.00 (2.70 - 12.50)	3500 (510 - 4000)	2.86	2.22 + 4.89 + 4.89	12.00 (2.90 - 12.70)	3490 (520 - 3890)	3.44
	35 + 35 + 35	3.33 + 3.33 + 3.33	10.00 (2.70 - 11.14)	3100 (510 - 4000)	3.23	4.00 + 4.00 + 4.00	12.00 (2.90 - 12.70)	3290 (520 - 3690)	3.65
	35 + 35 + 42	3.13 + 3.13 + 3.75	10.00 (2.70 - 10.71)	3300 (510 - 4000)	3.03	3.74 + 3.74 + 4.52	12.00 (2.90 - 12.70)	3290 (520 - 3690)	3.65
	35 + 35 + 50	2.92 + 2.92 + 4.17	10.00 (2.70 - 12.00)	3600 (510 - 4200)	2.78	3.42 + 3.42 + 5.17	12.00 (2.90 - 12.70)	3290 (520 - 3690)	3.65
	35 + 35 + 60	2.69 + 2.69 + 4.62	10.00 (2.70 - 12.50)	3700 (510 - 4200)	2.70	3.20 + 3.20 + 5.59	12.00 (2.90 - 12.70)	3290 (520 - 3690)	3.65
	35 + 42 + 42	2.94 + 3.53 + 3.53	10.00 (2.70 - 10.34)	3550 (510 - 4200)	2.82	3.51 + 4.24 + 4.24	12.00 (2.90 - 12.70)	3290 (520 - 3690)	3.65
	35 + 42 + 50	2.76 + 3.31 + 3.94	10.00 (2.70 - 12.50)	3800 (510 - 4200)	2.63	3.23 + 3.90 + 4.88	12.00 (2.90 - 12.70)	3490 (520 - 3890)	3.44
	35 + 42 + 60	2.55 + 3.07 + 4.38	10.00 (2.70 - 12.50)	3900 (510 - 4200)	2.56	3.04 + 3.67 + 5.29	12.00 (2.90 - 12.70)	3490 (520 - 3890)	3.44
	35 + 50 + 50	2.59 + 3.70 + 3.70	10.00 (2.70 - 12.50)	4100 (510 - 4500)	2.44	2.98 + 4.51 + 4.51	12.00 (2.90 - 12.70)	3490 (520 - 3890)	3.44
	35 + 50 + 60	2.41 + 3.45 + 4.14	10.00 (2.70 - 12.50)	4100 (510 - 4500)	2.44	2.82 + 4.26 + 4.92	12.00 (2.90 - 12.70)	3690 (520 - 4000)	3.25
	35 + 60 + 60	2.26 + 3.87 + 3.87	10.00 (2.70 - 12.50)	4100 (510 - 4500)	2.44	2.67 + 4.66 + 4.66	12.00 (2.90 - 12.70)	3690 (520 - 4000)	3.25
	42 + 42 + 42	3.33 + 3.33 + 3.33	10.00 (2.70 - 11.00)	3750 (510 - 4500)	2.67	4.00 + 4.00 + 4.00	12.00 (2.90 - 12.70)	3690 (520 - 4000)	3.25
	42 + 42 + 50	3.13 + 3.13 + 3.73	10.00 (2.70 - 12.50)	4000 (510 - 4500)	2.50	3.69 + 3.69 + 4.62	12.00 (2.90 - 12.70)	3890 (520 - 4200)	3.08
	42 + 42 + 60	2.92 + 2.92 + 4.17	10.00 (2.70 - 12.50)	4100 (510 - 4500)	2.44	3.49 + 3.49 + 5.03	12.00 (2.90 - 12.70)	3890 (520 - 4200)	3.08
	42 + 50 + 50	2.96 + 3.52 + 3.52	10.00 (2.70 - 12.50)	4100 (510 - 4500)	2.44	3.43 + 4.29 + 4.29	12.00 (2.90 - 12.70)	3890 (520 - 4200)	3.08
	42 + 50 + 60	2.76 + 3.29 + 3.95	10.00 (2.70 - 12.50)	4100 (510 - 4500)	2.44	3.25 + 4.06 + 4.69	12.00 (2.90 - 12.70)	4190 (520 - 4500)	2.86
	50 + 50 + 50	3.33 + 3.33 + 3.33	10.00 (2.70 - 12.50)	4100 (510 - 4500)	2.44	4.00 + 4.00 + 4.00	12.00 (2.90 - 12.70)	4190 (520 - 4500)	2.86
	50 + 50 + 60	3.13 + 3.13 + 3.75	10.00 (2.70 - 12.50)	4100 (510 - 4500)	2.44	3.80 + 3.80 + 4.39	12.00 (2.90 - 12.70)	4190 (520 - 4500)	2.86
4 units	15 + 15 + 15 + 15	1.50 + 1.50 + 1.50 + 1.50	6.00 (2.900 - 6.40)	1680 (550 - 1620)	3.57	2.00 + 2.00 + 2.00 + 2.00	8.00 (3.00 - 8.70)	2000 (540 - 2652)	4.00
	15 + 15 + 15 + 18	1.50 + 1.50 + 1.50 + 1.80	6.30 (2.900 - 6.80)	1780 (550 - 1776)	3.54	2.00 + 2.00 + 2.00 + 2.50	8.50 (3.00 - 9.20)	2200 (540 - 2760)	3.86
	15 + 15 + 15 + 25	1.50 + 1.50 + 1.50 + 2.50	7.00 (2.90 - 7.60)	1780 (550 - 2136)	3.93	2.00 + 2.00 + 2.00 + 3.40	9.40 (3.00 - 10.10)	2390 (540 - 3036)	3.93
	15 + 15 + 15 + 35	1.50 + 1.50 + 1.50 + 3.50	8.00 (2.90 - 8.70)	2500 (550 - 4000)	3.20	2.00 + 2.00 + 2.00 + 4.30	10.30 (3.00 - 11.00)	2750 (540 - 3468)	3.75
	15 + 15 + 15 + 42	1.50 + 1.50 + 1.50 + 4.20	8.70 (2.90 - 9.00)	2600 (550 - 4000)	3.35	2.00 + 2.00 + 2.00 + 5.20	11.20 (3.00 - 11.90)	2850 (540 - 3360)	3.93
	15 + 15 + 15 + 50	1.50 + 1.50 + 1.50 + 5.00	9.50 (2.90 - 10.30)	2650 (550 - 4000)	3.58	1.92 + 1.92 + 1.92 + 6.24	12.00 (3.00 - 12.70)	3190 (540 - 4000)	3.76
	15 + 15 + 15 + 60	1.43 + 1.43 + 1.43 + 5.71	10.00 (2.90 - 10.86)	2650 (550 - 4000)	3.77	1.78 + 1.78 + 1.78 + 6.67	12.00 (3.00 - 12.70)	3190 (540 - 4000)	3.76
	15 + 15 + 18 + 18	1.50 + 1.50 + 1.80 + 1.80	6.60 (2.90 - 7.20)	1850 (550 - 2100)	3.57	2.00 + 2.00 + 2.50 + 2.50	9.00 (3.00 - 9.70)	2380 (540 - 4000)	3.78
	15 + 15 + 18 + 25	1.50 + 1.50 + 1.80 + 2.50	7.30 (2.90 - 8.00)	2050 (550 - 2220	3.56	2.00 + 2.00 + 2.50 + 3.40	9.90 (3.00 - 10.60)	2530 (540 - 4000)	3.91
	15 + 15 + 18 + 35	1.50 + 1.50 + 1.80 + 3.50	8.30 (2.90 - 9.10)	2350 (550 - 3120)	3.53	2.00 + 2.00 + 2.50 + 4.30	10.80 (3.00 - 11.50)	2680 (540 - 4000)	4.03
	15 + 15 + 18 + 42	1.50 + 1.50 + 1.80 + 4.20	9.00 (2.90 - 9.40)	2350 (550 - 3120)	3.83	2.00 + 2.00 + 2.50 + 5.20	11.70 (3.00 - 12.40)	2780 (540 - 4000)	4.21
	15 + 15 + 18 + 50	1.50 + 1.50 + 1.80 + 5.00	9.80 (2.90 - 10.70)	2800 (550 - 3510)	3.50	1.85 + 1.85 + 2.31 + 6.00	12.00 (3.00 - 12.70)	3290 (540 - 4000)	3.65
	15 + 15 + 18 + 60	1.39 + 1.39 + 1.67 + 5.56	10.00 (2.90 - 10.93)	2800 (550 - 3510)	3.57	1.71 + 1.71 + 2.14 + 6.43	12.00 (3.00 - 12.70)	3290 (540 - 4000)	3.65
	15 + 15 + 25 + 25	1.50 + 1.50 + 2.50 + 2.50	8.00 (2.90 - 8.80)	2150 (550 - 2580)	3.72	2.00 + 2.00 + 3.40 + 3.40	10.80 (3.00 - 11.50)	2480 (540 - 4000)	4.35
	15 + 15 + 25 + 35	1.50 + 1.50 + 2.50 + 3.50	9.00 (2.90 - 9.90)	2600 (550 - 3120)	3.46	2.00 + 2.00 + 3.40 + 4.30	11.70 (3.00 - 12.40)	2890 (540 - 4000)	4.05
	15 + 15 + 25 + 42	1.50 + 1.50 + 2.50 + 4.20	9.70 (2.90 - 10.20)	2800 (550 - 3510)	3.46	1.90 + 1.90 + 3.24 + 4.95	12.00 (3.00 - 12.70)	2890 (540 - 4000)	4.15
	15 + 15 + 25 + 50	1.43 + 1.43 + 2.38 + 4.76	10.00 (2.90 - 10.56)	3000 (550 - 3510)	3.33	1.73 + 1.73 + 2.94 + 5.61	12.00 (3.00 - 12.70)	3290 (540 - 4000)	3.65
	15 + 15 + 25 + 60	1.30 + 1.30 + 2.17 + 5.22	10.00 (2.90 - 12.50)	3000 (550 - 3510)	3.33	1.61 + 1.61 + 2.74 + 6.04	12.00 (3.00 - 12.70)	3290 (540 - 4000)	3.65
	15 + 15 + 35 + 35	1.50 + 1.50 + 3.50 + 3.50	10.00 (2.90 - 10.56)	3000 (550 - 3510)	3.33	1.90 + 1.90 + 4.10 + 4.10	12.00 (3.00 - 12.70)	2990 (540 - 4000)	4.01
	15 + 15 + 35 + 42	1.40 + 1.40 + 3.27 + 3.93	10.00 (2.90 - 10.56)	3150 (550 - 3510)	3.17	1.78 + 1.78 + 3.82 + 4.62	12.00 (3.00 - 12.70)	3190 (540 - 4000)	3.76
	15 + 15 + 35 + 50	1.30 + 1.30 + 3.04 + 4.35	10.00 (2.90 - 12.50)	3300 (550 - 3710)	3.03	1.62 + 1.62 + 3.49 + 5.27	12.00 (3.00 - 12.70)	3390 (540 - 4000)	3.54
	15 + 15 + 35 + 60	1.20 + 1.20 + 2.80 + 4.80	10.00 (2.90 - 10.96)	3300 (550 - 3710)	3.03	1.52 + 1.52 + 3.27 + 5.70	12.00 (3.00 - 12.70)	3390 (540 - 4000)	3.54
	15 + 15 + 42 + 42	1.32 + 1.32 + 3.68 + 3.68	10.00 (2.90 - 10.96)	3300 (550 - 4000)	3.03	1.67 + 1.67 + 4.33 + 4.33	12.00 (3.00 - 12.70)	3290 (540 - 4000)	3.65
	15 + 15 + 42 + 50	1.23 + 1.23 + 3.44 + 4.10	10.00 (2.90 - 11.56)	3400 (550 - 4000)	2.94	1.53 + 1.53 + 3.97 + 4.97	12.00 (3.00 - 12.70)	3490 (540 - 4500)	3.44
	15 + 15 + 42 + 60	1.14 + 1.14 + 3.18 + 4.55	10.00 (2.90 - 11.56)	3400 (550 - 4000)	2.94	1.44 + 1.44 + 3.74 + 5.39	12.00 (3.00 - 12.70)	3490 (540 - 4500)	3.44
	15 + 15 + 50 + 50	1.15 + 1.15 + 3.85 + 3.85	10.00 (2.90 - 12.00)	3500 (550 - 4000)	2.86	1.41 + 1.41 + 4.59 + 4.59	12.00 (3.00 - 12.70)	3490 (540 - 4500)	3.44
	15 + 15 + 50 + 60	1.07 + 1.07 + 3.57 + 4.29	10.00 (2.90 - 12.50)	3610 (550 - 4000)	2.77	1.33 + 1.33 + 4.33 + 5.00	12.00 (3.00 - 12.70)	3490 (540 - 4500)	3.44
	15 + 18 + 18 + 18	1.50 + 1.80 + 1.80 + 1.80	6.90 (2.90 - 7.60)	2140 (550 - 2568)	3.22	2.00 + 2.50 + 2.50 + 2.50	9.50 (3.00 - 10.20)	2750 (540 - 4000)	3.45
	15 + 18 + 18 + 25	1.50 + 1.80 + 1.80 + 2.50	7.60 (2.90 - 8.40)	2140 (550 - 2568)	3.55	2.00 + 2.50 + 2.50 + 3.40	10.40 (3.00 - 11.10)	2750 (540 - 4000)	3.78
	15 + 18 + 18 + 35	1.50 + 1.80 + 1.80 + 3.50	8.60 (2.90 - 9.50)	2240 (550 - 3060)	3.84	2.00 + 2.50 + 2.50 + 4.30	11.30 (3.00 - 12.00)	2750 (540 - 4000)	4.11
	15 + 18 + 18 + 42	1.50 + 1.80 + 1.80 + 4.20	9.30 (2.90 - 9.80)	2550 (550 - 3120)	3.65	1.97 + 2.46 + 2.46 + 5.11	12.00 (3.00 - 12.70)	2890 (540 - 4000)	4.15
	15 + 18 + 18 + 50	1.49 + 1.78 + 1.78 + 4.95	10.00 (2.90 - 10.99)	2800 (550 - 3120)	3.57	1.78 + 2.22 + 2.22 + 5.78	12.00 (3.00 - 12.70)	3390 (540 - 4500)	3.54
	15 + 18 + 18 + 60	1.35 + 1.62 + 1.62 + 5.41	10.00 (2.90 - 10.99)	2800 (550 - 3120)	3.57	1.66 + 2.07 + 2.07 + 6.21	12.00 (3.00 - 12.70)	3390 (540 - 4500)	3.54
	15 + 18 + 25 + 25	1.50 + 1.80 + 2.50 + 2.50	8.30 (2.90 - 9.20)	2240 (550 - 3120)	3.71	2.00 + 2.50 + 3.40 + 3.40	11.30 (3.00 - 12.00)	2890 (540 - 4000)	3.91

Indoor unit combinations

Standard multi-split

	RAM-110NP5E	COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
	15 + 18 + 25 + 35	1.50 + 1.80 + 2.50 + 3.50	9.30 (2.90 - 10.30)	2550 (550 - 3120)	3.65	1.97 + 2.46 + 3.34 + 4.23	12.00 (3.00 - 12.70)	2990 (540 - 4000)	4.01
	15 + 18 + 25 + 42	1.50 + 1.80 + 2.50 + 4.20	10.00 (2.90 - 10.60)	2800 (550 - 3120)	3.57	1.83 + 2.29 + 3.11 + 4.76	12.00 (3.00 - 12.70)	3190 (540 - 4000)	3.76
	15 + 18 + 25 + 50	1.39 + 1.67 + 2.31 + 4.63	10.00 (2.90 - 10.56)	2800 (550 - 3120)	3.57	1.67 + 2.08 + 2.83 + 5.42	12.00 (3.00 - 12.70)	3490 (540 - 4000)	3.44
	15 + 18 + 25 + 60	1.27 + 1.53 + 2.12 + 5.08	10.00 (2.90 - 10.80)	3150 (550 - 3700)	3.17	1.56 + 1.95 + 2.65 + 5.84	12.00 (3.00 - 12.70)	3490 (540 - 4500)	3.44
	15 + 18 + 35 + 35	1.46 + 1.75 + 3.40 + 3.40	10.00 (2.90 - 10.60)	3150 (550 - 3700)	3.17	1.83 + 2.29 + 3.94 + 3.94	12.00 (3.00 - 12.70)	3190 (540 - 4000)	3.76
	15 + 18 + 35 + 42	1.36 + 1.64 + 3.18 + 3.82	10.00 (2.90 - 10.64)	3150 (550 - 3700)	3.17	1.71 + 2.14 + 3.69 + 4.46	12.00 (3.00 - 12.70)	3290 (540 - 4000)	3.65
	15 + 18 + 35 + 50	1.27 + 1.53 + 2.97 + 4.24	10.00 (2.90 - 10.90)	3400 (550 - 4000)	2.94	1.57 + 1.96 + 3.37 + 5.10	12.00 (3.00 - 12.70)	3560 (540 - 4500)	3.37
	15 + 18 + 35 + 60	1.17 + 1.41 + 2.73 + 4.69	10.00 (2.90 - 11.00)	3400 (550 - 4000)	2.94	1.47 + 1.84 + 3.17 + 5.52	12.00 (3.00 - 12.70)	3560 (540 - 4500)	3.37
	15 + 18 + 42 + 42	1.28 + 1.54 + 3.59 + 3.59	10.00 (2.90 - 10.90)	3400 (550 - 4000)	2.94	1.61 + 2.01 + 4.19 + 4.19	12.00 (3.00 - 12.70)	3490 (540 - 4500)	3.44
	15 + 18 + 42 + 50	1.20 + 1.44 + 3.36 + 4.00	10.00 (2.90 - 11.30)	3500 (550 - 4000)	2.86	1.48 + 1.85 + 3.85 + 4.81	12.00 (3.00 - 12.70)	3590 (540 - 4500)	3.34
	15 + 18 + 42 + 60	1.11 + 1.33 + 3.11 + 4.44	10.00 (2.90 - 11.50)	3500 (550 - 4000)	2.86	1.40 + 1.74 + 3.63 + 5.23	12.00 (3.00 - 12.70)	3590 (540 - 4500)	3.34
	15 + 18 + 50 + 50	1.13 + 1.35 + 3.76 + 3.76	10.00 (2.90 - 11.30)	3650 (550 - 4000)	2.74	1.37 + 1.71 + 4.46 + 4.46	12.00 (3.00 - 12.70)	3590 (540 - 4500)	3.34
	15 + 18 + 50 + 60	1.05 + 1.26 + 3.50 + 4.20	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.30 + 1.62 + 4.22 + 4.86	12.00 (3.00 - 12.70)	3590 (540 - 4500)	3.34
	15 + 18 + 60 + 60	0.98 + 1.18 + 3.92 + 3.92	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.23 + 1.54 + 4.62 + 4.62	12.00 (3.00 - 12.70)	3590 (540 - 4500)	3.34
	15 + 25 + 25 + 25	1.50 + 2.50 + 2.50 + 2.50	9.00 (2.90 - 10.00)	2600 (550 - 3132)	3.46	1.97 + 3.34 + 3.34 + 3.34	12.00 (3.00 - 12.70)	2990 (540 - 4000)	4.01
	15 + 25 + 25 + 35	1.50 + 2.50 + 2.50 + 3.50	10.00 (2.90 - 11.10)	2800 (550 - 3500)	3.57	1.83 + 3.11 + 3.11 + 3.94	12.00 (3.00 - 12.70)	3190 (540 - 4000)	3.76
	15 + 25 + 25 + 42	1.40 + 2.34 + 2.34 + 3.93	10.00 (2.90 - 10.65)	3000 (550 - 3500)	3.33	1.71 + 2.91 + 2.91 + 4.46	12.00 (3.00 - 12.70)	3390 (540 - 4500)	3.54
	15 + 25 + 25 + 50	1.30 + 2.17 + 2.17 + 4.35	10.00 (2.90 - 10.80)	3160 (550 - 3500)	3.16	1.57 + 2.67 + 2.67 + 5.10	12.00 (3.00 - 12.70)	3590 (540 - 4500)	3.34
	15 + 25 + 25 + 60	1.20 + 2.00 + 2.00 + 4.8	10.00 (2.90 - 10.90)	3160 (550 - 3500)	3.16	1.47 + 2.50 + 2.50 + 5.52	12.00 (3.00 - 12.70)	3590 (540 - 4500)	3.34
	15 + 25 + 35 + 35	1.36 + 2.27 + 3.18 + 3.18	10.00 (2.90 - 10.50)	3000 (550 - 3500)	3.33	1.71 + 2.91 + 3.69 + 3.69	12.00 (3.00 - 12.70)	3090 (540 - 4000)	3.88
	15 + 25 + 35 + 42	1.28 + 2.14 + 2.99 + 3.59	10.00 (2.90 - 10.68)	3210 (550 - 3700)	3.12	1.61 + 2.74 + 3.46 + 4.19	12.00 (3.00 - 12.70)	3190 (540 - 4000)	3.76
	15 + 25 + 35 + 50	1.20 + 2.00 + 2.80 + 4.00	10.00 (2.90 - 10.80)	3400 (550 - 3700)	2.94	1.48 + 2.52 + 3.19 + 4.81	12.00 (3.00 - 12.70)	3650 (540 - 4500)	3.29
	15 + 25 + 35 + 60	1.11 + 1.85 + 2.59 + 4.44	10.00 (2.90 - 10.90)	3400 (550 - 3700)	2.94	1.40 + 2.37 + 3.00 + 5.23	12.00 (3.00 - 12.70)	3650 (540 - 4500)	3.29
	15 + 25 + 42 + 42	1.21 + 2.02 + 3.39 + 3.39	10.00 (2.90 - 10.63)	3200 (550 - 3700)	3.13	1.52 + 2.58 + 3.95 + 3.95	12.00 (3.00 - 12.70)	3590 (540 - 4500)	3.34
	15 + 25 + 42 + 50	1.14 + 1.89 + 3.18 + 3.79	10.00 (2.90 - 10.90)	3610 (550 - 4500)	2.77	1.40 + 2.39 + 3.65 + 4.56	12.00 (3.00 - 12.70)	3650 (540 - 4500)	3.29
	15 + 25 + 42 + 60	1.06 + 1.76 + 2.96 + 4.23	10.00 (2.90 - 11.20)	3720 (550 - 4500)	2.69	1.33 + 2.25 + 3.45 + 4.97	12.00 (3.00 - 12.70)	3650 (540 - 4500)	3.29
	15 + 25 + 50 + 50	1.07 + 1.79 + 3.57 + 3.57	10.00 (2.90 - 11.50)	3800 (550 - 4500)	2.63	1.30 + 2.22 + 4.24 + 4.24	12.00 (3.00 - 12.70)	3650 (540 - 4500)	3.29
	15 + 25 + 50 + 60	1.00 + 1.67 + 3.33 + 4.00	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.24 + 2.10 + 4.02 + 4.64	12.00 (3.00 - 12.70)	3650 (540 - 4500)	3.29
	15 + 35 + 35 + 35	1.25 + 2.92 + 2.92 + 2.92	10.00 (2.90 - 12.50)	3350 (550 - 3700)	2.99	1.61 + 3.46 + 3.46 + 3.46	12.00 (3.00 - 12.70)	3190 (540 - 4000)	3.76
	15 + 35 + 35 + 42	1.18 + 2.76 + 2.76 + 3.31	10.00 (2.90 - 12.50)	3350 (550 - 3700)	2.99	1.52 + 3.27 + 3.27 + 3.95	12.00 (3.00 - 12.70)	3290 (540 - 4000)	3.65
	15 + 35 + 35 + 50	1.11 + 2.59 + 2.59 + 3.70	10.00 (2.90 - 12.50)	3800 (550 - 4500)	2.63	1.40 + 3.02 + 3.02 + 4.56	12.00 (3.00 - 12.70)	3690 (540 - 4500)	3.25
	15 + 35 + 35 + 60	1.03 + 2.41 + 2.41 + 4.14	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.33 + 2.85 + 2.85 + 4.97	12.00 (3.00 - 12.70)	3690 (540 - 4500)	3.25
	15 + 35 + 42 + 42	1.12 + 2.61 + 3.13 + 3.13	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.44 + 3.09 + 3.74 + 3.74	12.00 (3.00 - 12.70)	3490 (540 - 4500)	3.44
	15 + 35 + 42 + 50	1.06 + 2.46 + 2.96 + 3.52	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.33 + 2.87 + 3.47 + 4.33	12.00 (3.00 - 12.70)	3790 (540 - 4500)	3.17
	15 + 35 + 42 + 60	0.99 + 2.3 + 2.76 + 3.95	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.26 + 2.72 + 3.28 + 4.74	12.00 (3.00 - 12.70)	3790 (540 - 4500)	3.17
	15 + 35 + 50 + 50	1.00 + 2.33 + 3.33 + 3.33	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.24 + 2.67 + 4.04 + 4.04	12.00 (3.00 - 12.70)	3890 (540 - 4500)	3.08
	15 + 35 + 50 + 60	0.94 + 2.19 + 3.13 + 3.75	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.18 + 2.54 + 3.84 + 4.43	12.00 (3.00 - 12.70)	3890 (540 - 4500)	3.08
4 units	15 + 42 + 42 + 42	1.06 + 2.98 + 2.98 + 2.98	10.00 (2.90 - 12.50)	3800 (550 - 4500)	2.63	1.36 + 3.55 + 3.55 + 3.55	12.00 (3.00 - 12.70)	3690 (540 - 4500)	3.25
	15 + 42 + 42 + 50	1.01 + 2.82 + 2.82 + 3.36	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.27 + 3.30 + 3.30 + 4.13	12.00 (3.00 - 12.70)	3890 (540 - 4500)	3.08
	15 + 42 + 42 + 60	0.94 + 2.64 + 2.64 + 3.77	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.21 + 3.14 + 3.14 + 4.52	12.00 (3.00 - 12.70)	3890 (540 - 4500)	3.08
	15 + 42 + 50 + 50	0.96 + 2.68 + 3.18 + 3.18	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.19 + 3.09 + 3.86 + 3.86	12.00 (3.00 - 12.70)	3990 (540 - 4000)	3.01
	18 + 18 + 18 + 18	1.80 + 1.80 + 1.80 + 1.80	7.20 (2.90 - 8.00)	2330 (550 - 3120)	3.09	2.50 + 2.50 + 2.50 + 2.50	10.00 (3.00 - 10.70)	2850 (540 - 4000)	3.51
	18 + 18 + 18 + 25	1.80 + 1.80 + 1.80 + 2.50	7.90 (2.90 - 8.80)	2380 (550 - 3120)	3.32	2.50 + 2.50 + 2.50 + 3.40	10.90 (3.00 - 11.60)	2950 (540 - 4000)	3.69
	18 + 18 + 18 + 35	1.80 + 1.80 + 1.80 + 3.50	8.90 (2.90 - 9.90)	2630 (550 - 3120)	3.38	2.50 + 2.50 + 2.50 + 4.30	11.80 (3.00 - 12.50)	2950 (540 - 4000)	4.00
	18 + 18 + 18 + 42	1.80 + 1.80 + 1.80 + 4.20	9.60 (2.90 - 10.20)	2640 (550 - 3460)	3.64	2.36 + 2.36 + 2.36 + 4.91	12.00 (3.00 - 12.70)	3050 (540 - 4000)	3.93
	18 + 18 + 18 + 50	1.73 + 1.73 + 1.73 + 4.81	10.00 (2.90 - 11.06)	2900 (550 - 3460)	3.45	2.14 + 2.14 + 2.14 + 5.57	12.00 (3.00 - 12.70)	3430 (540 - 4000)	3.50
	18 + 18 + 18 + 60	1.58 + 1.58 + 1.58 + 5.26	10.00 (2.90 - 12.50)	3000 (550 - 3460)	3.33	2.00 + 2.00 + 2.00 + 6.00	12.00 (3.00 - 12.70)	3430 (540 - 4000)	3.50
	18 + 18 + 25 + 25	1.80 + 1.80 + 2.50 + 2.50	8.60 (2.90 - 9.60)	2690 (550 - 3040)	3.20	2.50 + 2.50 + 3.40 + 3.40	12.00 (3.00 - 12.70)	2950 (540 - 4000)	4.00
	18 + 18 + 25 + 35	1.80 + 1.80 + 2.50 + 3.50	9.60 (2.90 - 10.10)	2690 (550 - 3460)	3.57	2.36 + 2.36 + 3.21 + 4.06	12.00 (3.00 - 12.70)	3050 (540 - 4000)	3.93
	18 + 18 + 25 + 42	1.75 + 1.75 + 2.43 + 4.08	10.00 (2.90 - 10.68)	2850 (550 - 3460)	3.51	2.21 + 2.21 + 3.00 + 4.59	12.00 (3.00 - 12.70)	3150 (540 - 4000)	3.81
	18 + 18 + 25 + 50	1.62 + 1.62 + 2.25 + 4.5	10.00 (2.90 - 11.15)	3000 (550 - 3460)	3.33	2.01 + 2.01 + 2.74 + 5.23	12.00 (3.00 - 12.70)	3490 (540 - 4000)	3.44
	18 + 18 + 25 + 60	1.49 + 1.49 + 2.07 + 4.96	10.00 (2.90 - 11.60)	3000 (550 - 3460)	3.33	1.89 + 1.89 + 2.57 + 5.66	12.00 (3.00 - 12.70)	3490 (540 - 4000)	3.44
	18 + 18 + 35 + 35	1.70 + 1.70 + 3.30 + 3.30	10.00 (2.90 - 10.60)	2900 (550 - 3460)	3.45	2.21 + 2.21 + 3.79 + 3.79	12.00 (3.00 - 12.70)	3130 (540 - 4000)	3.83
	18 + 18 + 35 + 42	1.59 + 1.59 + 3.10 + 3.72	10.00 (2.90 - 10.99)	3000 (550 - 3460)	3.33	2.07 + 2.07 + 3.56 + 4.30	12.00 (3.00 - 12.70)	3180 (540 - 4000)	3.77
	18 + 18 + 35 + 50	1.49 + 1.49 + 2.89 + 4.13	10.00 (2.90 - 11.50)	3200 (550 - 3700)	3.13	1.90 + 1.90 + 3.27 + 4.94	12.00 (3.00 - 12.70)	3690 (540 - 4500)	3.25
	18 + 18 + 35 + 60	1.37 + 1.37 + 2.67 + 4.58	10.00 (2.90 - 12.00)	3200 (550 - 3700)	3.13	1.79 + 1.79 + 3.07 + 5.36	12.00 (3.00 - 12.70)	3690 (540 - 4500)	3.25
	18 + 18 + 42 + 42	1.50 + 1.50 + 3.50 + 3.50	10.00 (2.90 - 10.33)	3200 (550 - 3700)	3.13	1.95 + 1.95 + 4.05 + 4.05	12.00 (3.00 - 12.70)	3690 (540 - 4500)	3.25
	18 + 18 + 42 + 50	1.41 + 1.41 + 3.28 + 3.91	10.00 (2.90 - 10.80)	3500 (550 - 4000)	2.86	1.80 + 1.80 + 3.74 + 4.67	12.00 (3.00 - 12.70)	3690 (540 - 4500)	3.25
	18 + 18 + 42 + 60	1.30 + 1.30 + 3.04 + 4.35	10.00 (2.90 - 11.30)	3500 (550 - 4000)	2.86	1.69 + 1.69 + 3.53 + 5.08	12.00 (3.00 - 12.70)	3690 (540 - 4500)	3.25
	18 + 18 + 50 + 50	1.32 + 1.32 + 3.68 + 3.68	10.00 (2.90 - 11.20)	3680 (550 - 4000)	2.72	1.67 + 1.67 + 4.33 + 4.33	12.00 (3.00 - 12.70)	3790 (540 - 4500)	3.17
	18 + 18 + 50 + 60	1.23 + 1.23 + 3.42 + 4.11	10.00 (2.90 - 11.60)	3680 (550 - 4000)	2.72	1.58 + 1.58 + 4.11 + 4.74	12.00 (3.00 - 12.70)	3790 (540 - 4500)	3.17
	18 + 18 + 60 + 60	1.23 + 1.23 + 4.11 + 4.11	10.00 (2.90 - 12.00)	3780 (550 - 4000)	2.65	1.50 + 1.50 + 4.50 + 4.50	12.00 (3.00 - 12.70)	3790 (540 - 4500)	3.17
	18 + 25 + 25 + 25	1.80 + 2.50 + 2.50 + 2.50	9.30 (2.90 - 10.40)	2600 (550 - 3460)	3.58	2.36 + 3.21 + 3.21 + 3.21	12.00 (3.00 - 12.70)	3050 (540 - 4000)	3.93
	18 + 25 + 25 + 35	1.75 + 2.43 + 2.43 + 3.40	10.00 (2.90 - 10.99)	2740 (550 - 3460)	3.65	2.21 + 3.00 + 3.00 + 3.79	12.00 (3.00 - 12.70)	3150 (540 - 4000)	3.81
	18 + 25 + 25 + 42	1.64 + 2.27 + 2.27 + 3.82	10.00 (2.90 - 11.30)	2900 (550 - 3460)	3.45	2.07 + 2.81 + 2.81 + 4.30	12.00 (3.00 - 12.70)	3290 (540 - 4000)	3.65
	18 + 25 + 25 + 50	1.53 + 2.12 + 2.12 + 4.24	10.00 (2.90 - 11.80)	3000 (550 - 3460)	3.33	1.90 + 2.58 + 2.58 + 4.94	12.00 (3.00 - 12.70)	3530 (540 - 4000)	3.40
	18 + 25 + 25 + 60	1.41 + 1.95 + 1.95 + 4.69	10.00 (2.90 - 12.30)	3100 (550 - 3460)	3.23	1.79 + 2.43 + 2.43 + 5.36	12.00 (3.00 - 12.70)	3530 (540 - 4000)	3.40
	18 + 25 + 35 + 35	1.59 + 2.21 + 3.10 + 3.10	10.00 (2.90 - 10.99)	3000 (550 - 3460)	3.33	2.07 + 2.81 + 3.56 + 3.56	12.00 (3.00 - 12.70)	3180 (540 - 4000)	3.77
	18 + 25 + 35 + 42	1.50 + 2.08 + 2.92 + 3.50	10.00 (2.90 - 11.30)	3100 (550 - 3460)	3.23	1.95 + 2.65 + 3.35 + 4.05	12.00 (3.00 - 12.70)	3280 (540 - 4000)	3.66
	18 + 25 + 35 + 50	1.41 + 1.95 + 2.73 + 3.91	10.00 (2.90 - 11.80)	3380 (550 - 4000)	2.96	1.80 + 2.44 + 3.09 + 4.67	12.00 (3.00 - 12.70)	3790 (540 - 4500)	3.17
	18 + 25 + 35 + 60	1.30 + 1.81 + 2.54 + 4.35	10.00 (2.90 - 12.30)	3550 (550 - 4000)	2.82	1.69 + 2.31 + 2.92 + 5.08	12.00 (3.00 - 12.70)	3790 (540 - 4500)	3.17
	18 + 25 + 42 + 42	1.42 + 1.97 + 3.31 + 3.31	10.00 (2.90 - 11.30)	3200 (550 - 3860)	3.13	1.84 + 2.50 + 3.83 + 3.83	12.00 (3.00 - 12.70)	3750 (540 - 4500)	3.20
	18 + 25 + 42 + 50	1.33 + 1.85 + 3.11 + 3.70	10.00 (2.90 - 11.80)	3690 (550 - 4000)	2.71	1.70 + 2.32 + 3.55 + 4.43	12.00 (3.00 - 12.70)	3750 (540 - 4500)	3.20
	18 + 25 + 42 + 60	1.24 + 1.72 + 2.90 + 4.14	10.00 (2.90 - 12.30)	3800 (550 - 4500)	2.63	1.61 + 2.19 + 3.35 + 4.84	12.00 (3.00 - 12.70)	3680 (540 - 4500)	3.26
	18 + 25 + 50 + 50	1.26 + 1.75 + 3.50 + 3.50	10.00 (2.90 - 12.00)	3980 (550 - 4500)	2.51	1.59 + 2.16 + 4.13 + 4.13	12.00 (3.00 - 12.70)	3680 (540 - 4500)	3.26

	RAM-110NP5E	COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
4 units	18 + 25 + 50 + 60	1.18 + 1.63 + 3.27 + 3.92	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.51 + 2.05 + 3.92 + 4.52	12.00 (3.00 - 12.70)	3890 (540 - 4500)	3.08
	18 + 25 + 60 + 60	1.10 + 1.53 + 3.68 + 3.68	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.44 + 1.95 + 4.31 + 4.31	12.00 (3.00 - 12.70)	3890 (540 - 4500)	3.08
	18 + 35 + 35 + 35	1.46 + 2.85 + 2.85 + 2.85	10.00 (2.90 - 10.90)	3500 (550 - 4000)	2.86	1.95 + 3.35 + 3.35 + 3.35	12.00 (3.00 - 12.70)	3280 (540 - 4000)	3.66
	18 + 35 + 35 + 42	1.38 + 2.69 + 2.69 + 3.23	10.00 (2.90 - 11.20)	3620 (550 - 4500)	2.76	1.84 + 3.17 + 3.17 + 3.83	12.00 (3.00 - 12.70)	3350 (540 - 4000)	3.58
	18 + 35 + 35 + 50	1.30 + 2.54 + 2.54 + 3.62	10.00 (2.90 - 11.70)	3800 (550 - 4500)	2.63	1.70 + 2.93 + 2.93 + 4.43	12.00 (3.00 - 12.70)	3850 (540 - 4000)	3.12
	18 + 35 + 35 + 60	1.22 + 2.36 + 2.36 + 4.05	10.00 (2.90 - 12.30)	3800 (550 - 4500)	2.63	1.61 + 2.77 + 2.77 + 4.84	12.00 (3.00 - 12.70)	3850 (540 - 4000)	3.12
	18 + 35 + 42 + 42	1.31 + 2.55 + 3.07 + 3.07	10.00 (2.90 - 11.50)	3600 (550 - 4500)	2.78	1.74 + 3.00 + 3.63 + 3.63	12.00 (3.00 - 12.70)	2630 (540 - 4000)	4.56
	18 + 35 + 42 + 50	1.24 + 2.41 + 2.90 + 3.45	10.00 (2.90 - 12.00)	3900 (550 - 4500)	2.56	1.62 + 2.79 + 3.37 + 4.22	12.00 (3.00 - 12.70)	3850 (540 - 5000)	3.12
	18 + 35 + 42 + 60	1.16 + 2.26 + 2.71 + 3.87	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.54 + 2.65 + 3.20 + 4.62	12.00 (3.00 - 12.70)	3850 (540 - 5000)	3.12
	18 + 35 + 50 + 50	1.18 + 2.29 + 3.27 + 3.27	10.00 (2.90 - 12.30)	4000 (550 - 4500)	2.50	1.52 + 2.61 + 3.94 + 3.94	12.00 (3.00 - 12.70)	4000 (540 - 5000)	3.00
	18 + 35 + 50 + 60	1.10 + 2.15 + 3.07 + 3.68	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.44 + 2.48 + 3.75 + 4.33	12.00 (3.00 - 12.70)	4000 (540 - 5000)	3.00
	18 + 42 + 42 + 42	1.25 + 2.92 + 2.92 + 2.92	10.00 (2.90 - 12.00)	3850 (550 - 4500)	2.60	1.66 + 3.45 + 3.45 + 3.45	12.00 (3.00 - 12.70)	4000 (540 - 5000)	3.00
	18 + 42 + 42 + 50	1.18 + 2.76 + 2.76 + 3.29	10.00 (2.90 - 12.30)	4000 (550 - 4500)	2.50	1.55 + 3.22 + 3.22 + 4.02	12.00 (3.00 - 12.70)	4100 (540 - 5000)	2.93
	18 + 42 + 42 + 60	1.11 + 2.59 + 2.59 + 3.70	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.47 + 3.06 + 3.06 + 4.41	12.00 (3.00 - 12.70)	4100 (540 - 5000)	2.93
	18 + 42 + 50 + 50	1.11 + 2.59 + 3.09 + 3.09	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.45 + 3.01 + 3.77 + 3.77	12.00 (3.00 - 12.70)	4200 (540 - 5000)	2.86
	25 + 25 + 25 + 25	2.50 + 2.50 + 2.50 + 2.50	10.00 (2.90 - 11.00)	2800 (550 - 3460)	3.57	3.00 + 3.00 + 3.00 + 3.00	12.00 (3.00 - 12.70)	3150 (540 - 4000)	3.81
	25 + 25 + 25 + 35	2.27 + 2.27 + 2.27 + 3.18	10.00 (2.90 - 11.50)	3000 (550 - 3700)	3.33	2.81 + 2.81 + 2.81 + 3.56	12.00 (3.00 - 12.70)	3290 (540 - 4000)	3.65
	25 + 25 + 25 + 42	2.14 + 2.14 + 2.14 + 3.59	10.00 (2.90 - 11.80)	3150 (550 - 3700)	3.17	2.65 + 2.65 + 2.65 + 4.05	12.00 (3.00 - 12.70)	3690 (540 - 5000)	3.25
	25 + 25 + 25 + 50	2.00 + 2.00 + 2.00 + 4.00	10.00 (2.90 - 12.30)	3450 (550 - 4000)	2.90	2.44 + 2.44 + 2.44 + 4.67	12.00 (3.00 - 12.70)	3790 (540 - 5000)	3.17
	25 + 25 + 25 + 60	1.85 + 1.85 + 1.85 + 4.44	10.00 (2.90 - 12.50)	3500 (550 - 4000)	2.86	2.31 + 2.31 + 2.31 + 5.08	12.00 (3.00 - 12.70)	3790 (540 - 5000)	3.17
	25 + 25 + 35 + 35	2.08 + 2.08 + 2.92 + 2.92	10.00 (2.90 - 11.90)	3200 (550 - 3700)	3.13	2.65 + 2.65 + 3.35 + 3.35	12.00 (3.00 - 12.70)	3490 (540 - 5000)	3.44
	25 + 25 + 35 + 42	1.97 + 1.97 + 2.76 + 3.31	10.00 (2.90 - 12.20)	3400 (550 - 4000)	2.94	2.50 + 2.50 + 3.17 + 3.83	12.00 (3.00 - 12.70)	3790 (540 - 5000)	3.17
	25 + 25 + 35 + 50	1.85 + 1.85 + 2.59 + 3.70	10.00 (2.90 - 12.60)	3600 (550 - 4500)	2.78	2.32 + 2.32 + 2.93 + 4.43	12.00 (3.00 - 12.70)	4000 (540 - 5000)	3.00
	25 + 25 + 35 + 60	1.72 + 1.72 + 2.41 + 4.14	10.00 (2.90 - 12.50)	3800 (550 - 4500)	2.63	2.19 + 2.19 + 2.77 + 4.84	12.00 (3.00 - 12.70)	4000 (540 - 5000)	3.00
	25 + 25 + 42 + 42	1.87 + 1.87 + 3.13 + 3.13	10.00 (2.90 - 12.50)	3600 (550 - 4500)	2.78	2.37 + 2.37 + 3.63 + 3.63	12.00 (3.00 - 12.70)	4000 (540 - 5000)	3.00
	25 + 25 + 42 + 50	1.76 + 1.76 + 2.96 + 3.52	10.00 (2.90 - 12.50)	3700 (550 - 4500)	2.70	2.21 + 2.21 + 3.37 + 4.22	12.00 (3.00 - 12.70)	4200 (540 - 5000)	2.86
	25 + 25 + 42 + 60	1.64 + 1.64 + 2.76 + 3.95	10.00 (2.90 - 12.50)	3980 (550 - 4500)	2.51	2.09 + 2.09 + 3.20 + 4.62	12.00 (3.00 - 12.70)	4200 (540 - 5000)	2.86
	25 + 25 + 50 + 50	1.67 + 1.67 + 3.33 + 3.33	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	2.06 + 2.06 + 3.94 + 3.94	12.00 (3.00 - 12.70)	4200 (540 - 5000)	2.86
	25 + 25 + 50 + 60	1.56 + 1.56 + 3.13 + 3.75	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.96 + 1.96 + 3.75 + 4.33	12.00 (3.00 - 12.70)	4200 (540 - 5000)	2.86
	25 + 35 + 35 + 35	1.92 + 2.69 + 2.69 + 2.69	10.00 (2.90 - 12.23)	3520 (550 - 4500)	2.84	2.50 + 3.17 + 3.17 + 3.17	12.00 (3.00 - 12.70)	3890 (540 - 5000)	3.08
	25 + 35 + 35 + 42	1.82 + 2.55 + 2.55 + 3.07	10.00 (2.90 - 12.50)	3630 (550 - 4500)	2.75	2.37 + 3.00 + 3.00 + 3.63	12.00 (3.00 - 12.70)	4000 (540 - 5000)	3.00
	25 + 35 + 35 + 50	1.72 + 2.41 + 2.41 + 3.45	10.00 (2.90 - 12.50)	3920 (550 - 4500)	2.55	2.21 + 2.79 + 2.79 + 4.22	12.00 (3.00 - 12.70)	4200 (540 - 5000)	2.86
	25 + 35 + 35 + 60	1.61 + 2.26 + 2.26 + 3.87	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	2.09 + 2.65 + 2.65 + 4.62	12.00 (3.00 - 12.70)	4200 (540 - 5000)	2.86
	25 + 35 + 42 + 42	1.74 + 2.43 + 2.92 + 2.92	10.00 (2.90 - 12.50)	3820 (550 - 4500)	2.62	2.25 + 2.85 + 3.45 + 3.45	12.00 (3.00 - 12.70)	4100 (540 - 5000)	2.93
	25 + 35 + 42 + 50	1.64 + 2.30 + 2.76 + 3.29	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	2.10 + 2.66 + 3.22 + 4.02	12.00 (3.00 - 12.70)	4200 (540 - 5000)	2.86
	25 + 35 + 42 + 60	1.54 + 2.16 + 2.59 + 3.70	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	2.00 + 2.53 + 3.06 + 4.41	12.00 (3.00 - 12.70)	4200 (540 - 5000)	2.86
	25 + 35 + 50 + 50	1.56 + 2.19 + 3.13 + 3.13	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.97 + 2.49 + 3.77 + 3.77	12.00 (3.00 - 12.70)	4200 (540 - 5000)	2.86
	35 + 35 + 35 + 35	2.50 + 2.50 + 2.50 + 2.50	10.00 (2.90 - 12.50)	3800 (550 - 4500)	2.63	3.00 + 3.00 + 3.00 + 3.00	12.00 (3.00 - 12.70)	4200 (540 - 5000)	2.86
	35 + 35 + 35 + 42	2.38 + 2.38 + 2.38 + 2.86	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	2.85 + 2.85 + 2.85 + 3.45	12.00 (3.00 - 12.70)	4300 (540 - 5000)	2.79
	35 + 35 + 35 + 50	2.26 + 2.26 + 2.26 + 3.23	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	2.66 + 2.66 + 2.66 + 4.02	12.00 (3.00 - 12.70)	4500 (540 - 5000)	2.67
	35 + 35 + 35 + 60	2.12 + 2.12 + 2.12 + 3.64	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	2.53 + 2.53 + 2.53 + 4.41	12.00 (3.00 - 12.70)	4500 (540 - 5000)	2.67
	35 + 35 + 42 + 42	2.27 + 2.27 + 2.73 + 2.73	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	2.72 + 2.72 + 3.28 + 3.28	12.00 (3.00 - 12.70)	4500 (540 - 5000)	2.67
	35 + 35 + 42 + 50	2.16 + 2.16 + 2.59 + 3.09	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	2.54 + 2.54 + 3.07 + 3.84	12.00 (3.00 - 12.70)	4500 (540 - 5000)	2.67
5 units	15 + 15 + 15 + 15 + 15	1.50 + 1.50 + 1.50 + 1.50 + 1.50	7.50 (2.40 - 8.00)	2200 (550 - 2800)	3.41	2.00 + 2.00 + 2.00 + 2.00 + 2.00	10.00 (3.40 - 10.70)	2350 (610 - 2820)	4.26
	15 + 15 + 15 + 15 + 18	1.50 + 1.50 + 1.50 + 1.50 + 1.80	7.80 (2.70 - 8.40)	2280 (550 - 2800)	3.42	2.00 + 2.00 + 2.00 + 2.00 + 2.50	10.50 (3.40 - 11.20)	2450 (610 - 2832)	4.29
	15 + 15 + 15 + 15 + 25	1.50 + 1.50 + 1.50 + 1.50 + 2.50	8.50 (2.90 - 9.20)	2330 (550 - 2800)	3.65	2.00 + 2.00 + 2.00 + 2.00 + 3.40	11.40 (3.40 - 12.10)	2550 (610 - 2880)	4.47
	15 + 15 + 15 + 15 + 35	1.50 + 1.50 + 1.50 + 1.50 + 3.50	9.50 (2.90 - 10.30)	2720 (550 - 3460)	3.49	1.95 + 1.95 + 1.95 + 1.95 + 4.20	12.00 (3.40 - 12.70)	2850 (610 - 4000)	4.21
	15 + 15 + 15 + 15 + 42	1.47 + 1.47 + 1.47 + 1.47 + 4.12	10.00 (2.90 - 10.39)	2930 (550 - 3460)	3.41	1.82 + 1.82 + 1.82 + 1.82 + 4.73	12.00 (3.40 - 12.70)	2950 (610 - 4000)	4.07
	15 + 15 + 15 + 15 + 50	1.36 + 1.36 + 1.36 + 1.36 + 4.55	10.00 (2.90 - 10.82)	3000 (550 - 3460)	3.33	1.66 + 1.66 + 1.66 + 1.66 + 5.38	12.00 (3.40 - 12.70)	3290 (610 - 4000)	3.65
	15 + 15 + 15 + 15 + 60	1.25 + 1.25 + 1.25 + 1.25 + 5.00	10.00 (2.90 - 11.30)	3000 (550 - 3460)	3.33	1.55 + 1.55 + 1.55 + 1.55 + 5.81	12.00 (3.40 - 12.70)	3290 (610 - 4000)	3.65
	15 + 15 + 15 + 18 + 18	1.50 + 1.50 + 1.50 + 1.80 + 1.80	8.10 (2.90 - 8.80)	2150 (550 - 2292)	3.77	2.00 + 2.00 + 2.00 + 2.50 + 2.50	11.00 (3.40 - 11.70)	2480 (610 - 4000)	4.44
	15 + 15 + 15 + 18 + 25	1.50 + 1.50 + 1.50 + 1.80 + 2.50	8.80 (2.90 - 9.60)	2200 (550 - 3460)	4.00	2.00 + 2.00 + 2.00 + 2.50 + 3.40	11.90 (3.40 - 12.60)	2580 (610 - 4000)	4.61
	15 + 15 + 15 + 18 + 35	1.50 + 1.50 + 1.50 + 1.80 + 3.50	9.80 (2.90 - 10.70)	2620 (550 - 3460)	3.74	1.88 + 1.88 + 1.88 + 2.34 + 4.03	12.00 (3.40 - 12.70)	2780 (610 - 4000)	4.32
	15 + 15 + 15 + 18 + 42	1.43 + 1.43 + 1.43 + 1.71 + 4.00	10.00 (2.90 - 11.00)	2620 (550 - 3460)	3.82	1.75 + 1.75 + 1.75 + 2.19 + 4.55	12.00 (3.40 - 12.70)	2780 (610 - 4000)	4.32
	15 + 15 + 15 + 18 + 50	1.33 + 1.33 + 1.33 + 1.59 + 4.42	10.00 (2.90 - 11.30)	3000 (550 - 3460)	3.33	1.60 + 1.60 + 1.60 + 2.00 + 5.20	12.00 (3.40 - 12.70)	3490 (610 - 4000)	3.44
	15 + 15 + 15 + 18 + 60	1.22 + 1.22 + 1.22 + 1.46 + 4.88	10.00 (2.90 - 11.60)	3000 (550 - 3460)	3.33	1.50 + 1.50 + 1.50 + 1.88 + 5.63	12.00 (3.40 - 12.70)	3490 (610 - 4000)	3.44
	15 + 15 + 15 + 25 + 25	1.50 + 1.50 + 1.50 + 2.50 + 2.50	9.50 (2.90 - 9.90)	3000 (550 - 3460)	3.17	1.88 + 1.88 + 1.88 + 3.19 + 3.19	12.00 (3.40 - 12.70)	2680 (610 - 4000)	4.48
	15 + 15 + 15 + 25 + 35	1.43 + 1.43 + 1.43 + 2.38 + 3.33	10.00 (2.90 - 10.30)	3000 (550 - 3460)	3.33	1.75 + 1.75 + 1.75 + 2.98 + 3.77	12.00 (3.40 - 12.70)	2980 (610 - 4000)	4.03
	15 + 15 + 15 + 25 + 42	1.34 + 1.34 + 1.34 + 2.23 + 3.75	10.00 (2.90 - 10.80)	3000 (550 - 3460)	3.33	1.64 + 1.64 + 1.64 + 2.79 + 4.27	12.00 (3.40 - 12.70)	2980 (610 - 4000)	4.03
	15 + 15 + 15 + 25 + 50	1.25 + 1.25 + 1.25 + 2.08 + 4.17	10.00 (2.90 - 11.30)	3500 (550 - 4000)	2.86	1.51 + 1.51 + 1.51 + 2.57 + 4.91	12.00 (3.40 - 12.70)	3590 (610 - 4000)	3.34
	15 + 15 + 15 + 25 + 60	1.15 + 1.15 + 1.15 + 1.92 + 4.62	10.00 (2.90 - 11.80)	3500 (550 - 4000)	2.86	1.42 + 1.42 + 1.42 + 2.41 + 5.33	12.00 (3.40 - 12.70)	3590 (610 - 4000)	3.34
	15 + 15 + 15 + 35 + 35	1.30 + 1.30 + 1.30 + 3.04 + 3.04	10.00 (2.90 - 12.50)	3500 (550 - 4000)	2.86	1.64 + 1.64 + 1.64 + 3.53 + 3.53	12.00 (3.40 - 12.70)	2980 (610 - 4000)	4.03
	15 + 15 + 15 + 35 + 42	1.23 + 1.23 + 1.23 + 2.87 + 3.44	10.00 (2.90 - 11.50)	3500 (550 - 4000)	2.86	1.55 + 1.55 + 1.55 + 3.33 + 4.03	12.00 (3.40 - 12.70)	3290 (610 - 4000)	3.65
	15 + 15 + 15 + 35 + 50	1.15 + 1.15 + 1.15 + 2.69 + 3.85	10.00 (2.90 - 12.00)	4000 (550 - 4500)	2.50	1.43 + 1.43 + 1.43 + 3.07 + 4.64	12.00 (3.40 - 12.70)	3690 (610 - 4500)	3.25
	15 + 15 + 15 + 35 + 60	1.07 + 1.07 + 1.07 + 2.50 + 4.29	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.35 + 1.35 + 1.35 + 2.9 + 5.06	12.00 (3.40 - 12.70)	3690 (610 - 4500)	3.25
	15 + 15 + 15 + 42 + 42	1.16 + 1.16 + 1.16 + 3.26 + 3.26	10.00 (2.90 - 11.80)	4000 (550 - 4500)	2.50	1.46 + 1.46 + 1.46 + 3.80 + 3.80	12.00 (3.40 - 12.70)	3380 (610 - 4500)	3.55
	15 + 15 + 15 + 42 + 50	1.09 + 1.09 + 1.09 + 3.07 + 3.65	10.00 (2.90 - 12.10)	4000 (550 - 4500)	2.50	1.36 + 1.36 + 1.36 + 3.53 + 4.41	12.00 (3.40 - 12.70)	3780 (610 - 4500)	3.17
	15 + 15 + 15 + 42 + 60	1.02 + 1.02 + 1.02 + 2.86 + 4.08	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.28 + 1.28 + 1.28 + 3.34 + 4.81	12.00 (3.40 - 12.70)	3780 (610 - 4500)	3.17
	15 + 15 + 15 + 50 + 50	1.03 + 1.03 + 1.03 + 3.45 + 3.45	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.26 + 1.26 + 1.26 + 4.11 + 4.11	12.00 (3.40 - 12.70)	4000 (610 - 4500)	3.00
	15 + 15 + 15 + 50 + 60	0.97 + 0.97 + 0.97 + 3.23 + 3.87	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.20 + 1.20 + 1.20 + 3.90 + 4.50	12.00 (3.40 - 12.70)	4000 (610 - 4500)	3.00
	15 + 15 + 18 + 18 + 18	1.50 + 1.50 + 1.80 + 1.80 + 1.80	8.40 (2.90 - 9.20)	2180 (550 - 2292)	3.85	2.00 + 2.00 + 2.50 + 2.50 + 2.50	12.00 (3.40 - 12.70)	2530 (610 - 4000)	4.55
	15 + 15 + 18 + 18 + 25	1.50 + 1.50 + 1.80 + 1.80 + 2.50	9.10 (2.90 - 9.70)	2490 (550 - 3460)	3.65	1.94 + 1.94 + 2.42 + 2.42 + 3.29	12.00 (3.40 - 12.70)	2630 (610 - 4000)	4.56
	15 + 15 + 18 + 18 + 35	1.49 + 1.49 + 1.78 + 1.78 + 3.47	10.00 (2.90 - 10.30)	2690 (550 - 3460)	3.72	1.80 + 1.80 + 2.26 + 2.26 + 3.88	12.00 (3.40 - 12.70)	2890 (610 - 4000)	4.15
	15 + 15 + 18 + 18 + 42	1.39 + 1.39 + 1.67 + 1.67 + 3.89	10.00 (2.90 - 10.56)	2690 (550 - 3460)	3.72	1.69 + 1.69 + 2.11 + 2.11 + 4.39	12.00 (3.40 - 12.70)	2890 (610 - 4000)	4.15
	15 + 15 + 18 + 18 + 50	1.29 + 1.29 + 1.55 + 1.55 + 4.31	10.00 (2.90 - 12.50)	3000 (550 - 3660)	3.33	1.55 + 1.55 + 1.94 + 1.94 + 5.03	12.00 (3.40 - 12.70)	3590 (610 - 4000)	3.34
	15 + 15 + 18 + 18 + 60	1.19 + 1.19 + 1.43 + 1.43 + 4.76	10.00 (2.90 - 11.50)	3000 (550 - 3660)	3.33	1.45 + 1.45 + 1.82 + 1.82 + 5.45	12.00 (3.40 - 12.70)	3590 (610 - 4000)	3.34
	15 + 15 + 18 + 25 + 25	1.50 + 1.50 + 1.80 + 2.50 + 2.50	9.80 (2.90 - 10.30)	2690 (550 - 3460)	3.64	1.80 + 1.80 + 2.26 + 3.07 + 3.07	12.00 (3.40 - 12.70)	2780 (610 - 4000)	4.32

Indoor unit combinations

Standard multi-split

	RAM-110NP5E	COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
	15 + 15 + 18 + 25 + 35	1.39 + 1.39 + 1.67 + 2.31 + 3.24	10.00 (2.90 - 10.80)	2690 (550 - 3460)	3.72	1.69 + 1.69 + 2.11 + 2.87 + 3.63	12.00 (3.40 - 12.70)	3030 (610 - 4000)	3.96
	15 + 15 + 18 + 25 + 42	1.30 + 1.30 + 1.57 + 2.17 + 3.65	10.00 (2.90 - 11.10)	3000 (550 - 3660)	3.33	1.59 + 1.59 + 1.99 + 2.70 + 4.13	12.00 (3.40 - 12.70)	3030 (610 - 4000)	3.96
	15 + 15 + 18 + 25 + 50	1.22 + 1.22 + 1.46 + 2.03 + 4.07	10.00 (2.90 - 11.60)	3380 (550 - 4000)	2.96	1.46 + 1.46 + 1.83 + 2.49 + 4.76	12.00 (3.40 - 12.70)	3650 (610 - 4000)	3.29
	15 + 15 + 18 + 25 + 60	1.13 + 1.13 + 1.35 + 1.88 + 4.51	10.00 (2.90 - 12.10)	3380 (550 - 4000)	2.96	1.38 + 1.38 + 1.72 + 2.34 + 5.17	12.00 (3.40 - 12.70)	3650 (610 - 4000)	3.29
	15 + 15 + 18 + 35 + 35	1.27 + 1.27 + 1.53 + 2.97 + 2.97	10.00 (2.90 - 12.50)	3380 (550 - 4000)	2.96	1.59 + 1.59 + 1.99 + 3.42 + 3.42	12.00 (3.40 - 12.70)	3190 (610 - 4000)	3.76
	15 + 15 + 18 + 35 + 42	1.20 + 1.20 + 1.44 + 2.80 + 3.36	10.00 (2.90 - 12.50)	3380 (550 - 4000)	2.96	1.50 + 1.50 + 1.88 + 3.23 + 3.90	12.00 (3.40 - 12.70)	3290 (610 - 4000)	3.65
	15 + 15 + 18 + 35 + 50	1.13 + 1.13 + 1.35 + 2.63 + 3.76	10.00 (2.90 - 12.50)	3820 (550 - 4500)	2.62	1.39 + 1.39 + 1.73 + 2.98 + 4.51	12.00 (3.40 - 12.70)	3780 (610 - 4500)	3.17
	15 + 15 + 18 + 35 + 60	1.05 + 1.05 + 1.26 + 2.45 + 4.20	10.00 (2.90 - 12.50)	3820 (550 - 4500)	2.62	1.31 + 1.31 + 1.64 + 2.82 + 4.92	12.00 (3.40 - 12.70)	3780 (610 - 4500)	3.17
	15 + 15 + 18 + 42 + 42	1.14 + 1.14 + 1.36 + 3.18 + 3.18	10.00 (2.90 - 11.60)	3820 (550 - 4500)	2.62	1.42 + 1.42 + 1.78 + 3.69 + 3.69	12.00 (3.40 - 12.70)	3780 (610 - 4500)	3.17
	15 + 15 + 18 + 42 + 50	1.07 + 1.07 + 1.29 + 3.00 + 3.57	10.00 (2.90 - 12.10)	4000 (550 - 4500)	2.50	1.32 + 1.32 + 1.65 + 3.43 + 4.29	12.00 (3.40 - 12.70)	3780 (610 - 4500)	3.17
	15 + 15 + 18 + 42 + 60	1.00 + 1.00 + 1.20 + 2.80 + 4.00	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.25 + 1.25 + 1.56 + 3.25 + 4.69	12.00 (3.40 - 12.70)	3780 (610 - 4500)	3.17
	15 + 15 + 18 + 50 + 50	1.01 + 1.01 + 1.22 + 3.38 + 3.38	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.23 + 1.23 + 1.54 + 4.00 + 4.00	12.00 (3.40 - 12.70)	3890 (610 - 4500)	3.08
	15 + 15 + 18 + 50 + 60	0.95 + 0.95 + 1.14 + 3.16 + 3.80	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.17 + 1.17 + 1.46 + 3.80 + 4.39	12.00 (3.40 - 12.70)	3890 (610 - 4500)	3.08
	15 + 15 + 25 + 25 + 25	1.43 + 1.43 + 2.38 + 2.38 + 2.38	10.00 (2.90 - 11.05)	2690 (550 - 3460)	3.72	1.69 + 1.69 + 2.87 + 2.87 + 2.87	12.00 (3.40 - 12.70)	2890 (610 - 4000)	4.15
	15 + 15 + 25 + 25 + 35	1.30 + 1.30 + 2.17 + 2.17 + 3.04	10.00 (2.90 - 11.50)	3000 (550 - 3460)	3.33	1.59 + 1.59 + 2.70 + 2.70 + 3.42	12.00 (3.40 - 12.70)	3130 (610 - 4000)	3.83
	15 + 15 + 25 + 25 + 42	1.23 + 1.23 + 2.05 + 2.05 + 3.44	10.00 (2.90 - 11.80)	3280 (550 - 3800)	3.05	1.50 + 1.50 + 2.55 + 2.55 + 3.90	12.00 (3.40 - 12.70)	3130 (610 - 4000)	3.83
	15 + 15 + 25 + 25 + 50	1.15 + 1.15 + 1.92 + 1.92 + 3.85	10.00 (2.90 - 12.10)	3480 (550 - 4000)	2.87	1.39 + 1.39 + 2.36 + 2.36 + 4.51	12.00 (3.40 - 12.70)	3780 (610 - 4000)	3.17
	15 + 15 + 25 + 25 + 60	1.07 + 1.07 + 1.79 + 1.79 + 4.29	10.00 (2.90 - 12.50)	3480 (550 - 4000)	2.87	1.31 + 1.31 + 2.23 + 2.23 + 4.92	12.00 (3.40 - 12.70)	3780 (610 - 4000)	3.17
	15 + 15 + 25 + 35 + 35	1.20 + 1.20 + 2.00 + 2.80 + 2.80	10.00 (2.90 - 12.00)	3280 (550 - 3800)	3.05	1.50 + 1.50 + 2.55 + 3.23 + 3.23	12.00 (3.40 - 12.70)	3250 (610 - 4000)	3.69
	15 + 15 + 25 + 35 + 42	1.14 + 1.14 + 1.89 + 2.65 + 3.18	10.00 (2.90 - 12.50)	3480 (550 - 4000)	2.87	1.42 + 1.42 + 2.41 + 3.05 + 3.69	12.00 (3.40 - 12.70)	3350 (610 - 4000)	3.58
	15 + 15 + 25 + 35 + 50	1.07 + 1.07 + 1.79 + 2.50 + 3.57	10.00 (2.90 - 12.50)	3620 (550 - 4000)	2.76	1.32 + 1.32 + 2.24 + 2.84 + 4.29	12.00 (3.40 - 12.70)	3890 (610 - 5000)	3.08
	15 + 15 + 25 + 35 + 60	1.00 + 1.00 + 1.67 + 2.33 + 4.00	10.00 (2.90 - 12.50)	3620 (550 - 4000)	2.76	1.25 + 1.25 + 2.13 + 2.69 + 4.69	12.00 (3.40 - 12.70)	3890 (610 - 5000)	3.08
	15 + 15 + 25 + 42 + 42	1.08 + 1.08 + 1.80 + 3.02 + 3.02	10.00 (2.90 - 12.50)	3620 (550 - 4000)	2.76	1.35 + 1.35 + 2.29 + 3.51 + 3.51	12.00 (3.40 - 12.70)	3890 (610 - 5000)	3.08
	15 + 15 + 25 + 42 + 50	1.02 + 1.02 + 1.70 + 2.86 + 3.40	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.26 + 1.26 + 2.14 + 3.27 + 4.08	12.00 (3.40 - 12.70)	3890 (610 - 5000)	3.08
	15 + 15 + 25 + 50 + 50	0.97 + 0.97 + 1.61 + 3.23 + 3.23	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.18 + 1.18 + 2.00 + 3.82 + 3.82	12.00 (3.40 - 12.70)	4000 (610 - 5000)	3.00
	15 + 15 + 25 + 50 + 60	0.91 + 0.91 + 1.52 + 3.03 + 3.64	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.12 + 1.12 + 1.91 + 3.64 + 4.21	12.00 (3.40 - 12.70)	4000 (610 - 5000)	3.00
	15 + 15 + 35 + 35 + 35	1.11 + 1.11 + 2.59 + 2.59 + 2.59	10.00 (2.90 - 12.50)	3620 (550 - 4000)	2.76	1.42 + 1.42 + 3.05 + 3.05 + 3.05	12.00 (3.40 - 12.70)	3360 (610 - 4000)	3.57
	15 + 15 + 35 + 35 + 42	1.06 + 1.06 + 2.46 + 2.46 + 2.96	10.00 (2.90 - 12.50)	3620 (550 - 4000)	2.76	1.35 + 1.35 + 2.90 + 2.90 + 3.51	12.00 (3.40 - 12.70)	3360 (610 - 4000)	3.57
	15 + 15 + 35 + 35 + 50	1.00 + 1.00 + 2.33 + 2.33 + 3.33	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.26 + 1.26 + 2.70 + 2.70 + 4.08	12.00 (3.40 - 12.70)	3890 (610 - 5000)	3.08
	15 + 15 + 35 + 35 + 60	0.94 + 0.94 + 2.19 + 2.19 + 3.75	10.00 (2.90 - 12.50)	4000 (550 - 3460)	2.50	1.19 + 1.19 + 2.57 + 2.57 + 4.48	12.00 (3.40 - 12.70)	3890 (610 - 5000)	3.08
	15 + 18 + 18 + 18 + 18	1.50 + 1.80 + 1.80 + 1.80 + 1.80	8.70 (2.90 - 9.60)	2530 (550 - 3460)	3.44	2.00 + 2.50 + 2.50 + 2.50 + 2.50	12.00 (3.40 - 12.70)	2630 (610 - 4000)	4.56
	15 + 18 + 18 + 18 + 25	1.50 + 1.80 + 1.80 + 1.80 + 2.50	9.40 (2.90 - 10.10)	2690 (550 - 3460)	3.49	1.86 + 2.33 + 2.33 + 2.33 + 3.16	12.00 (3.40 - 12.70)	2730 (610 - 4000)	4.40
	15 + 18 + 18 + 18 + 35	1.44 + 1.73 + 1.73 + 1.73 + 3.37	10.00 (2.90 - 10.60)	2690 (550 - 3460)	3.72	1.74 + 2.17 + 2.17 + 2.17 + 3.74	12.00 (3.40 - 12.70)	2830 (610 - 4000)	4.24
	15 + 18 + 18 + 18 + 42	1.35 + 1.62 + 1.62 + 1.62 + 3.78	10.00 (2.90 - 10.90)	3000 (550 - 3460)	3.33	1.63 + 2.04 + 2.04 + 2.04 + 4.24	12.00 (3.40 - 12.70)	3030 (610 - 4000)	3.96
	15 + 18 + 18 + 18 + 50	1.26 + 1.51 + 1.51 + 1.51 + 4.20	10.00 (2.90 - 11.40)	3260 (550 - 3460)	3.07	1.50 + 1.88 + 1.88 + 1.88 + 4.88	12.00 (3.40 - 12.70)	3690 (610 - 4000)	3.25
5 units	15 + 18 + 18 + 18 + 60	1.16 + 1.40 + 1.40 + 1.40 + 4.65	10.00 (2.90 - 12.00)	3260 (550 - 3460)	3.07	1.41 + 1.76 + 1.76 + 1.76 + 5.29	12.00 (3.40 - 12.70)	3690 (610 - 4000)	3.25
	15 + 18 + 18 + 25 + 25	1.49 + 1.78 + 1.78 + 2.48 + 2.48	10.00 (2.90 - 10.60)	2690 (550 - 3460)	3.72	1.74 + 2.17 + 2.17 + 2.96 + 2.96	12.00 (3.40 - 12.70)	2890 (610 - 4000)	4.15
	15 + 18 + 18 + 25 + 35	1.35 + 1.62 + 1.62 + 2.25 + 3.15	10.00 (2.90 - 11.08)	2690 (550 - 3460)	3.72	1.63 + 2.04 + 2.04 + 2.78 + 3.51	12.00 (3.40 - 12.70)	2980 (610 - 4000)	4.03
	15 + 18 + 18 + 25 + 42	1.27 + 1.53 + 1.53 + 2.12 + 3.56	10.00 (2.90 - 11.40)	3260 (550 - 3800)	3.07	1.54 + 1.92 + 1.92 + 2.62 + 4.00	12.00 (3.40 - 12.70)	3130 (610 - 4000)	3.83
	15 + 18 + 18 + 25 + 50	1.19 + 1.43 + 1.43 + 1.98 + 3.97	10.00 (2.90 - 11.70)	3260 (550 - 3800)	3.07	1.42 + 1.78 + 1.78 + 2.41 + 4.62	12.00 (3.40 - 12.70)	3790 (610 - 4500)	3.17
	15 + 18 + 18 + 25 + 60	1.10 + 1.32 + 1.32 + 1.84 + 4.41	10.00 (2.90 - 12.20)	3550 (550 - 4000)	2.82	1.34 + 1.68 + 1.68 + 2.28 + 5.03	12.00 (3.40 - 12.70)	3790 (610 - 4500)	3.17
	15 + 18 + 18 + 35 + 35	1.24 + 1.49 + 1.49 + 2.89 + 2.89	10.00 (2.90 - 12.50)	3260 (550 - 4000)	3.07	1.54 + 1.92 + 1.92 + 3.31 + 3.31	12.00 (3.40 - 12.70)	3030 (610 - 4000)	3.96
	15 + 18 + 18 + 35 + 42	1.17 + 1.41 + 1.41 + 2.73 + 3.28	10.00 (2.90 - 12.50)	3550 (550 - 4000)	2.82	1.45 + 1.82 + 1.82 + 3.13 + 3.78	12.00 (3.40 - 12.70)	3250 (610 - 4000)	3.69
	15 + 18 + 18 + 35 + 50	1.10 + 1.32 + 1.32 + 2.57 + 3.68	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.35 + 1.69 + 1.69 + 2.9 + 4.38	12.00 (3.40 - 12.70)	3890 (610 - 5000)	3.08
	15 + 18 + 18 + 35 + 60	1.03 + 1.23 + 1.23 + 2.40 + 4.11	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.28 + 1.60 + 1.60 + 2.74 + 4.79	12.00 (3.40 - 12.70)	3890 (610 - 5000)	3.08
	15 + 18 + 18 + 42 + 42	1.11 + 1.33 + 1.33 + 3.11 + 3.11	10.00 (2.90 - 12.50)	3680 (550 - 4500)	2.72	1.38 + 1.72 + 1.72 + 3.59 + 3.59	12.00 (3.40 - 12.70)	3890 (610 - 5000)	3.08
	15 + 18 + 18 + 42 + 50	1.05 + 1.26 + 1.26 + 2.94 + 3.50	10.00 (2.90 - 12.50)	3680 (550 - 4500)	2.72	1.28 + 1.60 + 1.60 + 3.34 + 4.17	12.00 (3.40 - 12.70)	3890 (610 - 5000)	3.08
	15 + 18 + 18 + 42 + 60	0.98 + 1.18 + 1.18 + 2.75 + 3.92	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.22 + 1.52 + 1.52 + 3.17 + 4.57	12.00 (3.40 - 12.70)	3890 (610 - 5000)	3.08
	15 + 18 + 18 + 50 + 50	0.99 + 1.19 + 1.19 + 3.31 + 3.31	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.20 + 1.50 + 1.50 + 3.90 + 3.90	12.00 (3.40 - 12.70)	4000 (610 - 5000)	3.00
	15 + 18 + 18 + 50 + 60	0.93 + 1.12 + 1.12 + 3.11 + 3.73	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.14 + 1.43 + 1.43 + 3.71 + 4.29	12.00 (3.40 - 12.70)	4000 (610 - 5000)	3.00
	15 + 18 + 25 + 25 + 25	1.39 + 1.67 + 2.31 + 2.31 + 2.31	10.00 (2.90 - 11.11)	3000 (550 - 3460)	3.33	1.63 + 2.04 + 2.78 + 2.78 + 2.78	12.00 (3.40 - 12.70)	2980 (610 - 4000)	4.03
	15 + 18 + 25 + 25 + 35	1.27 + 1.53 + 2.12 + 2.12 + 2.97	10.00 (2.90 - 12.50)	3000 (550 - 3460)	3.33	1.54 + 1.92 + 2.62 + 2.62 + 3.31	12.00 (3.40 - 12.70)	3030 (610 - 4000)	3.96
	15 + 18 + 25 + 25 + 42	1.20 + 1.44 + 2.00 + 2.00 + 3.36	10.00 (2.90 - 12.50)	3260 (550 - 3800)	3.07	1.45 + 1.82 + 2.47 + 2.47 + 3.78	12.00 (3.40 - 12.70)	3250 (610 - 4000)	3.69
	15 + 18 + 25 + 25 + 50	1.13 + 1.35 + 1.88 + 1.88 + 3.76	10.00 (2.90 - 12.50)	3680 (550 - 4000)	2.72	1.35 + 1.69 + 2.29 + 2.29 + 4.38	12.00 (3.40 - 12.70)	3890 (610 - 5000)	3.08
	15 + 18 + 25 + 25 + 60	1.05 + 1.26 + 1.75 + 1.75 + 4.20	10.00 (2.90 - 12.50)	3680 (550 - 4000)	2.72	1.28 + 1.60 + 2.17 + 2.17 + 4.79	12.00 (3.40 - 12.70)	3890 (610 - 5000)	3.08
	15 + 18 + 25 + 35 + 35	1.17 + 1.41 + 1.95 + 2.73 + 2.73	10.00 (2.90 - 12.50)	3680 (550 - 4000)	2.72	1.45 + 1.82 + 2.47 + 3.13 + 3.13	12.00 (3.40 - 12.70)	3130 (610 - 4000)	3.83
	15 + 18 + 25 + 35 + 42	1.11 + 1.33 + 1.85 + 2.59 + 3.11	10.00 (2.90 - 12.50)	3680 (550 - 4000)	2.72	1.38 + 1.72 + 2.34 + 2.97 + 3.59	12.00 (3.40 - 12.70)	3290 (610 - 4000)	3.65
	15 + 18 + 25 + 35 + 50	1.05 + 1.26 + 1.75 + 2.45 + 3.50	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.28 + 1.60 + 2.18 + 2.76 + 4.17	12.00 (3.40 - 12.70)	4000 (610 - 5000)	3.00
	15 + 18 + 25 + 35 + 60	0.98 + 1.18 + 1.63 + 2.29 + 3.92	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.22 + 1.52 + 2.07 + 2.62 + 4.57	12.00 (3.40 - 12.70)	4000 (610 - 5000)	3.00
	15 + 18 + 25 + 42 + 42	1.06 + 1.27 + 1.76 + 2.96 + 2.96	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.31 + 1.64 + 2.23 + 3.41 + 3.41	12.00 (3.40 - 12.70)	4000 (610 - 5000)	3.00
	15 + 18 + 25 + 42 + 50	1.00 + 1.20 + 1.67 + 2.80 + 3.33	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.22 + 1.53 + 2.08 + 3.18 + 3.98	12.00 (3.40 - 12.70)	4200 (610 - 5000)	2.86
	15 + 18 + 25 + 42 + 60	0.94 + 1.13 + 1.56 + 2.63 + 3.75	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.17 + 1.46 + 1.98 + 3.03 + 4.37	12.00 (3.40 - 12.70)	4200 (610 - 5000)	2.86
	15 + 18 + 35 + 35 + 35	1.09 + 1.30 + 2.54 + 2.54 + 2.54	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.38 + 1.72 + 2.97 + 2.97 + 2.97	12.00 (3.40 - 12.70)	3280 (610 - 4000)	3.66
	15 + 18 + 35 + 35 + 42	1.03 + 1.24 + 2.41 + 2.41 + 2.90	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.31 + 1.64 + 2.82 + 2.82 + 3.41	12.00 (3.40 - 12.70)	3390 (610 - 4000)	3.54
	15 + 18 + 35 + 35 + 50	0.98 + 1.18 + 2.29 + 2.29 + 3.27	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.22 + 1.53 + 2.63 + 2.63 + 3.98	12.00 (3.40 - 12.70)	4000 (610 - 5000)	3.00
	15 + 25 + 25 + 25 + 25	1.30 + 2.17 + 2.17 + 2.17 + 2.17	10.00 (2.90 - 12.50)	3000 (550 - 3460)	3.33	1.54 + 2.62 + 2.62 + 2.62 + 2.62	12.00 (3.40 - 12.70)	3090 (610 - 4000)	3.88
	15 + 25 + 25 + 25 + 35	1.20 + 2.00 + 2.00 + 2.00 + 2.80	10.00 (2.90 - 12.50)	3000 (550 - 3460)	3.33	1.45 + 2.47 + 2.47 + 2.47 + 3.13	12.00 (3.40 - 12.70)	3190 (610 - 4000)	3.76
	15 + 25 + 25 + 25 + 42	1.14 + 1.89 + 1.89 + 1.89 + 3.18	10.00 (2.90 - 12.50)	3260 (550 - 3800)	3.07	1.38 + 2.34 + 2.34 + 2.34 + 3.59	12.00 (3.40 - 12.70)	3290 (610 - 4000)	3.65
	15 + 25 + 25 + 25 + 50	1.07 + 1.79 + 1.79 + 1.79 + 3.57	10.00 (2.90 - 12.50)	3680 (550 - 4000)	2.72	1.28 + 2.18 + 2.18 + 2.18 + 4.17	12.00 (3.40 - 12.70)	4000 (610 - 4000)	3.00
	15 + 25 + 25 + 25 + 60	1.00 + 1.67 + 1.67 + 1.67 + 4.00	10.00 (2.90 - 12.50)	3680 (550 - 4000)	2.72	1.22 + 2.07 + 2.07 + 2.07 + 4.57	12.00 (3.40 - 12.70)	4000 (610 - 4000)	3.00
	15 + 25 + 25 + 35 + 35	1.11 + 1.85 + 1.85 + 2.59 + 2.59	10.00 (2.90 - 12.50)	3680 (550 - 4000)	2.72	1.38 + 2.34 + 2.34 + 2.97 + 2.97	12.00 (3.40 - 12.70)	3290 (610 - 4000)	3.65

	RAM-110NP5E	COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
	15 + 25 + 25 + 35 + 42	1.06 + 1.76 + 1.76 + 2.46 + 2.96	10.00 (2.90 - 12.50)	3680 (550 - 4000)	2.72	1.31 + 2.23 + 2.23 + 2.82 + 3.41	12.00 (3.40 - 12.70)	3390 (610 - 4000)	3.54
	15 + 25 + 25 + 35 + 50	1.00 + 1.67 + 1.67 + 2.33 + 3.33	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.22 + 2.08 + 2.08 + 2.63 + 3.98	12.00 (3.40 - 12.70)	4100 (610 - 4000)	2.93
	15 + 25 + 25 + 35 + 60	0.94 + 1.56 + 1.56 + 2.19 + 3.75	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.17 + 1.98 + 1.98 + 2.50 + 4.37	12.00 (3.40 - 12.70)	4100 (610 - 4000)	2.93
	15 + 25 + 25 + 42 + 42	1.01 + 1.68 + 1.68 + 2.82 + 2.82	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.25 + 2.13 + 2.13 + 3.25 + 3.25	12.00 (3.40 - 12.70)	4000 (610 - 4000)	3.00
	15 + 25 + 25 + 42 + 50	0.96 + 1.59 + 1.59 + 2.68 + 3.18	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.17 + 1.99 + 1.99 + 3.04 + 3.80	12.00 (3.40 - 12.70)	4200 (610 - 4000)	2.86
	15 + 25 + 25 + 50 + 50	0.91 + 1.52 + 1.52 + 3.03 + 3.03	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.10 + 1.87 + 1.87 + 3.58 + 3.58	12.00 (3.40 - 12.70)	4200 (610 - 4000)	2.86
	15 + 25 + 35 + 35 + 35	1.03 + 1.72 + 2.41 + 2.41 + 2.41	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.31 + 2.23 + 2.82 + 2.82 + 2.82	12.00 (3.40 - 12.70)	3390 (610 - 4000)	3.54
	15 + 25 + 35 + 35 + 42	0.99 + 1.64 + 2.30 + 2.30 + 2.76	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.25 + 2.13 + 2.69 + 2.69 + 3.25	12.00 (3.40 - 12.70)	3490 (610 - 4000)	3.44
	15 + 25 + 35 + 35 + 50	0.94 + 1.56 + 2.19 + 2.19 + 3.13	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.17 + 1.99 + 2.52 + 2.52 + 3.80	12.00 (3.40 - 12.70)	4200 (610 - 4000)	2.86
	15 + 25 + 35 + 42 + 42	0.94 + 1.57 + 2.20 + 2.64 + 2.64	10.00 (2.90 - 12.50)	4000 (550 - 4500)	2.50	1.19 + 2.03 + 2.57 + 3.10 + 3.10	12.00 (3.40 - 12.70)	4200 (610 - 4000)	2.86
	18 + 18 + 18 + 18 + 18	1.80 + 1.80 + 1.80 + 1.80 + 1.80	9.00 (2.90 - 10.00)	2530 (600 - 3040)	3.56	2.40 + 2.40 + 2.40 + 2.40 + 2.40	12.00 (3.40 - 12.70)	2780 (610 - 4000)	4.32
	18 + 18 + 18 + 18 + 25	1.80 + 1.80 + 1.80 + 1.80 + 2.50	9.70 (2.90 - 10.80)	2690 (600 - 3040)	3.61	2.24 + 2.24 + 2.24 + 2.24 + 3.04	12.00 (3.40 - 12.70)	2890 (610 - 4000)	4.15
	18 + 18 + 18 + 18 + 35	1.68 + 1.68 + 1.68 + 1.68 + 3.27	10.00 (2.90 - 11.12)	2690 (600 - 3040)	3.72	2.10 + 2.10 + 2.10 + 2.10 + 3.61	12.00 (3.40 - 12.70)	2980 (610 - 4000)	4.03
	18 + 18 + 18 + 18 + 42	1.58 + 1.58 + 1.58 + 1.58 + 3.68	10.00 (2.90 - 11.50)	3000 (600 - 3600)	3.33	1.97 + 1.97 + 1.97 + 1.97 + 4.11	12.00 (3.40 - 12.70)	3230 (610 - 4000)	3.72
	18 + 18 + 18 + 18 + 50	1.48 + 1.48 + 1.48 + 1.48 + 4.10	10.00 (2.90 - 11.90)	3260 (600 - 3600)	3.07	1.82 + 1.82 + 1.82 + 1.82 + 4.73	12.00 (3.40 - 12.70)	3890 (610 - 5000)	3.08
	18 + 18 + 18 + 18 + 60	1.36 + 1.36 + 1.36 + 1.36 + 4.55	10.00 (2.90 - 12.40)	3260 (600 - 3600)	3.07	1.71 + 1.71 + 1.71 + 1.71 + 5.14	12.00 (3.40 - 12.70)	3890 (610 - 5000)	3.08
	18 + 18 + 18 + 25 + 25	1.73 + 1.73 + 1.73 + 2.40 + 2.40	10.00 (2.90 - 11.15)	2690 (600 - 3040)	3.72	2.10 + 2.10 + 2.10 + 2.85 + 2.85	12.00 (3.40 - 12.70)	2890 (610 - 4000)	4.15
	18 + 18 + 18 + 25 + 35	1.58 + 1.58 + 1.58 + 2.19 + 3.07	10.00 (2.90 - 11.60)	3000 (600 - 3600)	3.33	1.97 + 1.97 + 1.97 + 2.68 + 3.39	12.00 (3.40 - 12.70)	2980 (610 - 4000)	4.03
	18 + 18 + 18 + 25 + 42	1.49 + 1.49 + 1.49 + 2.07 + 3.47	10.00 (2.90 - 11.90)	3260 (600 - 3600)	3.07	1.86 + 1.86 + 1.86 + 2.53 + 3.88	12.00 (3.40 - 12.70)	3360 (610 - 4000)	3.57
	18 + 18 + 18 + 25 + 50	1.40 + 1.40 + 1.40 + 1.94 + 3.88	10.00 (2.90 - 12.30)	3260 (600 - 3600)	3.07	1.72 + 1.72 + 1.72 + 2.34 + 4.48	12.00 (3.40 - 12.70)	4000 (610 - 5000)	3.00
	18 + 18 + 18 + 25 + 60	1.29 + 1.29 + 1.29 + 1.80 + 4.32	10.00 (2.90 - 12.50)	3680 (600 - 3600)	2.72	1.63 + 1.63 + 1.63 + 2.22 + 4.89	12.00 (3.40 - 12.70)	4000 (610 - 5000)	3.00
	18 + 18 + 18 + 35 + 35	1.45 + 1.45 + 1.45 + 2.82 + 2.82	10.00 (2.90 - 12.50)	3260 (600 - 3600)	3.07	1.86 + 1.86 + 1.86 + 3.20 + 3.20	12.00 (3.40 - 12.70)	2980 (610 - 4000)	4.03
	18 + 18 + 18 + 35 + 42	1.37 + 1.37 + 1.37 + 2.67 + 3.21	10.00 (2.90 - 12.50)	3680 (600 - 4000)	2.72	1.76 + 1.76 + 1.76 + 3.04 + 3.67	12.00 (3.40 - 12.70)	3480 (610 - 4000)	3.45
	18 + 18 + 18 + 35 + 50	1.29 + 1.29 + 1.29 + 2.52 + 3.60	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.64 + 1.64 + 1.64 + 2.82 + 4.26	12.00 (3.40 - 12.70)	4200 (610 - 5000)	2.86
	18 + 18 + 18 + 35 + 60	1.21 + 1.21 + 1.21 + 2.35 + 4.03	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.55 + 1.55 + 1.55 + 2.67 + 4.66	12.00 (3.40 - 12.70)	4200 (610 - 5000)	2.86
	18 + 18 + 18 + 42 + 42	1.30 + 1.30 + 1.30 + 3.04 + 3.04	10.00 (2.90 - 12.50)	3680 (600 - 4000)	2.72	1.68 + 1.68 + 1.68 + 3.49 + 3.49	12.00 (3.40 - 12.70)	3680 (610 - 5000)	3.26
	18 + 18 + 18 + 42 + 50	1.23 + 1.23 + 1.23 + 2.88 + 3.42	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.56 + 1.56 + 1.56 + 3.25 + 4.06	12.00 (3.40 - 12.70)	4300 (610 - 5000)	2.79
	18 + 18 + 18 + 42 + 60	1.15 + 1.15 + 1.15 + 2.69 + 3.85	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.49 + 1.49 + 1.49 + 3.09 + 4.46	12.00 (3.40 - 12.70)	4300 (610 - 5000)	2.79
	18 + 18 + 18 + 50 + 50	1.17 + 1.17 + 1.17 + 3.25 + 3.25	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.46 + 1.46 + 1.46 + 3.80 + 3.80	12.00 (3.40 - 12.70)	4400 (610 - 5000)	2.73
	18 + 18 + 18 + 50 + 60	1.10 + 1.10 + 1.10 + 3.05 + 3.66	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.40 + 1.40 + 1.40 + 3.63 + 4.19	12.00 (3.40 - 12.70)	4400 (610 - 5000)	2.73
	18 + 18 + 25 + 25 + 25	1.62 + 1.62 + 2.25 + 2.25 + 2.25	10.00 (2.90 - 11.17)	3000 (600 - 3600)	3.33	1.97 + 1.97 + 2.68 + 2.68 + 2.68	12.00 (3.40 - 12.70)	2980 (610 - 4000)	4.03
	18 + 18 + 25 + 25 + 35	1.49 + 1.49 + 2.07 + 2.07 + 2.89	10.00 (2.90 - 12.50)	3000 (600 - 3600)	3.33	1.86 + 1.86 + 2.53 + 2.53 + 3.20	12.00 (3.40 - 12.70)	3130 (610 - 4000)	3.83
	18 + 18 + 25 + 25 + 42	1.41 + 1.41 + 1.95 + 1.95 + 3.28	10.00 (2.90 - 12.50)	3260 (600 - 3600)	3.07	1.76 + 1.76 + 2.40 + 2.40 + 3.67	12.00 (3.40 - 12.70)	3450 (610 - 4000)	3.48
	18 + 18 + 25 + 25 + 50	1.32 + 1.32 + 1.84 + 1.84 + 3.68	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.64 + 1.64 + 2.23 + 2.23 + 4.26	12.00 (3.40 - 12.70)	4100 (610 - 5000)	2.93
	18 + 18 + 25 + 25 + 60	1.23 + 1.23 + 1.71 + 1.71 + 4.11	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.55 + 1.55 + 2.11 + 2.11 + 4.66	12.00 (3.40 - 12.70)	4100 (610 - 5000)	2.93
	18 + 18 + 25 + 35 + 35	1.37 + 1.37 + 1.91 + 2.67 + 2.67	10.00 (2.90 - 12.50)	3680 (600 - 4000)	2.72	1.76 + 1.76 + 2.40 + 3.04 + 3.04	12.00 (3.40 - 12.70)	3130 (610 - 4000)	3.83
5 units	18 + 18 + 25 + 35 + 42	1.30 + 1.30 + 1.81 + 2.54 + 3.04	10.00 (2.90 - 12.50)	3680 (600 - 4000)	2.72	1.68 + 1.68 + 2.28 + 2.88 + 3.49	12.00 (3.40 - 12.70)	3580 (610 - 4000)	3.35
	18 + 18 + 25 + 35 + 50	1.23 + 1.23 + 1.71 + 2.40 + 3.42	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.56 + 1.56 + 2.13 + 2.69 + 4.06	12.00 (3.40 - 12.70)	4300 (610 - 5000)	2.79
	18 + 18 + 25 + 35 + 60	1.15 + 1.15 + 1.60 + 2.24 + 3.85	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.49 + 1.49 + 2.02 + 2.55 + 4.46	12.00 (3.40 - 12.70)	4300 (610 - 5000)	2.79
	18 + 18 + 25 + 42 + 42	1.24 + 1.24 + 1.72 + 2.90 + 2.90	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.60 + 1.60 + 2.17 + 3.32 + 3.32	12.00 (3.40 - 12.70)	4300 (610 - 5000)	2.79
	18 + 18 + 25 + 42 + 50	1.18 + 1.18 + 1.63 + 2.75 + 3.27	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.49 + 1.49 + 2.03 + 3.10 + 3.88	12.00 (3.40 - 12.70)	4400 (610 - 5000)	2.73
	18 + 18 + 25 + 42 + 60	1.10 + 1.10 + 1.53 + 2.58 + 3.68	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.42 + 1.42 + 1.93 + 2.96 + 4.27	12.00 (3.40 - 12.70)	4400 (610 - 5000)	2.73
	18 + 18 + 25 + 50 + 50	1.12 + 1.12 + 1.55 + 3.11 + 3.11	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.40 + 1.40 + 1.91 + 3.64 + 3.64	12.00 (3.40 - 12.70)	4500 (610 - 5000)	2.67
	18 + 18 + 35 + 35 + 35	1.28 + 1.28 + 2.48 + 2.48 + 2.48	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.68 + 1.68 + 2.88 + 2.88 + 2.88	12.00 (3.40 - 12.70)	3280 (610 - 4000)	3.66
	18 + 18 + 35 + 35 + 42	1.22 + 1.22 + 2.36 + 2.36 + 2.84	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.60 + 1.60 + 2.74 + 2.74 + 3.32	12.00 (3.40 - 12.70)	3580 (610 - 4000)	3.35
	18 + 18 + 35 + 35 + 50	1.15 + 1.15 + 2.24 + 2.24 + 3.21	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.49 + 1.49 + 2.57 + 2.57 + 3.88	12.00 (3.40 - 12.70)	4200 (610 - 5000)	2.86
	18 + 18 + 35 + 35 + 60	1.08 + 1.08 + 2.11 + 2.11 + 3.61	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.42 + 1.42 + 2.45 + 2.45 + 4.27	12.00 (3.40 - 12.70)	4200 (610 - 5000)	2.86
	18 + 18 + 35 + 42 + 42	1.16 + 1.16 + 2.26 + 2.71 + 2.71	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.52 + 1.52 + 2.62 + 3.17 + 3.17	12.00 (3.40 - 12.70)	4200 (610 - 5000)	2.86
	18 + 18 + 35 + 42 + 50	1.10 + 1.10 + 2.15 + 2.58 + 3.07	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.43 + 1.43 + 2.46 + 2.97 + 3.71	12.00 (3.40 - 12.70)	4300 (610 - 5000)	2.79
	18 + 25 + 25 + 25 + 25	1.53 + 2.12 + 2.12 + 2.12 + 2.12	10.00 (2.90 - 12.50)	3000 (600 - 3600)	3.33	1.86 + 2.53 + 2.53 + 2.53 + 2.53	12.00 (3.40 - 12.70)	3130 (610 - 4000)	3.83
	18 + 25 + 25 + 25 + 35	1.41 + 1.95 + 1.95 + 1.95 + 2.73	10.00 (2.90 - 12.50)	3000 (600 - 3600)	3.33	1.76 + 2.40 + 2.40 + 2.40 + 3.04	12.00 (3.40 - 12.70)	3300 (610 - 4000)	3.64
	18 + 25 + 25 + 25 + 42	1.33 + 1.85 + 1.85 + 1.85 + 3.11	10.00 (2.90 - 12.50)	3260 (600 - 3600)	3.07	1.68 + 2.28 + 2.28 + 2.28 + 3.49	12.00 (3.40 - 12.70)	3580 (610 - 4000)	3.35
	18 + 25 + 25 + 25 + 50	1.26 + 1.75 + 1.75 + 1.75 + 3.50	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.56 + 2.13 + 2.13 + 2.13 + 4.06	12.00 (3.40 - 12.70)	4300 (610 - 5000)	2.79
	18 + 25 + 25 + 25 + 60	1.18 + 1.63 + 1.63 + 1.63 + 3.92	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.49 + 2.02 + 2.02 + 2.02 + 4.46	12.00 (3.40 - 12.70)	4300 (610 - 5000)	2.79
	18 + 25 + 25 + 35 + 35	1.30 + 1.81 + 1.81 + 2.54 + 2.54	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.68 + 2.28 + 2.28 + 2.88 + 2.88	12.00 (3.40 - 12.70)	3300 (610 - 4000)	3.64
	18 + 25 + 25 + 35 + 42	1.24 + 1.72 + 1.72 + 2.41 + 2.90	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.60 + 2.17 + 2.17 + 2.74 + 3.32	12.00 (3.40 - 12.70)	3690 (610 - 4000)	3.25
	18 + 25 + 25 + 35 + 50	1.18 + 1.63 + 1.63 + 2.29 + 3.27	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.49 + 2.03 + 2.03 + 2.57 + 3.88	12.00 (3.40 - 12.70)	4300 (610 - 5000)	2.79
	18 + 25 + 25 + 35 + 60	1.10 + 1.53 + 1.53 + 2.15 + 3.68	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.42 + 1.93 + 1.93 + 2.45 + 4.27	12.00 (3.40 - 12.70)	4300 (610 - 5000)	2.79
	18 + 25 + 25 + 42 + 42	1.18 + 1.64 + 1.64 + 2.76 + 2.76	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.52 + 2.07 + 2.07 + 3.17 + 3.17	12.00 (3.40 - 12.70)	4300 (610 - 5000)	2.79
	18 + 25 + 25 + 42 + 50	1.13 + 1.56 + 1.56 + 2.63 + 3.13	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.43 + 1.94 + 1.94 + 2.97 + 3.71	12.00 (3.40 - 12.70)	4500 (610 - 5000)	2.67
	18 + 25 + 35 + 35 + 35	1.22 + 1.69 + 2.36 + 2.36 + 2.36	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.60 + 2.17 + 2.74 + 2.74 + 2.74	12.00 (3.40 - 12.70)	4000 (610 - 5000)	3.00
	18 + 25 + 35 + 35 + 42	1.16 + 1.61 + 2.26 + 2.26 + 2.71	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.52 + 2.07 + 2.62 + 2.62 + 3.17	12.00 (3.40 - 12.70)	4100 (610 - 5000)	2.93
	18 + 25 + 35 + 35 + 50	1.10 + 1.53 + 2.15 + 2.15 + 3.07	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.43 + 1.94 + 2.46 + 2.46 + 3.71	12.00 (3.40 - 12.70)	4500 (610 - 5000)	2.67
	18 + 25 + 35 + 42 + 42	1.11 + 1.54 + 2.16 + 2.59 + 2.59	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.46 + 1.98 + 2.50 + 3.03 + 3.03	12.00 (3.40 - 12.70)	4500 (610 - 5000)	2.67
	25 + 25 + 25 + 25 + 25	2.00 + 2.00 + 2.00 + 2.00 + 2.00	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	2.40 + 2.40 + 2.40 + 2.40 + 2.40	12.00 (3.40 - 12.70)	3300 (610 - 4000)	3.64
	25 + 25 + 25 + 25 + 35	1.85 + 1.85 + 1.85 + 1.85 + 2.59	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	2.28 + 2.28 + 2.28 + 2.28 + 2.88	12.00 (3.40 - 12.70)	3580 (610 - 4000)	3.35
	25 + 25 + 25 + 25 + 42	1.76 + 1.76 + 1.76 + 1.76 + 2.96	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	2.17 + 2.17 + 2.17 + 2.17 + 3.32	12.00 (3.40 - 12.70)	4200 (610 - 5000)	2.86
	25 + 25 + 25 + 25 + 50	1.67 + 1.67 + 1.67 + 1.67 + 3.33	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	2.03 + 2.03 + 2.03 + 2.03 + 3.88	12.00 (3.40 - 12.70)	4500 (610 - 5000)	2.67
	25 + 25 + 25 + 25 + 60	1.56 + 1.56 + 1.56 + 1.56 + 3.75	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.93 + 1.93 + 1.93 + 1.93 + 4.27	12.00 (3.40 - 12.70)	4500 (610 - 5000)	2.67
	25 + 25 + 25 + 35 + 35	1.72 + 1.72 + 1.72 + 2.41 + 2.41	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	2.17 + 2.17 + 2.17 + 2.74 + 2.74	12.00 (3.40 - 12.70)	4200 (610 - 5000)	2.86
	25 + 25 + 25 + 35 + 42	1.64 + 1.64 + 1.64 + 2.30 + 2.76	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	2.07 + 2.07 + 2.07 + 2.62 + 3.17	12.00 (3.40 - 12.70)	4500 (610 - 5000)	2.67
		1.61 + 1.61 + 2.26 + 2.26 + 2.26	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	2.07 + 2.07 + 2.62 + 2.62 + 2.62	12.00 (3.40 - 12.70)	4500 (610 - 5000)	2.67
	25 + 25 + 35 + 35 + 42	1.53 + 1.53 + 2.15 + 2.15 + 2.58	10.00 (2.90 - 12.50)	4000 (600 - 4500)	2.50	1.98 + 1.98 + 2.50 + 2.50 + 3.03	12.00 (3.40 - 12.70)	4500 (610 - 5000)	2.67

Indoor unit combinations

Summit multi-split units

RAM - 40Ne2F		COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
1 unit*	15	1.50	1.50 (1.00 - 2.20)	380 (200 - 480)	3.95	2.00	2.00 (1.10 - 3.20)	530 (250 - 970)	3.77
	18	1.80	1.80 (1.00 - 2.50)	455 (200 - 750)	3.96	2.50	2.50 (1.10 - 3.20)	690 (250 - 970)	3.62
	25	2.50	2.50 (1.00 - 3.10)	650 (200 - 880)	3.85	3.50	3.50 (1.10 - 4.40)	990 (250 - 1120)	3.54
	35	3.50	3.50 (1.00 - 4.00)	780 (200 - 1150)	4.49	4.80	4.80 (1.10 - 5.00)	1200 (250 - 1300)	4.00
2 units	15 + 15	1.50 + 1.50	3.00 (1.50 - 2.80)	700 (200 - 780)	4.29	2.00 + 2.00	4.00 (1.50 - 4.60)	890 (250 - 950)	4.49
	15 + 18	1.50 + 1.80	3.30 (1.50 - 3.50)	700 (200 - 930)	4.52	2.00 + 2.50	4.50 (1.50 - 5.00)	940 (250 - 1020)	4.79
	15 + 25	1.50 + 2.50	4.00 (1.50 - 4.00)	950 (200 - 1150)	4.21	1.89 + 3.31	5.20 (1.50 - 5.50)	1080 (250 - 1500)	4.81
	15 + 35	1.20 + 2.80	4.00 (1.50 - 4.20)	1100 (200 - 1150)	3.64	1.53 + 3.67	5.20 (1.50 - 5.50)	1230 (250 - 1500)	4.23
	18 + 18	1.80 + 1.80	3.60 (1.50 - 4.00)	1050 (200 - 1050)	3.43	2.50 + 2.50	5.00 (1.50 - 5.00)	1250 (250 - 1500)	4.00
	18 + 25	1.67 + 2.33	4.00 (1.50 - 4.20)	1090 (200 - 1150)	3.67	2.17 + 3.03	5.20 (1.50 - 5.50)	1250 (250 - 1500)	4.16
	18 + 35	1.36 + 2.64	4.00 (1.50 - 4.20)	1130 (200 - 1150)	3.54	1.78 + 3.42	5.20 (1.50 - 5.50)	1250 (250 - 1500)	4.16
	25 + 25	2.00 + 2.00	4.00 (1.50 - 4.20)	1150 (200 - 1150)	3.48	2.60 + 2.60	5.20 (1.50 - 5.50)	1250 (250 - 1500)	4.16

* Note: this refers to the performance with only one unit in operation. However, at least 2 units must be connected to the outside unit.

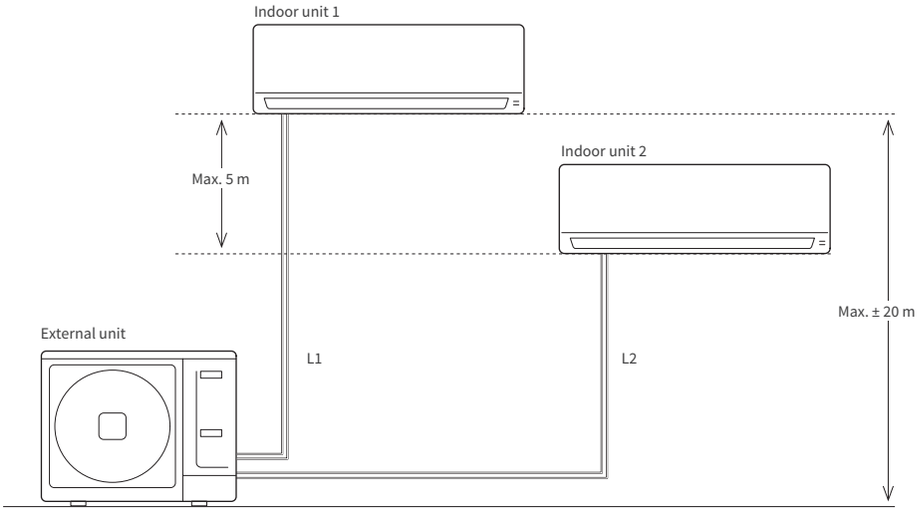
Pipe lengths

RAM - 40NE2F

L1 + L2 < 35 m
L1 < 25 m ; L2 < 25 m

The max. level difference between 2 indoor units is 5m.

Always connect the most powerful indoor unit to the lowest connector. No additional charge necessary.



RAM-53NE2F		COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
1 unit*	15	1.50	1.50 (1.00 - 2.20)	430 (350 - 480)	3.49	2.00	2.00 (1.10 - 2.20)	610 (350 - 650)	3.28
	18	1.80	1.80 (1.00 - 2.00)	495 (350 - 750)	3.64	2.50	2.50 (1.10 - 3.20)	690 (350 - 1050)	3.62
	25	2.50	2.50 (1.00 - 2.80)	700 (350 - 980)	3.57	3.90	3.90 (1.10 - 4.70)	1060 (350 - 1380)	3.68
	35	3.50	3.50 (1.00 - 3.90)	1030 (350 - 1280)	3.40	4.80	4.80 (1.10 - 5.80)	1320 (350 - 1870)	3.64
	50	5.00	5.00 (1.00 - 5.50)	1510 (350 - 1660)	3,31	6.80	6.50 (1.10 - 7.20)	1680 (350 - 2010)	3,87
2 units	15 + 15	1.50 + 1.50	3.00 (1.50 - 3.90)	920 (350 - 1000)	3.26	2.00 + 2.00	4.00 (1.50 - 4.70)	1060 (350 - 1380)	3.77
	15 + 18	1.50 + 1.80	3.30 (1.50 - 3.90)	1020 (350 - 1300)	3.24	2.00 + 2.50	4.50 (1.50 - 5.20)	1250 (350 - 1870)	3.6
	15 + 25	1.50 + 2.50	4.00 (1.50 - 4.50)	1180 (350 - 1250)	3.39	2.00 + 3.90	5.90 (1.50 - 6.50)	1550 (350 - 2010)	3.81
	15 + 35	1.50 + 3.50	5.00 (1.50 - 5.90)	1480 (350- 1660)	3.38	2.00 + 4.80	6.80 (1.50 - 7.20)	1590 (350- 2010)	4.28
	15 + 50[1]	1.22 + 4.08	5.30 (1.50 - 5.90)	1660 (350 - 1660)	3.19	1.60 + 5.20	6.80 (1.50 - 7.20)	1820 (350 - 2010)	3.74
	18 + 18	1.80 + 1.80	3.60 (1.50 - 4.00)	1080 (350 - 1300)	3.33	2.50 + 2.50	5.00 (1.50 - 5.20)	1290 (350 - 1550)	3.88
	18 + 25	1.80 + 2.50	4.30 (1.50 - 4.60)	1220 (350 - 1450)	3,52	2.50 + 3.90	6.40 (1.50 - 6.30)	1530 (350 - 1920)	4.18
	18 + 35	1.80 + 3.50	5.30 (1.50 - 5.60)	1260 (350 - 1660)	4.21	2.31 + 4.49	6.80 (1.50 - 7.20)	1610 (350 - 2010)	4.22
	18 + 50[1]	1.40 + 3.90	5.30 (1.50 - 5.90)	1550 (350 - 1660)	3.42	1.80 + 5.00	6.80 (1.50 - 7.20)	1820 (350 - 2010)	3.74
	25 + 25	2.50 + 2.50	5.00 (1.50 - 5.60)	1470 (350 - 1660)	3.40	3.40 + 3.40	6.80 (1.50 - 7.20)	1780 (350 - 2010)	3.82
	25 + 35	2.21 + 3.09	5.30 (1.50 - 5.70)	1550 (350 - 1660)	3,42	2.83 + 3.97	6.80 (1.50 - 7.20)	1820 (350 - 2010)	3.74
	25 + 50[1]	1.77 + 3.53	5.30 (1.50 - 5.90)	1660 (350 - 1660)	3.19	2.27 + 4.53	6.80 (1.50 - 7.20)	1820 (350 - 2010)	3.74
	35 + 35	2.65 + 2.65	5.30 (1.50 - 5.90)	1660 (350 - 1660)	3.19	3.40 + 3.40	6.80 (1.50 - 7.20)	1820 (350 - 2010)	3,74
	35 + 50[1]	2.18 + 3.12	5.30 (1.50 - 6.60)	1660 (350 - 1660)	3.19	2.80 + 4.00	6.80 (1.50 - 7.20)	1820 (350 - 2010)	3.74

* Note: this refers to the performance with only one unit in operation. However, at least 2 units must be connected to the outside unit.
[1] For each output corresponding to units 50, a 3/8-to-1/2 pipe adapter is required.

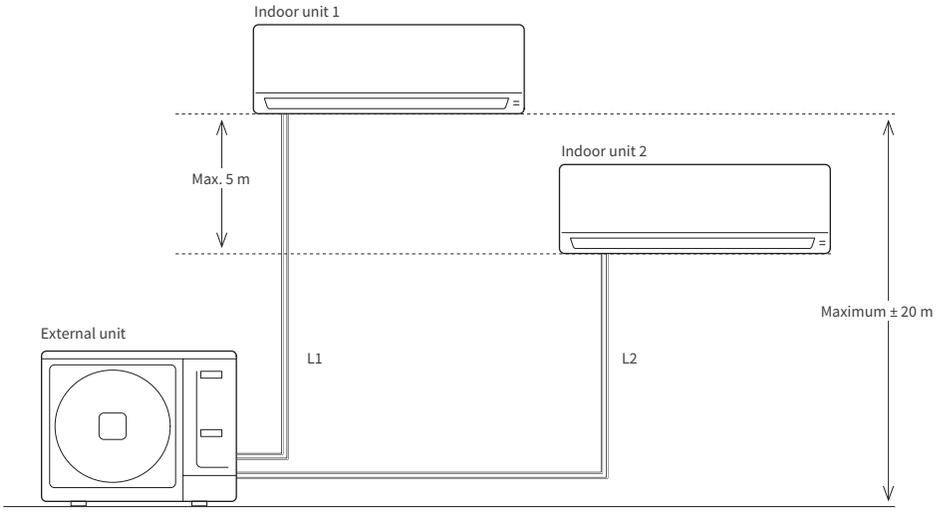
Pipe lengths

RAM-53NE2F

L1 + L2 < 35 m
L1 < 25 m ; L2 < 25 m

The max. level difference between 2 indoor units is 5m.

Always connect the most powerful indoor unit to the lowest connector. No additional charge necessary.



Indoor unit combinations

Summit multi-split units

RAM-53NE3F		COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
1 unit*	15	1.50	1.50 (1.00 - 1.60)	430 (200 - 480)	3.49	2.00	2.00 (1.10 - 2.20)	560 (320 - 850)	3.57
	18	1.80	1.80 (1.50 - 2.00)	495 (280 - 500)	3.64	2.50	2.50 (1.80 - 3.50)	720 (320 - 1130)	3.47
	25	2.50	2.50 (1.50 - 2.80)	700 (280 - 720)	3.57	3.40	3.40 (1.80 - 4.70)	980 (320 - 1480)	3.47
	35	3.50	3.50 (1.50 - 3.90)	1030 (280 - 1130)	3.40	4.30	4.30 (1.80 - 5.80)	1150 (320 - 1950)	3.74
	50	5.00	5.00 (1.50 - 5.60)	1480 (280 - 1800)	3.38	6.50	6.50 (1.80 - 7.20)	1880 (320 - 2530)	3.46
2 units	15 + 15	1.50 + 1.50	3.00 (1.50 - 3.50)	870 (380 - 980)	3.45	2.00 + 2.00	4.00 (2.20 - 4.70)	1080 (200 - 1100)	3.70
	15 + 18	1.50 + 1.80	3.30 (1.50 - 3.50)	950 (380 - 1000)	3.47	2.00 + 2.50	4.50 (2.20 - 5.20)	1200 (200 - 1300)	3.75
	15 + 25	1.50 + 2.50	4.00 (1.50 - 4.00)	1300 (380 - 1300)	3.08	2.00 + 3.40	5.40 (2.20 - 6.40)	1450 (200 - 1780)	3.72
	15 + 35	1.50 + 3.50	5.00 (1.50 - 5.20)	1450 (380 - 1450)	3.45	2.00 + 4.30	6.30 (2.20 - 7.20)	1660 (200 - 2010)	3.80
	15 + 50[1]	1.22 + 4.08	5.30 (1.50 - 6.30)	1700 (380 - 2380)	3.12	1.60 + 5.20	6.80 (2.20 - 7.20)	1770 (320 - 2010)	3.84
	18 + 18	1.80 + 1.80	3.60 (1.50 - 5.90)	1020 (380 - 1020)	3.53	2.50 + 2.50	5.00 (2.20 - 6.40)	1380 (320 - 2010)	3.62
	18 + 25	1.80 + 2.50	4.30 (1.50 - 5.90)	1200 (380 - 1360)	3.58	2.50 + 3.40	5.90 (2.20 - 7.20)	1580 (320 - 2010)	3.73
	18 + 35	1.80 + 3.50	5.30 (1.50 - 5.90)	1290 (380 - 1950)	4.11	2.50 + 4.30	6.80 (2.20 - 7.20)	1650 (320 - 2010)	4.12
	18 + 50[1]	1.80 + 5.00	5.30 (1.50 - 5.90)	1800 (380 - 2820)	2.94	1.89 + 4.91	6.80 (2.20 - 9.50)	2100 (430 - 2600)	3.24
	25 + 25	2.50 + 2.50	5.00 (2.00 - 5.50)	1480 (380 - 1720)	3.38	3.40 + 3.40	6.80 (2.20 - 9.50)	1770 (430 - 2010)	3.84
	25 + 35	2.50 + 3.50	5.30 (2.00 - 6.60)	1640 (380 - 2380)	3.23	3.00 + 3.80	6.80 (2.20 - 9.50)	1880 (430 - 2010)	3.62
	25 + 50[1]	1.77 + 3.53	5.30 (2.00 - 7.20)	1610 (380 - 2820)	3.29	2.34 + 4.46	6.80 (2.20 - 9.50)	2100 (430 - 2600)	3.24
	35 + 35	2.65 + 2.65	5.30 (2.00 - 7.50)	1800 (380 - 2820)	2.94	3.40 + 3.40	6.80 (2.20 - 9.50)	1880 (430 - 3120)	3.62
	35 + 50[1]	2.18 + 3.12	5.30 (2.00 - 7.50)	1800 (380 - 2820)	2.94	2.71 + 4.09	6.80 (2.20 - 9.50)	1880 (430 - 2600)	3.62
	50 + 50[1]	2.65 + 2.65	5.30 (2.00 - 7.50)	1800 (380 - 2820)	2.94	3.40 + 3.40	6.80 (2.20 - 9.50)	1880 (430 - 2600)	3.62

* Note: this refers to the performance with only one unit in operation. However, at least 2 units must be connected to the outside unit.
[1] For each output corresponding to units 50, a 3/8-to-1/2 pipe adapter is required.

Pipe lengths

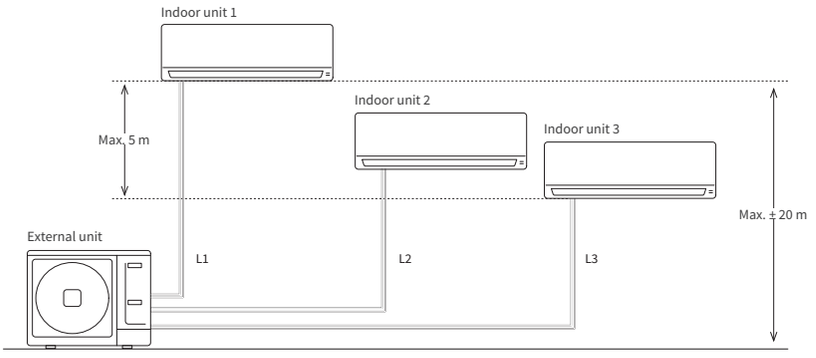
RAM-53NE3F

L1 + L2 + L3 < 45 m
L1 < 25 m ; L2 < 25 m ; L3 < 25 m

The max. level difference between 2 indoor units is 5m.

Pre-charged for 35 m.
Beyond 35 m, allow an additional 20g/m.

Always connect the most powerful indoor unit to the lowest connector.



RAM-53NE3F		COOLING MODE				HEATING MODE			
		Unit power (kW)	Total power (kW)	Total power input (W)	EER	Unit power (kW)	Total power (kW)	Total power input (W)	COP
3 units	15 + 15 + 15	1.50 + 1.50 + 1.50	4.50 (2.20 - 5.00)	1400 (420 - 1680)	3.21	2.00 + 2.00 + 2.00	6.00 (2.40 - 6.50)	1650 (430 - 1800)	3.64
	15 + 15 + 18	1.50 + 1.50 + 1.80	4.80 (2.20 - 5.50)	1480 (240 - 1880)	3.24	2.00 + 2.00 + 2.50	6.50 (2.40 - 7.00)	1750 (430 - 2100)	3.71
	15 + 15 + 25	1.45 + 1.45 + 2.41	5.30 (2.20 - 6.00)	1680 (420 - 2280)	3.15	1.84 + 1.84 + 3.12	6.80 (2.20 - 9.30)	1850 (430 - 2200)	3.68
	15 + 15 + 35	1.22 + 1.22 + 2.85	5.30 (2.20 - 7.00)	1800 (420 - 2480)	2.94	1.64 + 1.64 + 3.52	6.80 (2.40 - 9.50)	1850 (430 - 2500)	3.68
	15 + 15 + 50[1]	0.99 + 0.99 + 3.31	5.30 (2.20 - 7.50)	1800 (420 - 2890)	2.94	1.30 + 1.30 + 4.21	6.80 (2.40 - 9.50)	2000 (430- 2500)	3.40
	15 + 18 + 18	1.50 + 1.80 + 1.80	5.10 (2.20 - 5.60)	1500 (420 - 2280)	3.40	1.94 + 2.43 + 2.43	6.80 (2.20 - 9.30)	1850 (430 - 2400)	3.68
	15 + 18 + 25	1.37 + 1.64 + 2.28	5.30 (2.20 - 6.30)	1590 (420 - 2480)	3.33	1.72 + 2.15 + 2.93	6.80 (2.40 - 9.50)	1850 (430 - 2600)	3.68
	15 + 18 + 35	1.17 + 1.40 + 2.73	5.30 (2.20 - 7.50)	1680 (420 - 2480)	3.15	1.55 + 1.93 + 3.32	6.80 (2.40 - 9.50)	1850 (430 - 2600)	3.68
	15 + 18 + 50[1]	0.96 + 1.15 + 3.19	5.30 (2.20 - 7.50)	1800 (420 - 2890)	2.94	1.24 + 1.55 + 4.02	6.80 (2.40 - 9.50)	2050 (430 - 2600)	3.72
	15 + 25 + 25	1.22 + 2.04 + 2.04	5.30 (1.50 - 7.00)	1710 (420 - 2480)	3.10	1.55 + 2.63 + 2.63	6.80 (2.40 - 9.50)	1850 (430 - 2600)	3.68
	15 + 25 + 35	1.06 + 1.77 + 2.47	5.30 (2.20 - 7.80)	1800 (420-2890)	2.94	1.40 + 2.38 + 3.01	6.80 (2.40 - 9.50)	1850 (430 - 2600)	3.68
	15 + 25 + 50[1]	0.88 + 1.47 + 2.97	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.14 + 1.94 + 3.71	6.80 (2.40 - 9.50)	2100 (430-2600)	3.24
	15 + 35 + 35	0.94 + 2.18 + 2.18	5.30 (2.20-8.00)	1800 (420 - 2890)	2.94	1.28 + 2.76 + 2.76	6.80 (2.40 - 9.50))	2100 (430-2600)	3.24
	15 + 35 + 50[1]	0.80 + 1.86 + 2.65	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.06 + 2.28 + 3.45	6.80 (2.40 - 9.50)	2100 (430-2600)	3.24
	18 + 18 + 18	1.77 + 1.77 + 1.77	5.30 (2.20 - 5.90)	1500 (420 - 2190)	3.53	2.27 + 2.27 + 2.27	6.80 (2.40 - 9.50)	1860 (430 - 2600)	3.66
	18 + 18 + 25	1.56 + 1.56 + 2.17	5.30 (2.20 - 6.70)	1610 (420 - 2480)	3.29	2.02 + 2.02 + 2.75	6.80 (2.40 - 9.50)	1740 (430 - 2600)	3.91
	18 + 18 + 35	1.34 + 1.34 + 2.61	5.30 (2.20 - 7.80)	1800 (420 - 2890)	2.94	1.83 + 1.83 + 3.14	6.80 (2.40 - 9.50)	1820 (430 - 2600)	3.74
	18 + 18 + 50[1]	1.11 + 1.11 + 3.08	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.48 + 1.48 + 3.84	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	18 + 25 + 25	1.40 + 1.95 + 1.95	5.30 (2.20 - 7.50)	1730 (420 - 2780)	3.06	1.83 + 2.49 + 2.49	6.80 (2.40 - 9.50)	1760 (430 - 2600)	3.86
	18 + 25 + 35	1.22 + 1.70 + 2.38	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.67 + 2.27 + 2.87	6.80 (2.40 - 9.50)	1820 (430 - 2600)	3.74
	18 + 25 + 50[1]	1.03 + 1.42 + 2.85	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.37 + 1.86 + 3.56	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	18 + 35 + 35	1.08 + 2.11 + 2.11	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.53 + 2.63 + 2.63	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	18 + 35 + 50[1]	0.93 + 1.80 + 2.57	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.28 + 2.20 + 3.32	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	25 + 25 + 25	1.77 + 1.77 + 1.77	5.30 (2.20 - 7.80)	1800 (420 - 2890)	2.94	2.27 + 2.27 + 2.27	6.80 (2.40 - 9.50)	1870 (430 - 2600)	3.64
	25 + 25 + 35	1.56 + 1.56 + 2.18	5.30 (2.20 - 8.00)	1800 (420 - 2960)	2.94	2.08 + 2.08 + 2.63	6.80 (2.40 - 9.50)	1930 (430 - 2600)	3.52
	25 + 25 + 50[1]	1.33 + 1.33 + 2.65	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.74 + 1.74 + 3.32	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	25 + 35 + 35	1.39 + 1.95 + 1.95	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.93 + 2.44 + 2.44	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	25 + 35 + 50[1]	1.20 + 1.69 + 2.41	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	1.63 + 2.06 + 3.11	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24
	35 + 35 + 35	1.77 + 1.77 + 1.77	5.30 (2.20 - 8.00)	1800 (420 - 2890)	2.94	2.27 + 2.27 + 2.27	6.80 (2.40 - 9.50)	2100 (430 - 2600)	3.24

[1] For each output corresponding to units 50, a 3/8-to-1/2 pipe adapter is required.

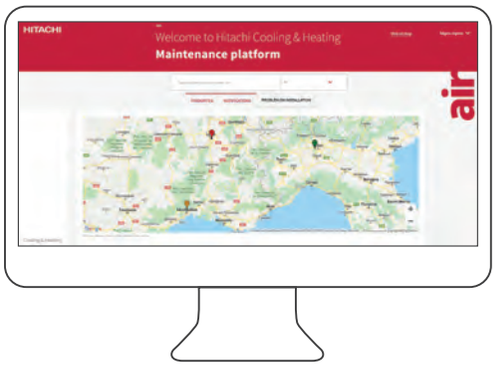
Hitachi's heating and air-conditioning systems benefit from multiple control solutions suitable for all applications.

There are a number of options for residential and small public buildings: wired or wireless remote controls, smartphone control, remote maintenance, fault reporting kits, and dry contacts.



Air/air heat pump – controls and accessories







Air/air control range

Optional wired remote controls

Wired remote control weekly

NEW

Designed to offer as many functions as possible while ensuring extreme ease of use.

- All settings clearly displayed in several languages
- Easy navigation with menus and a navigation button.
- Alarm code: alarm on the indoor unit or outdoor unit. Alarm type.
- Alarm log.
- Remote control can be locked.
- You can limit the setpoint ranges and lock the mode.
- Weekly programming: 5 ranges for the day with different setpoints.
- Holiday function: up to 99 days of absence. Setpoint from 10°C to 16°C.
- Consumption display.

Part number	SPX –WKT4
Compatibility	All Air/Air R32

Wired standard remote control

NEW

The standard wired remote control was developed to respond to applications such as hotels, retirement homes, offices, etc. where the user needs simple and limited access to key functions:

- Start/Stop.
- Switch modes (cooling / heating / auto / ventilation / dehumidification).
- Change setpoints.
- Change fan speeds.
- 12-hour timer or sleep mode.
- Centralized control option (see SPX-DST1).

Part numbers	SPX-RCDA1	SPX-RCDB1
Compatibility	All Ducted R32 units	All Air/Air R32 apart from ducted

Wired remote control extension

Part number	SPX-WKT5M
Max. permissible length	15m
Additional cable	5m

Weekly remote control Infrared optional

- Weekly programming.
- View consumption, error codes, ambient temperature.
- Multi-functional: ECO, Setback, Powerful, Silent, Auto Clean…
- comes with infrared receiver.

Part numbers	SPX-RCKA1	SPX-RCKA2	SPX-RCKA3
Compatibility	RAD-18QPE RAD 25~60RPE RAD-70PPD	RAK-50RPE1 RAK-60RPE RAK-70PPD	RAI-RPE

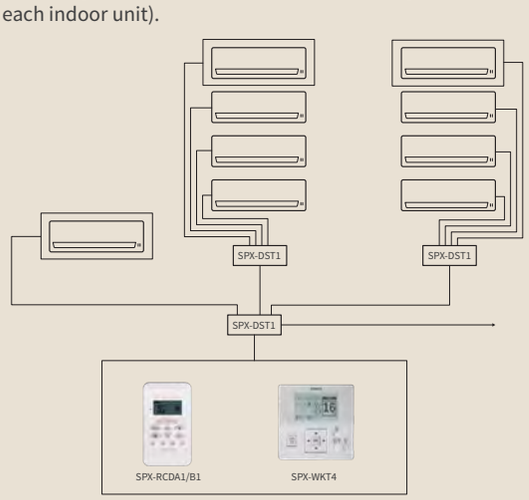
Remote controls supplied as standard

	Wall and Console units	Summit
Infrared remote controls (mono-split)	RAK-25~50PSE(S/W) RAK-18QXE RAK-25~50RXE RAK-15QPE RAK-18~50RPE RAF-25~50RXE	RAK-18~50REF
Weekly programming	✓	-
ECO (without motion sensor)	✓	✓
LEAVE HOME, absence (number of days)	✓ (1-99)*	✓
POWERFUL, power	✓	✓
INFO, error codes	✓	-
INFO, energy consumption	✓	-
INFO, ambient temperature	✓	-
SILENT, Silence	✓	-
CLEAN, auto cleaning	✓	-
FrostWash	✓	✓
Part number of the remote control	RAR-6NE1: Wall units RAR-6NE4: Console units	RAR-7PE1

Centralized controls

Multi-box for indoor units

- Manage up to 4 indoor units when paired with a wired remote control for weekly programming (SPX-WKT4) or standard remote (SPX-RCDB1).
- These indoor units work in the same mode to the same setpoint.
- Connect up to 4x SPX-DST1 units to control as many as 13 indoor units.
- To connect the SPX-DST1 box to the indoor unit, you need to order the following cable separately: SPX-WDST8M (length: 8 m – 1 cable for each indoor unit).



Part numbers	SPX-DST1 + SPX-WDST8M
Compatibility	RAK-RXE / RAK-PPD / RAF-RXE / RAF-RXE / RAK -RPE / RAK-RXE / RAK-PSE(W/S) / RAI-RPE / RAD-RPE / RAD-QPE / RAI-QPE

* You can adjust the set temperature (between 10°C and 16°C), with the exception of RAK-25~50PSE(S/W).

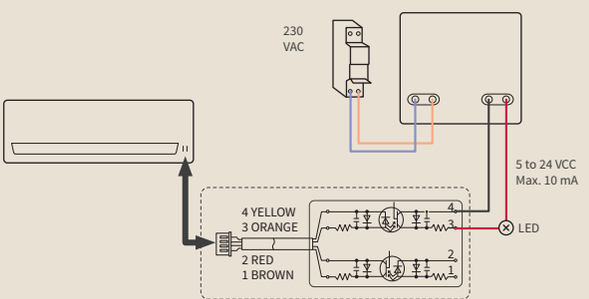
Sensors and contacts

Single DRY Contact kit
Start/Stop remotely.

Part numbers	SPX-WDC2	SPX-WDC3
Compatibility	RAI-RPE RAD-QPE / RPE RAD-PPD	RAK-QPE/ RAK-RPE / RAK-RXE RAF-RXE / RAK-PSE(W/S) RAK-QXE / RAK-REF

Single error reporting kit
This accessory can send a 5V signal in case of a fault on the indoor unit. This kit comes in the form of a cable (SPX-WDC7) and a box (HA-S100TSA to be connected).

Part numbers	SPX-WDC7 + HA-S100TSA
Compatibility	RAK-QXE / RAK-RXE / RAK-QPE / RAK-RPE RAF-RXE / RAK-REF / RAI-RPE / RAD-RPE

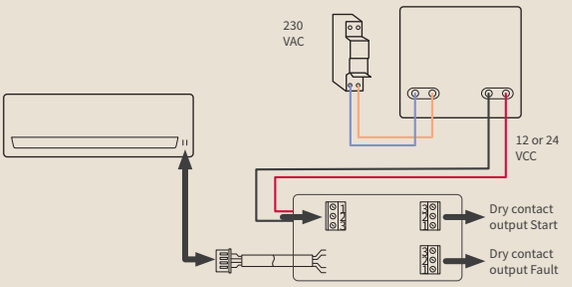


Error report + DRY contact kit
This accessory can send a 5V signal in case of a fault on the indoor unit and remotely start/stop the unit. This kit comes in the form of a cable (SPX-WDC5 or SPX-WDC6) and a box (HA-S100TSA to be connected).

Part numbers	SPX-WDC5 + HA-S100TSA	SPX-WDC6 + HA-S100TSA
Compatibility	RAK-PSE / RAK-QXE / RAK-RXE RAK-QPE / RAK-RPE RAF-RXE / RAK-REF	RAI-QPE / RAD-QPE

Error reporting kit + operating information
This accessory has 2 dedicated outputs. The first can close a dry contact in case of a fault on the indoor unit. The second can close a dry contact when the indoor unit is in use.

Part numbers	SPX-WDC8
Compatibility	RAK-RXE / RAK-RPE / RAI-RPE / RAD-RPE / RAK-QXE RAK-QPE / RAK-REF / RAK-PPD / RAD-PPD



Not compatible with remote M/A
Caution: a SPX-WDC8 cannot be used on the same unit with an SPX-WDC2 or SPX-WDC3

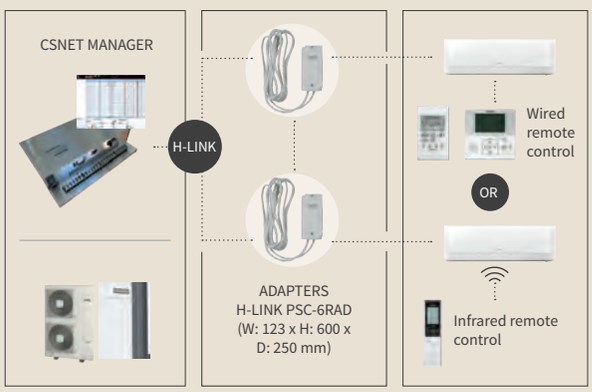
Remote sensor for multi-split ducted units
Equipped with a remote sensor, the indoor unit will adapt to the ambient temperature.

Part numbers	SPX-RTH1
Compatibility	RAD-RPE

Management via BMS

H-LINK box
Connect indoor units from the ranges S-Premium, Shirokuma, Performance, Summit on an H-Link network

Part numbers	PSC-6RAD
Compatibility	RAK-PSE / RAK-RXE / RAK-RPE / RAK-QXE / RAK-PPD RAK-QPE / RAF-RXE / RAD-QPE / RAI-RPE



HITACHI

More convenience, better comfort



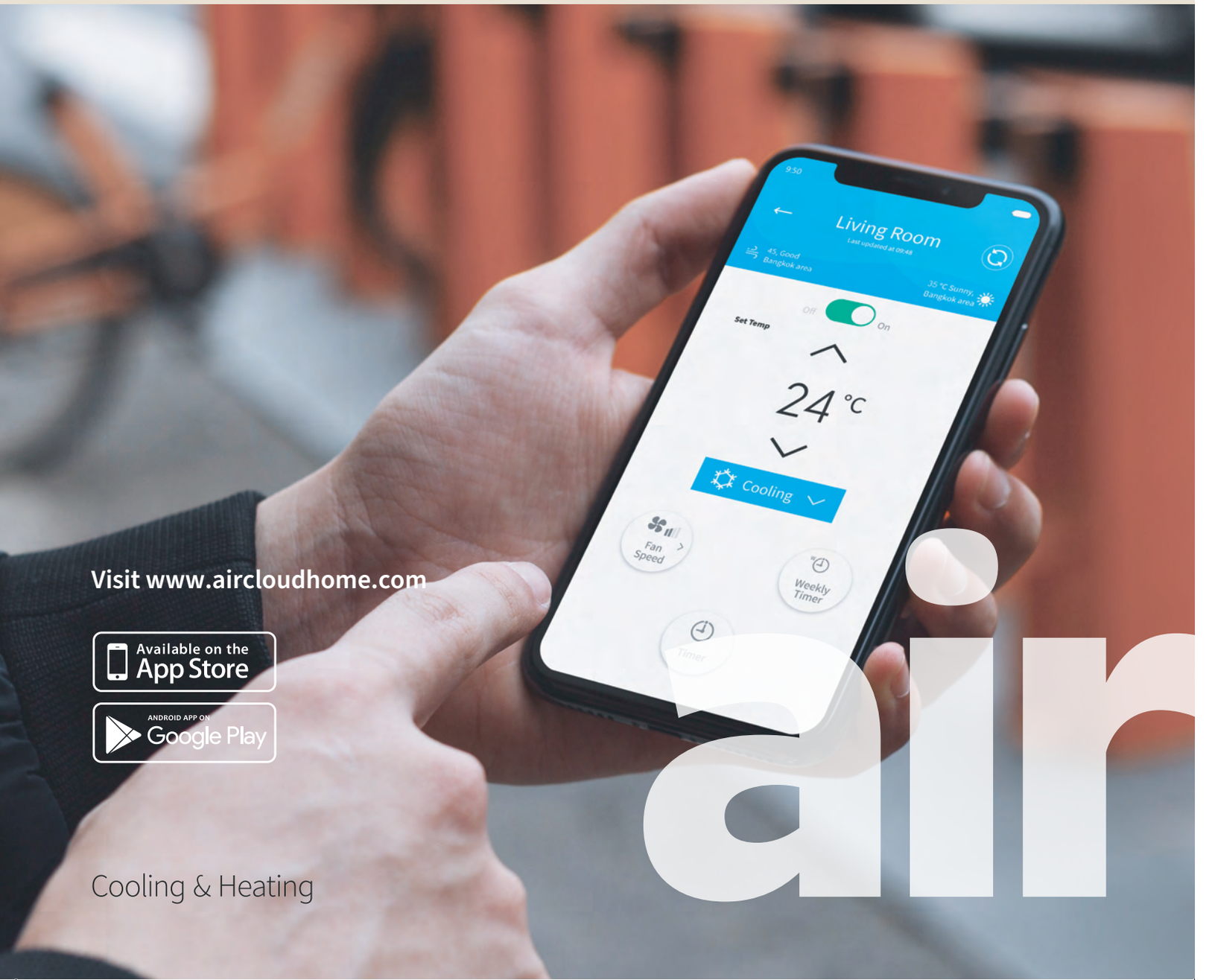
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AIR/AIR heat pump

- Start/Stop
- Temperature control
- Fan speed
- Louvre direction
- Weekly programming
- Show error codes…



The **airCloud Home** solution lets you remotely manage the entire range of Hitachi Air/Air heat pumps for residential and small public buildings.
A simple and user-friendly application brings real comfort to the end user. Think you forgot to turn off your air-conditioning when you left? Do you want to cool down or heat up a little before you get home? It couldn't be easier, with the **airCloud Home** app!

How does the airCloud Home work?

Connect your air-conditioner to the cloud with your wireless home network.



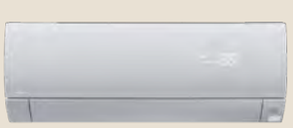


airCloud adapter

Discrete and easy to install. The airCloud adapter is placed under the indoor unit. It connects to the cloud via your home network.

SPX-WFG02

Communication interfaces for Mono-split and Multi-split Air/Air units









airCloud Home

SPX-WFG02 *Direct WiFi interface**

or

Hi-Kumo (for more than 10 units on the same site)

SPX-TAG01 *Wireless interface*
+ AHP-SMB-01 *Hi-Box interface*

ANDROID APP ON Google play

Download on the App Store

airCloud Home is also compatible with Amazon Alexa and Google Assistant, for voice control.



Amazon Echo — Google Home

Go to: aircloudhome.com

* max. 10 per meter and 20 wireless interfaces per Hi-Box

List of accessories

Air-conditioning for residential and small public buildings

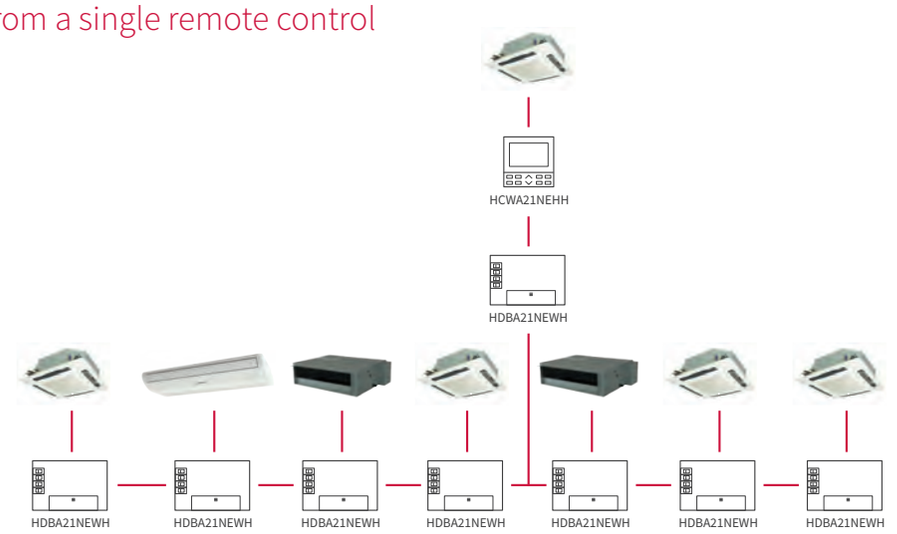
	Description	RAK-PSEW/PSES	RAK-QXE	RAK-RXE	RAK-QPE	RAK-RPE	RAK-50RPE1	RAK-60RPE	RAK-70PPD	RAK-REF	RAD-QPE	RAD-RPE	RAD-70PPD	RAF-RXE	RAI-RPE	RAM-NPE	RAM-NEF
SPX-CFH25	Active Carbon filter									•	•	•					
SPX-SPF8	Stainless steel prefilter					•											
SPX-SPF9	Stainless steel prefilter	•															
SPX-WDC2	Dry contact kit										•	•	•		•		
SPX-WDC3	Dry contact kit	•	•	•	•	•	•	•	•	•				•			
SPX-WDC5 + HA-S100TSA	Error report + DRY contact kit	•	•	•	•	•				•				•			
SPX-WDC6	Error reporting kit cable										•	•			•		
SPX-WDC7 + HA-S100TSA	Single error reporting kit	•	•	•	•	•				•							
SPX-WDC8	Error reporting kit and operating information			•	•	•	•	•	•	•	•	•	•		•		
SPX-RCDA1	Wired standard remote control										•	•	•				
SPX-RCDB1	Standard wired remote control Non Ducted	•	•	•	•	•	•	•	•	•				•	•		
SPX-RCKA1	Weekly remote control Infrared										•	•	•				

	Description	RAK-PSEW/PSES	RAK-QXE	RAK-RXE	RAK-QPE	RAK-RPE	RAK-50RPE1	RAK-60RPE	RAK-70PPD	RAK-REF	RAD-QPE	RAD-RPE	RAD-70PPD	RAF-RXE	RAI-RPE	RAM-NPE	RAM-NEF
SPX-RCKA2	Infrared weekly remote control						•	•	•								
SPX-RCKA3	Infrared weekly remote control														•		
SPX-WKT4	Wired remote control weekly	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
SPX-WKT5M	Additional 5m cable		•	•	•	•								•	•		
SPX-DST1	Distribution box	•	•	•	•	•								•	•		
SPX-WDST8M	Connection cable between SPX-WKT4 and DST1	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
SPX-RTH1	Remote sensor RAD-RPE for ducted units												•				
SPX-RAMHLK	Multi outdoor unit adapter															•	
PSC-6RAD	H-Link box	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
SPX-WFG02	airCloud Home interface	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
SPX-TAG01	Somfy / Hi-Kumo heat pump-A interface A	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
AHP-SMB-01	Hi-Kumo box	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
SPX-RAFGLS	R32 Leak sensor													•			

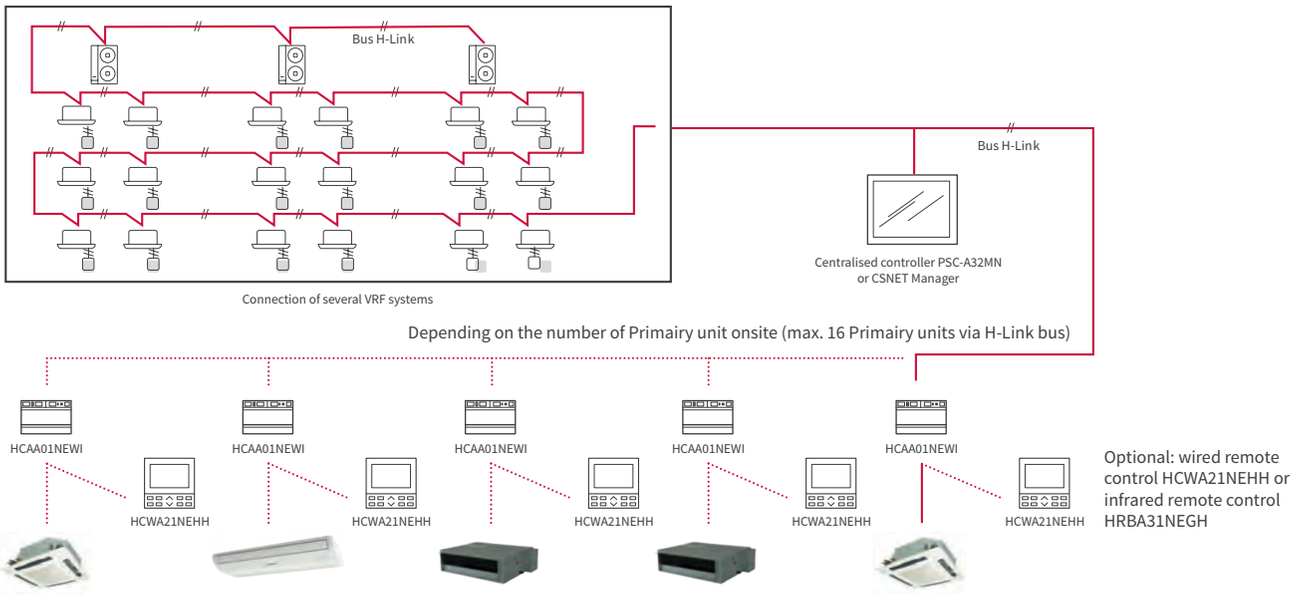
Management solutions Primairy R32

Manage multiple indoor units from a single remote control

- Up to 8 indoor units managed with one remote control HCWA21NEHH
- 1x HDBA21NEWH adapter (data replication) required for every indoor unit
- All indoor units work in the same mode to the same setpoint
- The indoor unit and the HDBA21NEWH adapter are connected via RS485 bus
- An infrared remote control cannot be used in parallel with the wired remote control to control the master (or main) unit when using group control.



Centralized management of all VRF and Primairy systems in the building



- Centralized management via CSNET Manager, PSCA32MN, or PSC-A64GT
- Use the BMS Modbus, BACnet, and KNX interfaces directly from the H-LINK output
- Centralized management that can control up to 64 indoor units (VRF + Primairy) with PSC-A64GT, CSNet Lite, or CSNet Manager (max. 16 Primairy units per H-Link bus)
- Combine multiple H-Link buses on the CSNet Manager to increase the number of connectible indoor units
- User inputs from the centralized command point are updated on all VRF and Primairy wired remote controls
- Indoor units can operate in different modes and to different setpoint temperatures (with or without their own remote control)
- There must be one H-Link interface for each indoor unit

H-Link interface and adapter

H-Link interface



HCAA01NEWI

Adapter



HDBA21NEWH

Part numbers	HDBA21NEWH	HCAA01NEWI
Compatibility	Primairy R32 and R410A	

Selection guide to specific remote controls Utopia Prime and Primairy ranges

		Utopia Prime standard wired PC-ARFP1E	Utopia Prime simplified wired PC-ARH1E	Infrared Utopia Prime PC-AWR	Primairy wired HCWA21NEHH	Primairy infrared HRBA31NEGH
Selection	Max. number of indoor units per remote control	1 to 16	1 to 16	1 to 16	1 to 8	-
	Type of master/slave connection	Non-polarized bus	Non-polarized bus	Non-polarized bus	Polarized bus	-
Main functions	Start/Stop	●	●	●	●	●
	Function mode selection	●	●	●	●	●
	Auto Heating/Cooling mode	● (best used with 3-pipe VRFs)	● (best used with 3-pipe VRFs)	● (best used with 3-pipe VRFs)	●	●
	Dehumidification mode	●	●	●	●	●
	Control selection	● (19°C to 30°C in Cooling mode / 17°C to 30°C in Heating mode)	● (19°C to 30°C in Cooling mode / 17°C to 30°C in Heating mode)	● (19°C to 30°C in Cooling mode / 17°C to 30°C in heating mode)	● (16°C to 30°C in Cooling mode / 16°C to 30°C in heating mode)	● (16°C to 30°C in Cooling mode / 16°C to 30°C in heating mode)
	Adjust control to +/-0.5°C	●	●	-	-	-
	Regulating the fan speed	● (up to 5 according to the indoor unit type)	● (up to 5 according to the indoor unit type)	● (up to 5 according to the indoor unit type)	● (up to 5 according to the indoor unit type)	● (up to 5 according to the indoor unit type)
	Adjust the position of the fan louvres	●	●	●	-	-
	Individually adjust the position of the fan louvres	●	-	-	-	-
	Weekly timer	● (Up to 5 daily programs)	-	-	●	-
	Timer	●	-	● (daily)	●	●
	Holiday mode	-	-	-	-	-
	ECO mode	●	-	-	-	-
	Auto-restart after a power outage	●	●	-	●	-
	Built-in ambiance sensor	●	●	-	●	-
Advanced management features	Lock function mode	●	●	-	●	-
	Lock the setpoint temperature ranges	●	●	-	●	-
	Lock the remote control buttons with the exception of Start/Stop	●	●	-	●	-
	Stop the fan in Thermo OFF Heat mode	●	●	-	-	-
	Stop the fan in Thermo OFF Cooling mode	●	●	-	-	-
	Select the control sensor	●	●	-	-	-
	Night set back (outdoor unit at low noise level)	●	-	-	-	-
	Set Back (freeze protection): sets minimum temperature	●	●	-	●	-
	Gentle Cool (summer comfort): limits the air off Temp° in Cooling mode	●	-	-	-	-
	Auto Boost: rapid rise in temperature at startup	●	-	-	●	●
	Manage the motion sensor	●	-	-	-	-
	Adjust the temperature differential in Heating mode	●	●	-	●	-
	Show ambient temperature	●	-	-	●	-
	Show outside temperature	●	-	-	-	-
	View the energy consumption of the outdoor unit	●	-	-	-	-
	Discharge (auto or by zone)	●	-	-	-	-
Advanced maintenance functions	Error code log	(max. 30)	-	-	-	-
	After-sales contact details	●	-	-	-	-
	Information: defrost in progress	●	●	-	-	-
	Information: filter needs cleaning	●	-	-	●	-
	Self-test indoor unit and remote control electronic boards	●	-	-	-	-
	Check mode (view system parameters)	●	-	-	●	-
	Test Run mode	●	-	-	-	-
	Setting optional features	●	●	-	●	-

The Utopia Prime range in Twin, Triple, and Quad configurations, offers heating and air-conditioning solutions for large spaces such as stores, office floors, warehouses, and restaurants.

It allows you to manage several indoor units running on the same settings. You can connect up to 4 indoor units – different model types and different duties – to the same R32 or R410A outdoor unit. They come in the following models: 4-way cassette units, ducted units, wall units, and ceiling units.



Utopia Prime (Twin, Triple, Quad) R410A or R32

DESIGN AWARD 2020

GOOD DESIGN AWARD 2020

reddot design award





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Benefits
Utopia Prime

Range overview

The R32 refrigerant has a number of advantages over the R410A refrigerant. Although both are “fluorinated greenhouse gases covered by the Kyoto Protocol,” the R32 has a lower global warming potential (GWP = 675) compared to the R410A (GWP = 2088). In addition, the use of R32 reduces the refrigerant charge by 7% to 12% for the same installation with R410A. The R32 reduces its environmental impact by 75% compared to the R410a: low GWP and less charge on the system. This means it has a lower TeqCO2 equivalence, and a low load is needed to achieve better results because of its better thermodynamic characteristics. Another advantage of the R32 over the R410 is its greater ease of recovery and reuse, taking into account the fact that the installation and maintenance are very similar.

Outdoor units	Rated cooling capacity (Hp)				Technology	Supply voltage	Connection rate range	Max. number of connected indoor units	Min. power of connected indoor units	Max. pipe length	Max. level difference between outdoor unit and indoor unit (outdoor unit above / below)	Max. level difference between indoor units	Operating ranges
	3	4	5	6									
Utopia Prime (R32 3-6 Hp) (R410A 4-6 Hp)	•	•	•	•	Mono-split TWIN TRIPLE QUAD	400V / 3 / 50Hz and 230V / 1 / 50Hz (depending on the model)	90 - 115% according to the usage	4	0.8 Hp (2 kW cooling)	From 50 to 75 m	30 m / 20 m	3 m	Heating -20° ~ 18°C WB cooling -5°C (-15°C: optional) ~46°C DB

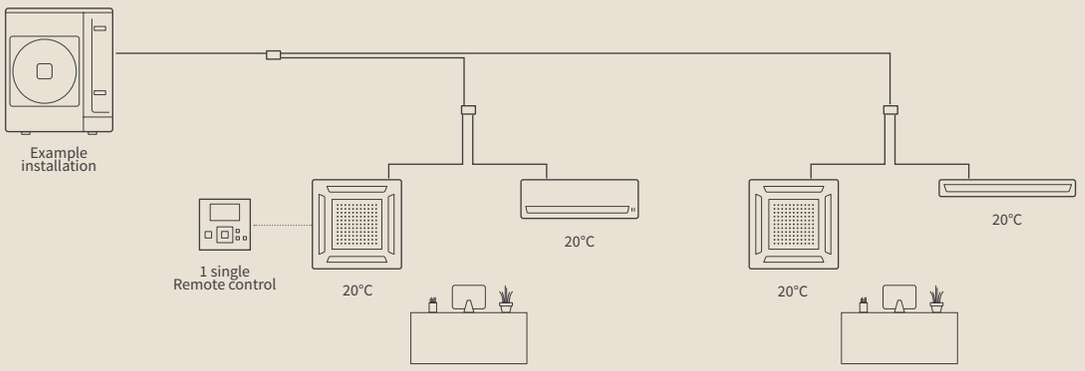
UNIQUE! Infinite number of combinations available for R410A or R32

At 4Hp, up to 4 indoor units per outdoor unit: Option to mix unit types and their capacities on the same installation



Indoor units and remote controls common with the VRF outdoor systems*
(size 0.8Hp Mini-compatible; incompatible with console units)
*Refer to the section TWIN-VRF indoor units to discover the entire range

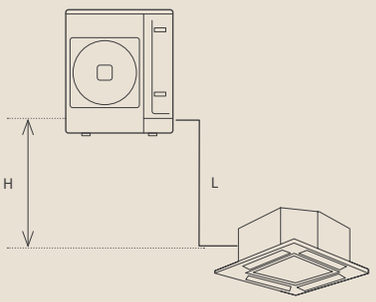
UNIQUE! Renewed master-slave control for more energy savings



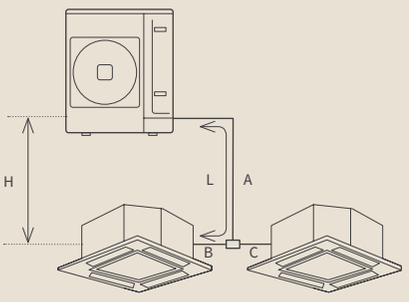
Outdoor unit Utopia Prime	Cassette unit	Wall unit	Cassette unit	Ceiling unit
Startup if All units are in Thermo ON mode	Thermo ON	Thermo ON	Thermo ON	Thermo ON
Stop if At least one unit is in Thermo OFF mode	Thermo ON	Thermo OFF	Thermo ON	Thermo ON

Installation Guide
Utopia Prime

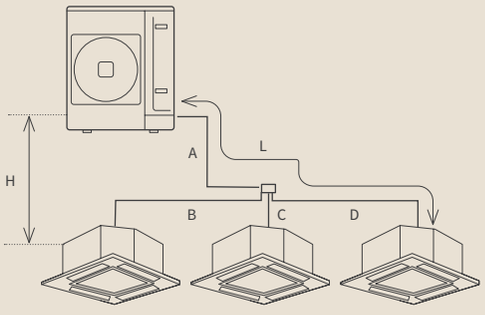
Mono-split configuration
(3 to 6 Hp)



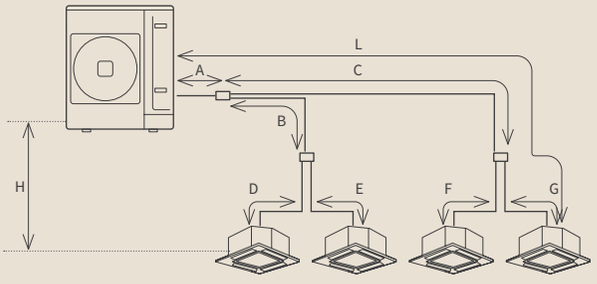
TWIN configuration
(3 to 6 Hp)

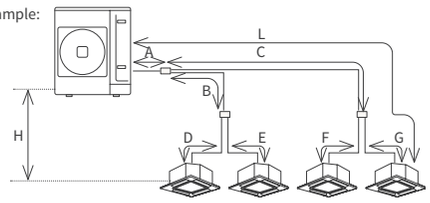


TRIPLE configuration
(4 to 6 Hp)



QUAD configuration
(4 to 6 Hp)



Outdoor units		3 Hp	4 Hp	5 Hp	6 Hp
Max. length between outdoor unit and the furthest indoor unit	Actual length (L)	50	75		
	Equivalent length (EL)	70	95		
Total length of the pipe	2 indoor units (A+B+C)	50	85		
	3 indoor units (A+B+C+D)	-	85		
	4 indoor units (A+B+C+D+E+F+G)	-	85		
Max. length after first branch	2 indoor units (B, C)	15	15		
	2 and 3 indoor units (B, C, D)	-	15		
	4 indoor units (B+D, B+E, C+F, C+G)	-	15		
Max. level difference of outdoor unit to indoor units (H) (outdoor unit above/below)		30 / 20			
Max. level difference of indoor units to indoor units		3			
Max. level difference of multikit to indoor units / Multikit-Multikit		3			
Max. imbalance between branches (B-C) (2 and 3 indoor units) (B-D) (3 indoor units)(C-D) (3 indoor units) (C+G)-(C+F) (4 indoor units) (B+E)-(B+D) (4 indoor units) (C+G)-(B+E) (4 indoor units) (C+G)-(B+D) (4 indoor units) (C+F)-(B+E) (4 indoor units) (C+F)-(B+D) (4 indoor units)	Example: 	< 8	< 10		

Utopia Prime

A TWIN to QUAD solution with a choice of R410A or R32 to provide heating solutions and air-conditioning for large spaces.



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Twin and VRF shared indoor unit groups

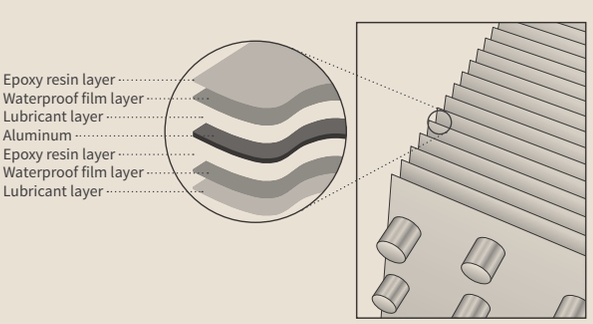
The UTOPIA PRIME range comes with all the advantages of VRF indoor units, so you can make use of a wide range of combinations.
Different types of indoor units can be mixed on the same installation.

Flexible installation

UNIQUE! The new range of 4 to 6Hp can come in TWIN, TRIPLE, or QUAD configurations for R32 and R410A and has a static pressure of 30Pa. This allows the air to be recirculated. Connect up to 4 indoor units in the Set free range (size 0.8Hp Mini compatible; console units not compatible).

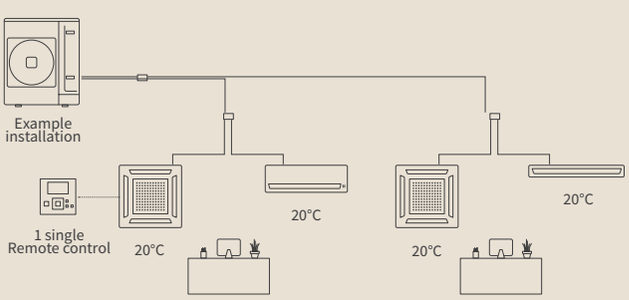
Advanced anti-corrosion treatment

With its triple coating, Utopia Prime offers the best protection on the market for use in tough environments.



Reinvented master-slave control for more energy savings

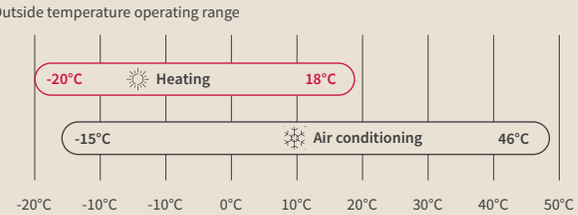
The outdoor unit will start up only if all 4 indoor units need cooling or heating. The shutdown of the group is triggered as soon as one of the indoor units no longer requires heat/cooling, which promises real energy savings.



Large operating ranges

Utopia Prime will keep working in extreme temperatures: down to -20°C for heating and -15°C to 46°C for cooling (-5°C to 46°C at 4 to 6Hp). Features that make this a product for perfect year-round comfort.

Outside temperature operating range

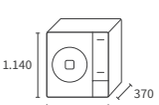


Outdoor units





RAS-3HVRC2



RAS-4H(V)RC2E
RAS-5H(V)RC2E
RAS-6H(V)RC2E
RAS-4H(V)NC2E
RAS-5H(V)NC2E
RAS-6H(V)NC2E

		R32 REFRIGERANT				R410A REFRIGERANT		
		RAS-3HVRC2	RAS-4H(V)RC2E	RAS-5H(V)RC2E	RAS-6H(V)RC2E	RAS-4H(V)NC2E	RAS-5H(V)NC2E	RAS-6H(V)NC2E
Performance, cooling	**Unit**	**3Hp**	**4Hp**	**5Hp**	**6Hp**	**4Hp**	**5Hp**	**6Hp**
Nominal cooling capacity	kW	7.1	10.00	11.90	14.00	10.00	11.90	14.00
UK total cooling capacity	kW	7.41	10.30	12.70	13.60	10.30	12.70	13.60
Rated power input cooling	kW	1.67	2.56	3.38	4.32	2.86	3.78	4.91
EER	-	3.93	3.90	3.52	3.24	3.50	3.15	2.85
SEER (average climate)	-	7.33	6.93(V) - 6.62	6.60(V) - 6.37	7.35(V) - 7.25	6.69(V) - 6.42	6.35(V) - 6.13	7.01(V) - 6.92
Energy class (cooling)	-	A++			-	A++		-
Working range in Cooling	-	-15°C / +46°C (DB)				-15°C / +46°C (DB)		
Performance, heating								
Nominal heating capacity	kW	8.00	11.20	14.00	16.00	11.20	14.00	16.00
Rated power input heating	kW	1.94	2.65	3.52	3.64	2.60	3.52	3.64
COP	-	4.11	4.23	3.98	4.40	4.30	3.98	4.40
SCOP (average climate)	-	4.20	4.36(V) - 4.36	4.26(V) - 4.25	4.73(V) - 4.73	4.40(V) - 4.40	4.24(V) - 4.23	4.71(V) - 4.73
Energy class (heating)	-	A+			-	A+		-
Working range in Heating	-	-20°C / 18°C (WB)				-20°C / 18°C (WB)		
Technical features								
Airflow (cooling)	m³/h	2700	4800	4800	4800	4800	4800	4800
Sound pressure in cooling mode (nightmode) [1]	dB(A)	54 (48)	54 (51)	54 (51)	56 (51)	52 (50)	54 (53)	55 (53)
Sound power	dB(A)	69	70	70	72	68	69	71
Net weight	kg	48	84			84		
Dimensions (H x L x D)	mm	629 x 799 x 300	1140 x 950 x 370			1140 x 950 x 370		
Min. power of indoor unit	Hp	0.8	0.8			0.8		
Number of connectible units (min - max)	-	1 - 2	1 - 4			1 - 4		
Capacity ratio (min - max)	%	90% - 100%	90% - 115%			90% - 115%		
Compressor	-	Inverter DC rotary unit				Inverter DC rotary unit		
Refrigeration characteristics								
Max. length / Additional charge	m/g/m	50 / 45	75 / 45			75 / 60		
Initial refrigerant charge	kg	1.7	3.0			3.2		
Pre-charged for	m	20	30			30		
Min. length	m	5	5			5		
Max. level difference (outdoor unit above / below)	m	30 / 20	30 / 20			30 / 20		
Diameter of pipes (Liq / Gas)	mm inches	9.52 (3/8) - 15.88 (5/8)				9.52 (3/8) - 15.88 (5/8)		
Refrigerant	-	R32				R410A		
Electrical features								
Power supply	-	1~ 230V 50Hz	1~ 230V 50Hz or 3N~ 400V 50Hz			1~ 230V 50Hz or 3N~ 400V 50Hz		
Max. current	A	15.8	22.5 or 15			22.5 or 15		
Recommended fuse size	A	20	25 or 20			25 or 20		
Cable width (EN 60 335-1)*	mm^2	3 x 4.00	3 x 6.00 or 5 x 4.00			3 x 6.00 or 5 x 4.00		
Indoor/outdoor connection (shielded)*	mm^2	2 x 0.75	2 x 0.75			2 x 0.75		

(V) Single-phase version.
* Data shown is for indication purposes only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.
[1] Sound levels (pressure) are measured in an anechoic chamber at 1.50 m from the floor level and 1 m from, unit's front surface.

Controls (see the tab VRF TWIN controls)

Individual controls



PC-ARFP1E
(full wired)



PC-ARH1E
(simple wired)



PC-AWR
(Infrared)

Central controls



PSC-A32MN
(touch)



PSC-A64GT
(touch)



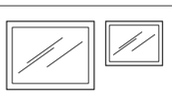
Aircloud Pro



CSNET Lite
(web)



CSNET Screenless
(web)



CSNET Manager 2T10 (web and touch)
CSNET Manager 2T15 (web and touch)

Communication protocol



MODBUS



BACNET



KNX



LONWORKS

Compatible accessories



Condensation drainage kit
DDB-26 (models 4 / 5 / 6 Hp)
DDB-12L (model 3 Hp)



Remote sensor
THM-R2AE



PCC-1A
connectors

Exclusive to Hitachi: all our System Free indoor units are compatible with the outdoor units Sigma, Set Free Mini, VRF Centrifugal, Utopia Prime, Micro VRF IVX Prime and IVX Comfort, in VRF or Split versions. They can be operated by a wide range of remote controls, from the simplest to the most sophisticated, to meet any requirement. The option to adjust the power of these indoor units brings a unique flexibility to the market, responding to the scalability of buildings at a lower cost.



SYSTEM FREE
indoor units



SYSTEM FREE indoor units

A new range of indoor units compatible with refrigerants R32 and R410A.
FSR: R410A/R32

All our Set Free indoor units will be updated, with the exception of consoles RPF/RPFI and > 6Hp ducted units, which will remain compatible with R410A only.

4-way cassette unit



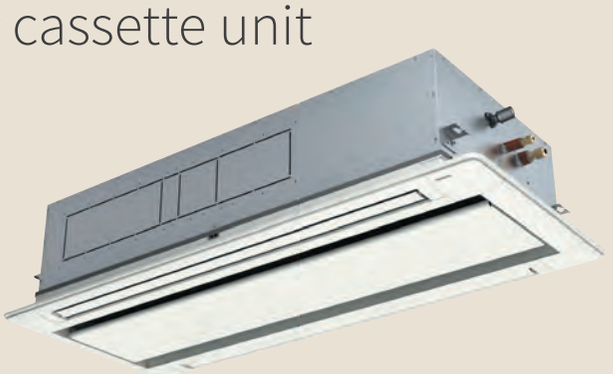
600 X 600
RCIM-...FSRE



800 X 800
RCI-...FSR

- Available from 1.1 to 16 kW.
- 600 x 600 flush cassette unit.
- Save energy with the motion sensor (optional).
- Control each fan louvre separately.
- Up to 850 mm lift for condensate.

2-way cassette unit



RCD-...FSR

- Available from 2.2 to 16 kW.
- Save energy with the optional motion sensor.
- Up to 850 mm lift for condensate.
- Control each louvre separately.

Ducted unit



RPIL/RPI/RPIH-0.4~6FSRE
RPI-8~20FSN

- Available from 1.1 to 56 kW.
- Up to 850 mm lift for condensate.
- Up to 220 Pa available static pressure.

Wall unit



RPK-...FSRM

– Available from 1.1 to 11.2 kW.
– Optional deported electronic expansion valve.
– 4 fan speeds available.
– Integrated infrared receiver.

Console



RPF-...FSN2E

- Available from 2.2 to 7.1 kW.
- Cased and un-cased version.
- Depth of just 220 mm.
- Integrated remote control (on cased model).

Ceiling unit



RPC-...FSR

- Available from 3.8 to 16 kW.
- Air flow suitable for large premises.
- 4 fan speeds.
- Pipe connections from 3 directions.

Hydro Free



High-temperature
RWHT-5.0VNF1E

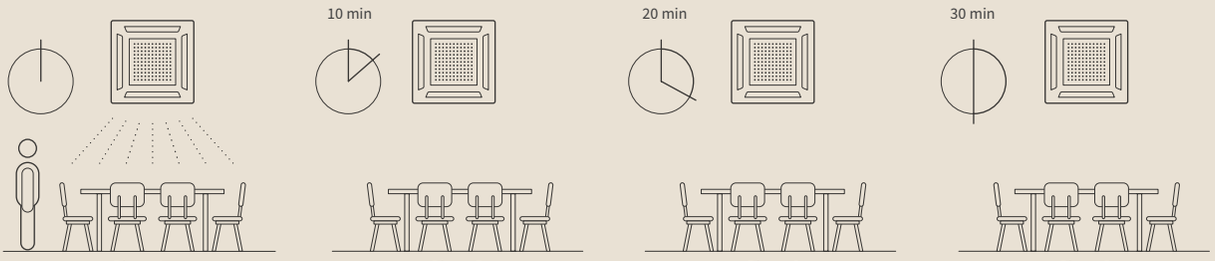


Low-temperature
RWLT-5.0~10VN1E

- Compatible with VRF SIGMA and Set Free Mini
- Perfect for a thermodynamic DHW solution (high-temperature module, 80°C).
- Perfect for a water heating solution in addition to DX comfort (low-temperature module).

Benefits
SYSTEM FREE indoor units

1 Save energy with the motion sensor



Phase A
Activity

The cassette unit operates at the setpoint temperature and the chosen fan speed.

Phase B
10 minutes if empty

- Adjusts the temperature by +/- 1°C depending on the operating mode.
- Sets the fan speed to one setting lower.

Phase C
20 minutes if empty

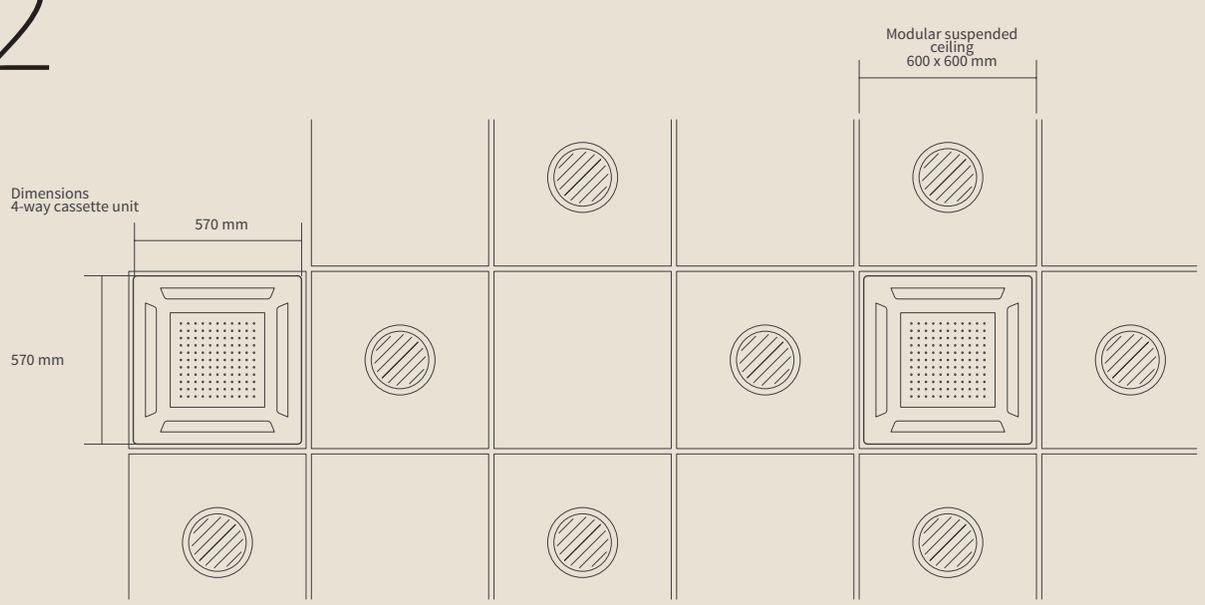
- Adjusts the temperature by +/- 2°C depending on the operating mode.
- Sets the fan speed to one setting lower.

Phase D
30 minutes if empty
3 OPTIONS:

- 1. MODE ON: stays in Phase C mode.
- 2. STAND BY MODE: the indoor unit enters Unit-OFF mode and returns to normal operation when it detects motion.
- 3. Off MODE: the inside unit turns off and turn on again manually.

The motion sensor regulates the indoor unit according to the number of people in the room. Achieve up to 14% energy savings by avoiding unnecessary consumption when the room is unoccupied.* Option available for: 600 x 600 cassette unit, 800 x 800 cassette unit, ducted unit, ceiling unit.

2 Perfect integration

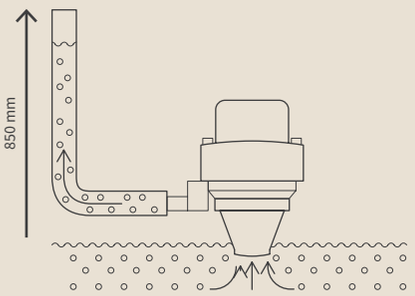


The 600x600 4-way cassette is designed to fit seamlessly into suspended ceilings.

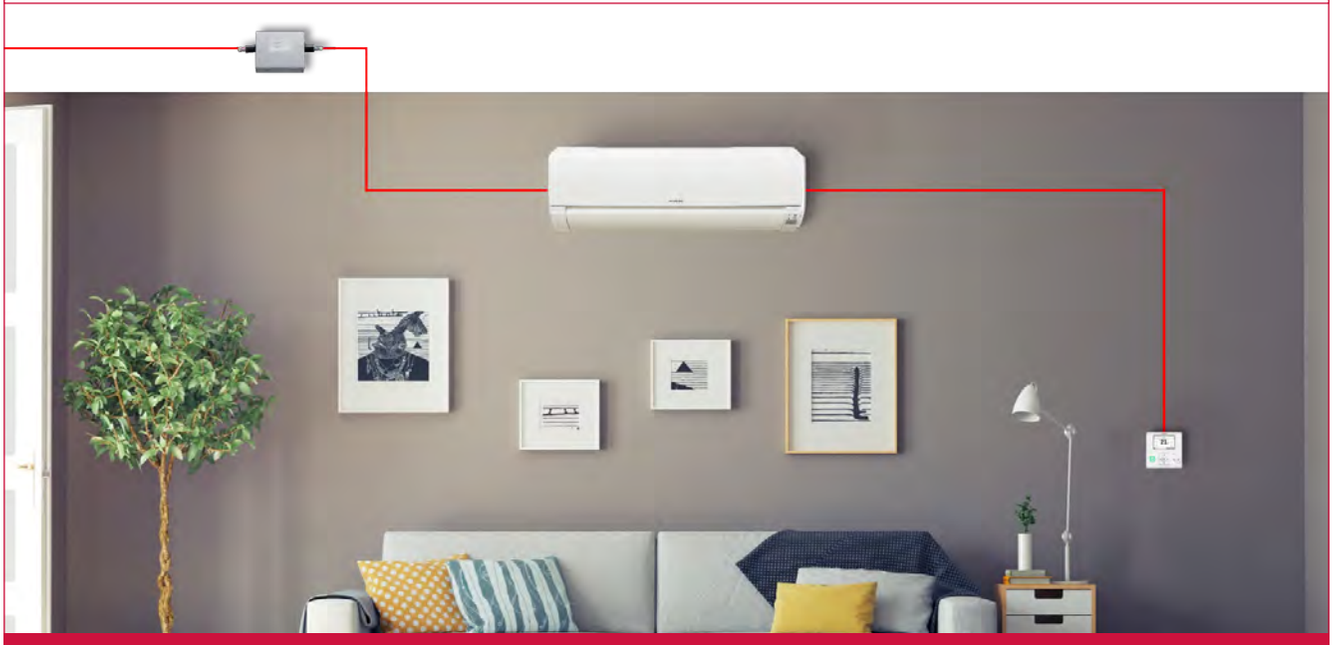
These indoor units fit perfectly into any small space.

3 Extended height for condensate extraction

Integrated as standard on cassette and ducted units (optional on ceiling units), the extraction pump can handle as much as 850 mm of condensation. The pump automatically triggers as soon as cooling mode is selected. Self-powered condensing pump: any fault on a unit's condensing pump will not affect the rest of the system.

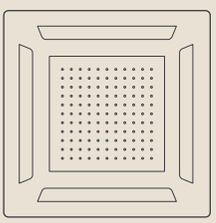


4 Low noise with the separate EEV



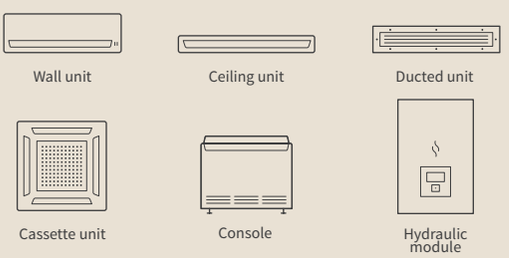
With indoor wall units, you can place the EEV outside of the room, significantly reducing noise levels for the best acoustic comfort.

5 Higher air flow rate



Same duty but more air flow than competitor's cassette, wall, and ducted units. Our indoor units have 4 fan speeds to adapt the airflow and ensure more comfort in any room.

6 Range compatibility



All our System Free indoor unit ranges are compatible with all our outdoor units (Set Free Sigma, Set Free Mini, Centrifugal, Utopia Prime, IVX Prime, and IVX Comfort). Hydrofree compatible with SIGMA and Set Free Mini only.

* For more information, please refer to the technical documentation.

600 x 600 4-way cassette unit

SYSTEM FREE · GENTLE COOL · 0.4 HP · POWER SWITCH · R410A REFRIGERANT · R32 REFRIGERANT · NEW



Installation time

The 600 x 600 cassette unit has a compact design and flush front panel to integrate perfectly into suspended ceilings (570 x 570mm casing). In addition, it is equipped as standard with a pump to remove condensation up to 850 mm.

Low noise level

With 4 fan speeds, this 600 x 600 cassette unit is one of the most silent on the market.

Energy-saving

The motion sensor (optional) automatically optimizes the level of comfort while limiting the energy consumption in rooms only occupied occasionally.
It continuously analyzes thermal disparities as well as the presence of people in the room, adjusting its setting temperature (+/- 2°C), fan speed, and airflow direction to suit.

Unrivaled comfort

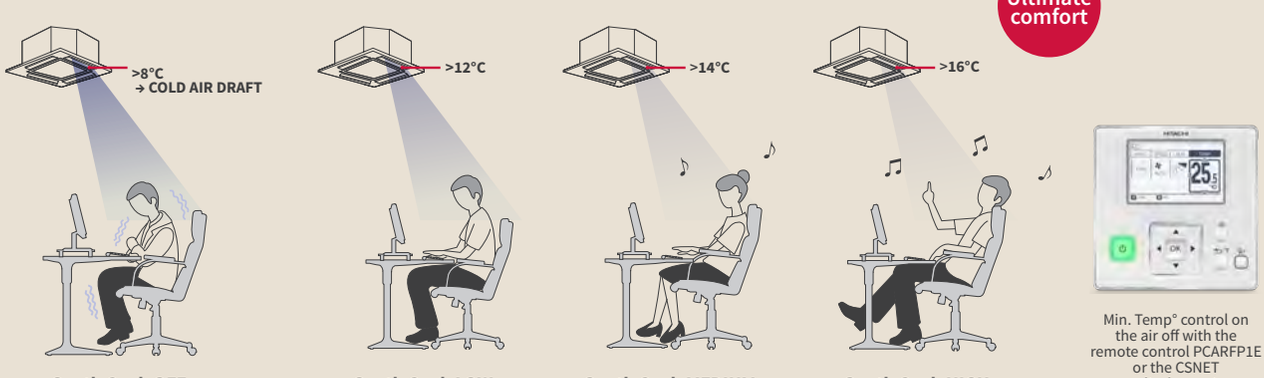
The GENTLE COOL function, accessible on the wired remote control PC-ARFP1E, adjusts the min. air off temperature. In summer, cold air drafts are avoided as you can set the air off temperature to the maximum setting.

Flexibility

Our 600 x 600 cassette units have an impressive range of 1.1 to 7kW, offering flexibility like no other on the market.
You can also use the adjustable power settings to respond precisely to each project: 4 settings to choose from, with huge ranges in airflow.

Potential for discomfort — **GentleCool** → **No cold drafts**

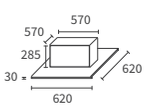
Ultimate comfort



GentleCool: OFF | **GentleCool: LOW** | **GentleCool: MEDIUM** | **GentleCool: HIGH**

Min. Temp° control on the air off with the remote control PCARFP1E or the CSNET monitoring system

Indoor units

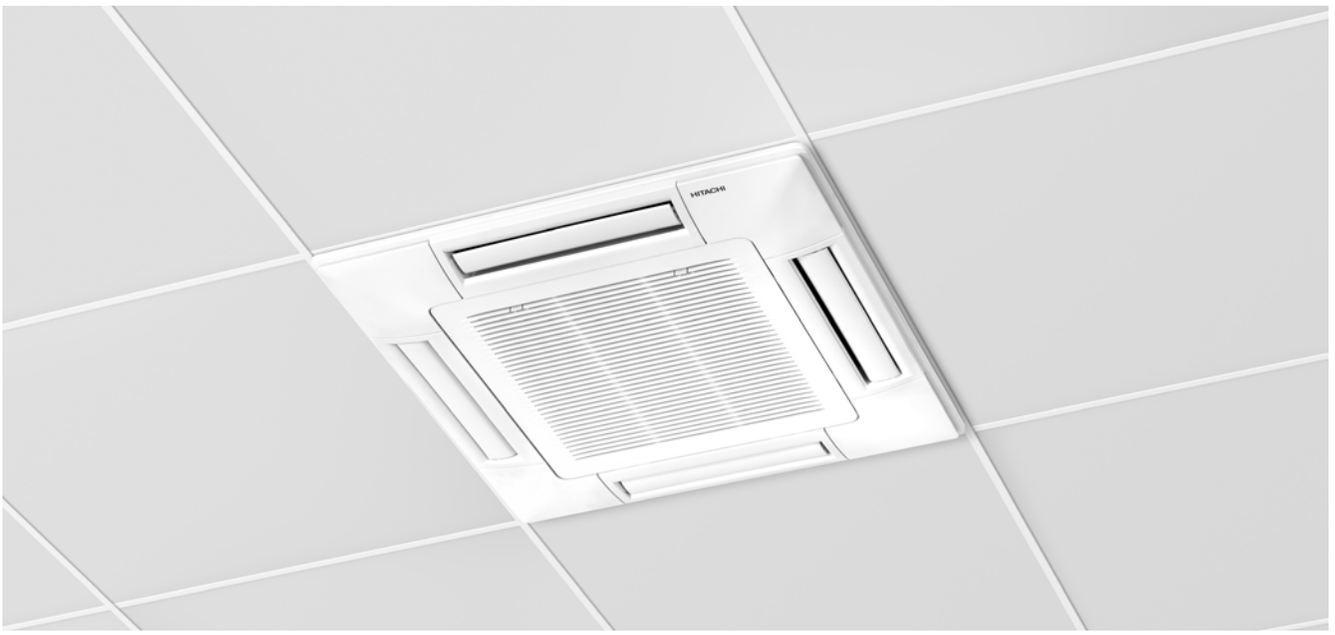


RCIM-0.4FSRE
RCIM-0.6FSRE
RCIM-0.8FSRE
RCIM-1.0FSRE
RCIM-1.5FSRE
RCIM-2.0FSRE
RCIM-2.5FSRE

600 x 600 4-way cassette

Indoor units	Unit	RCIM-0.4FSRE	RCIM-0.6FSRE	RCIM-0.8FSRE	RCIM-1.0FSRE	RCIM-1.5FSRE	RCIM-2.0FSRE	RCIM-2.5FSRE
Power (adjustable)	Hp	0.40	0.60	0.80	1	1.30 ← 1.50	1.80 ← 2.00	2.30 ← 2.50
Nominal Cooling capacity UTOPIA Prime & IVX	kW	not available		2.00	2.50	3.60	5.00	5.60
Nominal Heating capacity UTOPIA Prime & IVX	kW	not available		2.20	2.80	4.00	5.60	6.30
Nominal Cooling capacity SET FREE	kW	1.10	1.70	2.20	2.80	3.80 ← 4.00	5.20 ← 5.60	6.70 ← 7.10
Nominal Heating capacity SET FREE	kW	1.25	1.90	2.50	3.20	4.20 ← 4.80	5.60 ← 6.30	7.50 ← 8.50
Sound pressure in Cooling mode (EL/L/M/H)[1][3]	dB(A)	24.5 / 25 / 27 / 29	24.5 / 28 / 30 / 34	24.5 / 29 / 33 / 36	24.5 / 30 / 34 / 38	27.5 / 33 / 37 / 41	31 / 35 / 39 / 45	35 / 39 / 43 / 47
Sound power	dB(A)	43	47	50	51	54	56	60
Airflow in Cooling mode (EL/L/M/H)[4]	m^3/h	360 / 414 / 468 / 510	360 / 450 / 510 / 600	360 / 480 / 570 / 660	360 / 510 / 600 / 720	420 / 570 / 660 / 780	480 / 600 / 720 / 900	600 / 720 / 840 / 960
Condensate pump	-	Yes						
Max. elevation	mm	850						
Diameter of pipes (Liq / Gas)	inches	1/4 - 1/2						3/8 - 5/8
Condensate outlet diameter (ext.)	mm	32						
Dimensions (H x W x D)	mm	285 x 570 x 570						
Fascia panel dimensions (H x W x D)	mm	30 x 620 x 620						
Weight of the unit + fascia panel	kg	16 + 2.50					17 + 2.50	
Power supply	-	1 ~ 230V 50Hz						
Cable width (EN 60 335-1) [2]	mm^2	3 x 0.75						
Recommended fuse size	A	5						
Part number of the front panel	-	P-AP56NAM						

[1] Sound pressure is measured under the following conditions: 1.50 m below the unit.
[2] Data shown is for indication purposes only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.
[3] High-speed access is possible with remote controls PC-ARFP1E and PC-ARH1E.
[4] Very low speed is available in Thermo-off mode.



You can have multiple contacts with the connector PCC-1A: progress report, error report, thermostat control, remote "Start/Stop".

Controls and compatible accessories (see the tab VRF TWIN Controls)



Simple wired controller
PC-ARH1E



Infrared controller
PC-AWR



Hard wired control
PC-ARFP1E
(PC-ARFG-E available in 2022)



Remote sensor
THM-R2AE



Infrared receiver
PC-ALHC1 (integrated) / PC-ALHZ1 (external)



Multi-tenant card
PC-AMTB



Motion sensor
SOR-NEC



Connectors
PCC-1A



Fresh air kit
PD-75C

Silent-Iconic fascia panel for cassette unit 800x800

NEW

Design White



Design Black





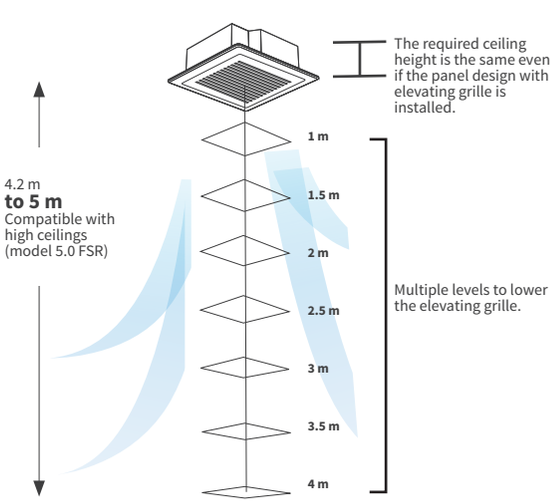


Features

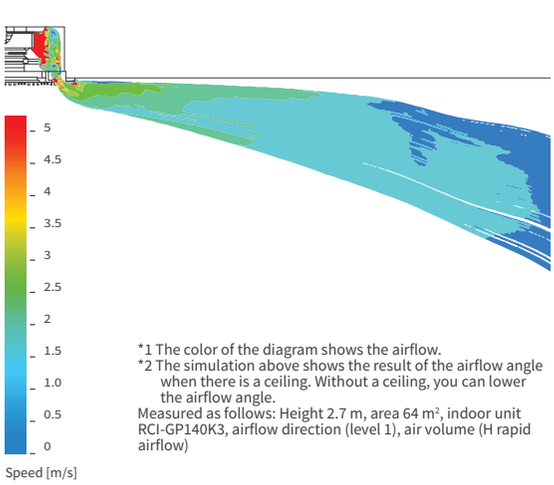
A design that fits perfectly into any space
Designed to harmonize with the room – the shutter-like intake flaps are placed centrally and the fan blades are darkened to complete the discrete look.



Easy-clean filter
The “fascia panel design with elevating grille” makes it easy to clean the filter. The lowering distance can reach 4 m, and the Silent-Iconic fascia panel can be installed in buildings with a high suspended ceiling heights.

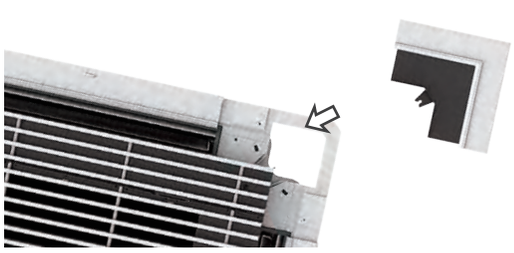


Guaranteed ease-of-use
The all-new fascia panel louvre design and air outflow shape enhance the Coanda effect, which significantly improves user comfort by avoiding the direct impact of cold air circulation.



*1 The color of the diagram shows the airflow.
*2 The simulation above shows the result of the airflow angle when there is a ceiling. Without a ceiling, you can lower the airflow angle.
Measured as follows: Height 2.7 m, area 64 m², indoor unit RCI-GP140K3, airflow direction (level 1), air volume (H rapid airflow)

Easy-to-install front panels
Sliding edges make installation easier – just add the screws.



Designed to align with the ceiling surface
The small gap between the fascia panel and the ceiling gives a visual effect of “lightness” and blends in with the ceiling.



800 x 800 4-way cassette unit

SYSTEM FREE · GENTLE COOL · POWER SWITCH · R410A REFRIGERANT · R32 REFRIGERANT · NEW



Standard White front panel



Standard Black front panel

Installation time

The 800 x 800 cassette unit fits perfectly into suspended ceilings thanks to its low recess height (248 mm) as well as in high ceilings with a possible installation of up to 4.20 m, depending on the model. In addition, it is equipped as standard with a pump to remove condensation up to 850 mm.

Unrivaled comfort

The GENTLE COOL function, accessible on the wired remote control PC-ARFP1E, adjusts the min. air off temperature.

In summer, cold air drafts are avoided as you can set the air off temperature to the maximum setting.

Energy-saving

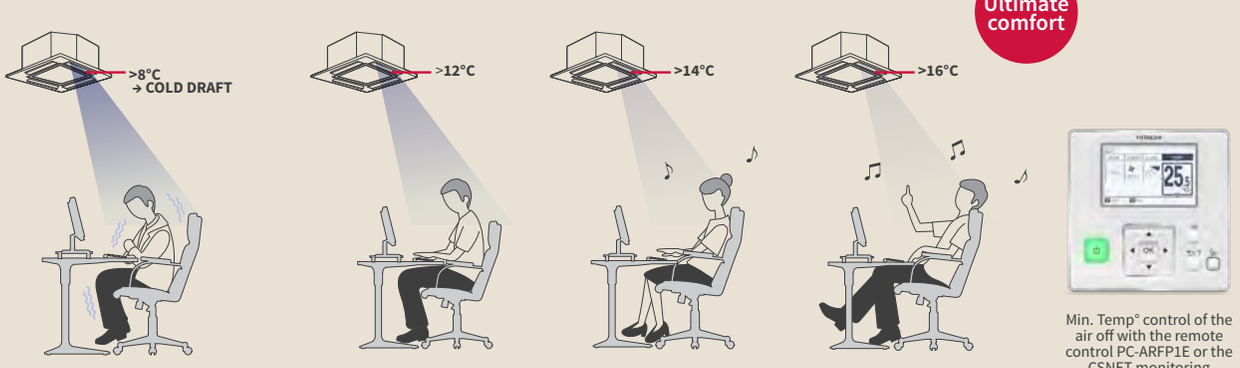
The motion sensor (optional) automatically optimizes the level of comfort while limiting the energy consumption in rooms only occupied occasionally.
It continuously analyzes thermal disparities as well as the presence of people in the room, adjusting its setting temperature (+/- 2°C), fan speed, and airflow direction to suit.

Flexibility

Our 800 x 800 cassette units have an impressive range of 2.8 to 16 kW, offering flexibility like no other on the market.
You can also use the adjustable power settings to respond precisely to each project: 4 settings to choose from, with huge ranges in airflow.

Potential for discomfort — **GentleCool** → **No cold drafts**

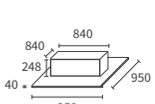
Ultimate comfort



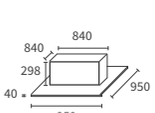
GentleCool: OFF | **GentleCool: LOW** | **GentleCool: MEDIUM** | **GentleCool: HIGH**

Min. Temp° control of the air off with the remote control PC-ARFP1E or the CSNET monitoring system

Indoor units



RCI-1.0FSR
RCI-1.5FSR
RCI-2.0FSR
RCI-2.5FSR



RCI-3.0FSR
RCI-4.0FSR
RCI-5.0FSR
RCI-6.0FSR

800 x 800 4-way cassette

Indoor units	Unit	RCI-1.0FSR	RCI-1.5FSR	RCI-2.0FSR	RCI-2.5FSR	RCI-3.0FSR	RCI-4.0FSR	RCI-5.0FSR	RCI-6.0FSR
Power (adjustable)	Hp	1.00	1.30 ← 1.50	1.80 ← 2.00	2.30 ← 2.50	3.00	4.00	5.00	6.00
Nominal Cooling capacity UTOPIA Prime & IVX	kW	2.50	3.60	5.00	5.60	7.10	10.00	12.50	14.00
Nominal Heating capacity UTOPIA Prime & IVX	kW	2.80	4.00	5.60	6.30	8.00	11.20	14.00	16.00
Nominal Cooling capacity SET FREE	kW	2.80	3.80 ← 4.00	5.20 ← 5.60	6.70 ← 7.10	8.00	11.20	14.00	16.00
Nominal Heating capacity SET FREE	kW	3.20	4.20 ← 4.80	5.60 ← 6.30	7.50 ← 8.50	9.00	12.50	16.00	18.00
Sound pressure in Cooling mode (EL/L/M/H)[1][3]	dB(A)	27 / 28 / 30 / 33	27 / 30 / 31 / 35	27 / 30 / 32 / 37	28 / 32 / 36 / 42		33 / 39 / 43 / 48	35 / 40 / 45 / 48	37 / 41 / 46 / 48
Sound power	dB(A)	52	53	55	56	57	64	64	65
Airflow in Cooling mode (EL/L/M/H)[4]	m^3/h	540 / 660 / 780 / 900	660 / 840 / 1020 / 1260	660 / 840 / 1020 / 1320	840 / 1080 / 1380 / 1620	840 / 1080 / 1380 / 1620	1200 / 1440 / 1860 / 2220	1260 / 1560 / 1980 / 2220	1320 / 1680 / 2100 / 2220
Condensate pump	-	Yes							
Max. elevation	mm	850							
Diameter of pipes (Liq / Gas)	inches	1/4 - 1/2			3/8 - 5/8				
Condensate outlet diameter (ext.)	mm	32							
Dimensions (H x W x D)	mm	248 x 840 x 840				298 x 840 x 840			
Fascia panel dimensions (H x W x D)	mm	40 x 950 x 950							
Weight of the unit + fascia panel	kg	20 + 6.50	21 + 6.50		22 + 6.50	26 + 6.50			
Power supply	-	1 ~ 230V 50Hz							
Cable width (EN 60 335-1) [2]	mm^2	3 x 0.75							
Recommended fuse size	A	5							
Part number for standard White front panel (Black)	-	P-N23NA2 (P-AP160KA3)							

[1] Sound pressure is measured under the following conditions: 1.50 m below the unit.
[2] Data shown is for indication purposes only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.
[3] High-speed access is possible with remote controls PC-ARFP1E and PC-ARH1E.
[4] Very low speed is available in Thermo-off mode.

Silent-Iconic front panel

	Natural White		Black
Type of fascia panel	White fascia panel design	White fascia panel design with self-elevating grille	Black fascia panel design
Part number	P-GP160NAP	P-GP160NAPU	P-GP160KAP
Dimensions (H x L x D)	52 x 950 x 950 mm		







Fascia panel lift	d7	01	02	03	04	05	06	07
Control lowering on wired remote control PC-ARFP1E	Lowers in 7 stages	1.0 m	1.5 m	2.0 m	2.5 m	3.0 m	3.5 m	4.0 m

You can have multiple contacts with the connector PCC-1A : progress report, error report, thermostat control, remote "Start/Stop".

Controles and compatible accessories (see the tab VRF TWIN Controls)



Simple wired controller
PC-ARH1E



Infrared controller
PC-AWR



Hard wired remote
PC-ARFP1E
(PC-ARFG-E available in 2022)



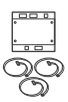
Fresh air kit
PD-75A



Remote sensor
THM-R2AE



Infrared receiver
PC-ALH3 (integrated) PC-ALHZ1 (external)



Multi-tenant card
PC-AMTB



Motion sensor
PS-MSK2



Connectors
PCC-1A



Remote blower connection kit
PDF-71C1 / PDF-160C1

2-way cassette unit



Unrivaled comfort

The GENTLE COOL function, accessible on the wired remote control PCARFP1E, adjusts the min. air off temperature. In summer, cold air drafts are avoided as you can set the air off temperature to the maximum setting.

Stand-out solution

Our choice of 2-way cassettes, ranging from 2.2 to 16 kW, is the perfect solution for larger rectangular spaces.
You can also use the adjustable power settings to respond precisely to each project.

Installation time

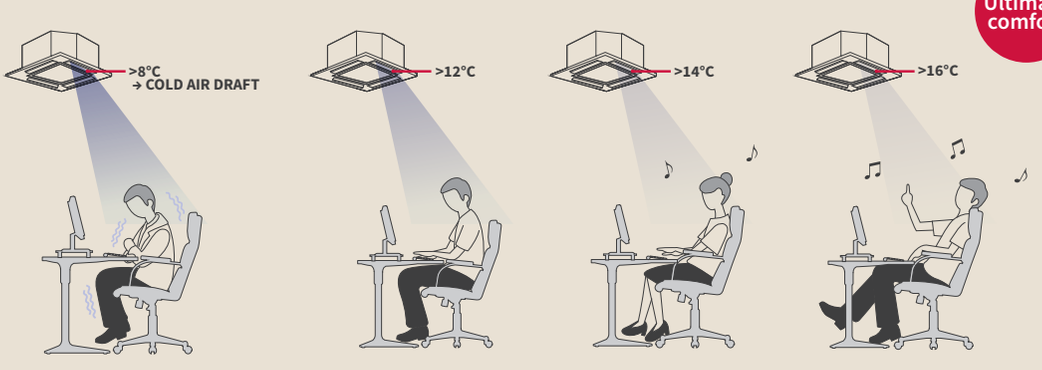
This unit is easy to install thanks to its light weight (23 kg) and the lift pump (850 mm) built-in as standard.

Energy-saving

The motion sensor (optional) automatically optimizes the level of comfort while limiting the energy consumption in rooms only occupied occasionally. It continuously analyzes thermal disparities as well as the presence of people in the room, adjusting its setting temperature (down to 2°C), fan speed, and airflow direction to suit.

Potential for discomfort — **GentleCool** → **No cold drafts**

Ultimate comfort

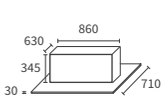


GentleCool: OFF | **GentleCool: LOW** | **GentleCool: MEDIUM** | **GentleCool: HIGH**

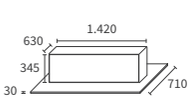


Min. Temp° control of the air off with the remote control PC-ARFP1E or the CSNET monitoring system

Indoor units



RCD-0.8FSR
RCD-1.0FSR
RCD-1.5FSR
RCD-2.0FSR
RCD-2.5FSR
RCD-3.0FSR



RCD-4.0FSR
RCD-5.0FSR
RCD-6.0FSR

2-way cassette unit

Indoor units	Unit	RCD-0.8FSR	RCD-1.0FSR	RCD-1.5FSR	RCD-2.0FSR	RCD-2.5FSR	RCD-3.0FSR	RCD-4.0FSR	RCD-5.0FSR	RCD-6.0FSR
Power (adjustable)	Hp	0.80	1.00	1.30 ← 1.50	1.80 ← 2.00	2.30 ← 2.50	3.00	4.00	5.00	6.00
Nominal Cooling capacity UTOPIA Prime & IVX	kW	2.00	2.50	3.60	5.00	5.60	7.10	10.00	12.50	14.00
Nominal Heating capacity UTOPIA Prime & IVX	kW	2.20	2.80	4.00	5.60	6.30	8.00	11.20	14.00	16.00
Nominal Cooling capacity SET FREE	kW	2.20	2.80	3.80 ← 4.00	5.20 ← 5.60	6.70 ← 7.10	8.00	11.20	14.00	16.00
Nominal Heating capacity SET FREE	kW	2.50	3.20	4.20 ← 4.80	5.60 ← 6.30	7.50 ← 8.50	9.00	12.50	16.00	18.00
Sound pressure in Cooling mode (EL/L/M/H)[1][3]	dB(A)	27 / 28 / 29 / 30	27 / 28 / 29 / 31	30 / 31 / 34 / 37	30 / 33 / 36 / 39	33 / 36 / 39 / 42	33 / 38 / 42 / 45	34 / 37 / 40 / 43	35 / 41 / 44 / 47	39 / 42 / 45 / 48
Sound power	dB(A)	45	48	51	52	55	58	57	60	61
Airflow in Cooling mode (EL/L/M/H)[4]	m^3/h	390 / 450 / 540 / 600	420 / 510 / 570 / 660	600 / 690 / 780 / 900	630 / 750 / 870 / 990	750 / 870 / 990 / 1110	750 / 960 / 1110 / 1260	1200 / 1380 / 1590 / 1800	1260 / 1620 / 1860 / 2100	1440 / 1710 / 1950 / 2220
Condensate pump	-	yes								
Max. elevation	mm	850								
Diameter of pipes (Liq / Gas)	inches	1/4 - 1/2				3/8 - 5/8				
Condensate outlet diameter (ext.)	mm	32								
Dimensions (H x W x D)	mm	345 x 860 x 630						345 x 1420 x 630		
Fascia panel dimensions (H x W x D)	mm	30 x 1100 x 710						30 x 1660 x 710		
Weight of the unit + fascia panel	kg	23 + 7.50		25 + 7.50				39 +10.50		
Power supply	-	1~ 230V 50Hz								
Cable width (EN 60 335-1) [2]	mm^2	3 x 0.75								
Recommended fuse size	A	5								
Part number of the fascia panel	-	P-AP90DNA						P-AP160DNA		

(1) Sound levels (pressure) are measured in an anechoic chamber at 1.50 m under the unit.
(2) Data shown is for indication purposes only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility.
(3) High-speed access is possible with remote controls PC-ARFP1E and PC-ARH1E.
(4) Very low speed is available in Thermo-off mode.



You can have multiple contacts with the connector PCC-1A : progress report, error report, thermostat control, remote "Start/Stop".

Controls and compatible accessories (see the tab VRF TWIN Controls)



Simple wired controller

PC-ARH1E



Infrared controller

PC-AWR



Hard wired controller

PC-ARFP1E
(PC-ARFG-E available in 2022)



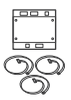
Remote sensor

THM-R2AE



Infrared receiver

PC-ALHD1 (integrated) / PC-ALHZ1 (external)



Multi-tenant card

PC-AMTB



Motion sensor

SOR-NED



Connectors

PCC-1A



Fresh air kit

PD-150D

Ducted unit

SYSTEM FREE · GENTLE COOL · POWER SWITCH · R32 REFRIGERANT · 0.4 HP · AIR ZONE · R410A REFRIGERANT · NEW



GENTLE COOL air off temperature setting for ultimate comfort

The GENTLE COOL air off temperature setting, accessible on the wired remote control PC-ARFP1E, adjusts the min. air off temperature. There is minimal risk of condensation forming, which improves the air quality. It also stops any summer drafts.

Flexible installation

Our new ducted units offer greater flexibility when it comes to installation. The electrical box can be moved. The 100Pa model has rear pipework connections so it can easily fit into small spaces, and the pump can be disconnected onsite.

Easy maintenance

Up to 850 mm lift for condensate. Filter is accessible from below or the side (0.4 to 6 hp).

Compatible with Airzone solution

Thanks to its partnership with Airzone, Hitachi is able to offer you precision step-by-step temperature control.

30% fresh air supply

All Hitachi ducted units can work on 30% fresh air to provide the best quality and cleanest air.

Available in sizes 45 and 56 kW

EXCLUSIVE

The most extensive range on the market, from 1.1kW to 56 kW.









Slim ducted unit 100 Pa 1.1 to 4 kW

- Integrated and removable condensate pump.
- Filter accessible from below or from the right side.
- Low-height: 197 mm.
- Pipe connections from the rear.
- Electric box (can be moved)
- Air return from the rear or from below (optional).

Ducted unit 150 Pa 4 to 16 kW

- Condensate pump included.
- Air retrun from the rear or below (optional).
- Optional motion sensor.
- Height: 240 mm.
- Electric box (can be moved, sizes 1.5 and 2 hp).
- Filter accessible from below or from the left or right side.

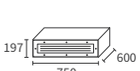
Ducted unit 200 Pa 11 to 16 kW

- Condensate lift pump included.
- Air retrun from the rear.
- Filter accessible from below or from the left or right side.

High-Pressure High-Capacity ducted unit 22 to 56 kW

- Up to 220 Pa available static pressure.
- Sizes 8, 10, 16 and 20 hp.

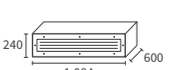
Indoor units



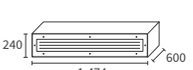
RPIL-0.4FSRE
RPIL-0.6FSRE
RPIL-0.8FSRE
RPIL-1.0FSRE
RPIL-1.5FSRE



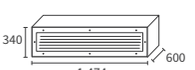
RPI-1.5FSRE
RPI-2.0FSRE



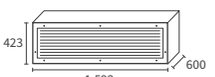
RPI-2.5FSRE
RPI-3.0FSRE



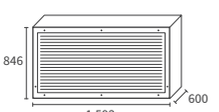
RPI-4.0FSRE
RPI-5.0FSRE
RPI-6.0FSRE



RPIH-4.0FSRE
RPIH-5.0FSRE
RPIH-6.0FSRE



RPI-8.0FSN3E(-f)
RPI-10.0FSN3E(-f)



RPI-16.0FSN3PE
RPI-20.0FSN3PE

Slim ducted unit, height 197mm (up to 100 Pa available pressure)

Indoor units	Unit	RPIL-0.4FSRE	RPIL-0.6FSRE	RPIL-0.8FSRE	RPIL-1.0FSRE	RPIL-1.5FSRE
Power (adjustable)	Hp	0.40	0.60	0.80	1.00	1.30 ← 1.50
Nominal Cooling capacity UTOPIA Prime & IVX	kW	not available	not available	2.00	2.50	3.60
Nominal Heating capacity UTOPIA Prime & IVX	kW	not available	not available	2.20	2.80	4.00
Nominal Cooling capacity SET FREE	kW	1.10	1.70	2.20	2.80	3.80 ← 4.00
Nominal Heating capacity SET FREE	kW	1.30	1.90	2.50	3.20	4.20 ← 4.80
Sound pressure in Cooling mode (L / M / H)[1][3]	dB(A)	22 / 23 / 24	23 / 25 / 27	23 / 25 / 28		25 / 28 / 30
Sound power	dB(A)	48	51	52		53
Airflow in Cooling mode (L / M / H) (SP02)[4]	m^3/h	300 / 330 / 360	330 / 390 / 438	342 / 390 / 462		390 / 474 / 528
Rated static pressure (min-max)	Pa	15 (0~100)		25 (0~100)		
Condensate pump	-	yes (can be removed to use a gravity drain kit)				
Max. elevation	mm	850				
Diameter of pipes (Liq / Gas)	inches	1/4 - 1/2				
Condensate outlet diameter (ext)	mm	32				
Dimensions (H x L x D)	mm	197 x 750 x 600				
Weight	kg	23				
Power supply	-	1~ 230V 50Hz				
Cable width (EN 60 335-1)[2]	mm^2	3 x 0.75				
Recommended fuse size	A	5				

Compact ducted unit (up to 150 Pa available pressure)

Indoor units	Unit	RPI-1.5FSRE	RPI-2.0FSRE	RPI-2.5FSRE	RPI-3.0FSRE	RPI-4.0FSRE	RPI-5.0FSRE	RPI-6.0FSRE
Power (adjustable)	Hp	1.30 ← 1.50	1.80 ← 2.00	2.30 ← 2.50	3.00	4.00	5.00	6.00
Nominal Cooling capacity UTOPIA Prime & IVX	kW	3.60	5.00	5.60	7.10	10.00	12.50	14.00
Nominal Heating capacity UTOPIA Prime & IVX	kW	4.00	5.60	6.30	8.00	11.20	14.00	16.00
Nominal Cooling capacity SET FREE	kW	3.80 ← 4.00	5.20 ← 5.60	6.70 ← 7.10	8.00	11.20	14.00	16.00
Nominal Heating capacity SET FREE	kW	4.20 ← 4.80	5.60 ← 6.30	7.50 ← 8.50	9.00	12.50	16.00	18.00
Sound pressure in Cooling mode (L / M / H)[1][3]	dB(A)	29 / 30 / 32	29 / 30 / 32	30 / 32 / 34	31 / 33 / 35	35 / 38 / 39	36 / 38 / 40	36 / 38 / 40
Sound power	dB(A)	55	58	57	59	62	64	64
Airflow in Cooling mode (L / M / H) (SP02)[4]	m^3/h	600 / 690 / 840	630 / 720 / 840	900 / 1020 / 1200	960 / 1140 / 1290	1680 / 2070 / 2160	1920 / 2100 / 2220	1950 / 2130 / 2250
Rated static pressure (min-max)	Pa	25 (0~150)			37 (0~150)		50 (0~150)	
Condensate pump	-	yes						
Max. elevation	mm	850						
Diameter of pipes (Liq / Gas)	inches	1/4 - 5/8		3/8 - 5/8				
Condensate outlet diameter (ext)	mm	32						
Dimensions (H x L x D)	mm	240 x 750 x 600		240 x 1084 x 600		240 x 1474 x 600		
Weight	kg	26		32		42		
Power supply	-	1~ 230V 50Hz						
Cable width (EN 60 335-1)[2]	mm^2	3 x 0.75						
Recommended fuse size	A	5						

High-Pressure ducted unit (up to 200 Pa available pressure)

Indoor units	Unit	RPIH-4.0FSRE	RPIH-5.0FSRE	RPIH-6.0FSRE
Power (adjustable)	Hp	4.00	5.00	6.00
Nominal Cooling capacity UTOPIA Prime & IVX	kW	10.00	12.50	14.00
Nominal Heating capacity UTOPIA Prime & IVX	kW	11.20	14.00	16.00
Nominal Cooling capacity SET FREE	kW	11.20	14.00	16.00
Nominal Heating capacity SET FREE	kW	12.50	16.00	18.00
Sound pressure in Cooling mode (L / M / H)[1][3]	dB(A)	35 / 38 / 39	36 / 38 / 40	36 / 38 / 40
Sound power	dB(A)	62	64	64
Airflow in Cooling mode (L / M / H) (SP00)[4]	m^3/h	1740 / 1890 / 2100	2160 / 2040 / 2160	1920 / 2040 / 2160
Rated static pressure (min-max)	Pa	155 (0~200)		
Condensate pump	-	yes		
Max. elevation	mm	850		
Diameter of pipes (Liq / Gas)	inches	3/8 - 5/8		
Condensate outlet diameter (ext)	mm	32		
Dimensions (H x L x D)	mm	340 x 1474 x 600		
Weight	kg	44		
Power supply	-	1~ 230V 50Hz		
Cable width (EN 60 335-1)[2]	mm^2	3 x 0.75		
Recommended fuse size	A	5		

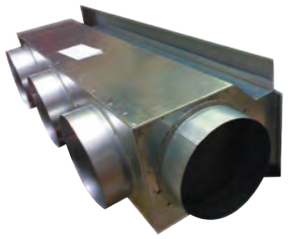
[1] Sound levels (pressure) are measured in an anechoic chamber at 1.50 m under the unit (without a ceiling under the unit), with an extraction duct at 1 m and discharge duct at 2 m.
[2] Data shown is for indication purposes only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility.
[3] Ultra high-speed access is possible with remote controls PC-ARFP1E (or PC-ARFG-E available second half of 2021) and PC-ARH1E.
[4] SP: external static pressure (defined with the optional function "C5" on the remote control: 00: standard, 01: external static high-pressure, 02: external static low-pressure).

High-Capacity ducted unit (up to 220 Pa available pressure) (sizes 16 and 20 hp: unique on the market)

Indoor units	Unit	High-pressure		High-power	
		RPI-8.0FSN3E	RPI-10.0FSN3E	RPI-16.0FSN3PE	RPI-20.0FSN3PE
Power (adjustable)	Hp	8.00	10.00	16.00	20.00
Nominal Cooling capacity Micro VRF IVX COMFORT	kW	20.00	25.00	40.00	50.00
Nominal Heating capacity Micro VRF IVX COMFORT	kW	22.40	28.00	44.80	56.00
Nominal Cooling capacity SET FREE	kW	22.40	28.00	45.00	56.00
Nominal Heating capacity SET FREE	kW	25.00	31.00	50.00	63.00
Sound pressure in Cooling mode (L / M / H) (1)(3)	dB(A)	51 / 54 / 54	52 / 55 / 55	53 / - / 56	54 / - / 57
Sound power	dB(A)	77	78	79	80
Airflow in Cooling mode (L/M/H)	m^3/h	3570 / 3960 / 3960	4056 / 4500 / 4500	7200 / - / 7920	8220 / - / 9000
Rated static pressure (min-max)	Pa	200 (180 - 220)		180 (220)	
Dehumidification	l/h	7.70	8.80	15.00	17.00
Condensate pump	-	no			
Diameter of pipes (Liq / Gas)	inches	3/8 - 3/4	3/8 - 7/8	2 x 3/8 - 3/4 (requires a E-162SN4)	2 x 3/8 - 7/8 (requires a E-242SN3)
Condensate outlet diameter (ext)	mm	25		2 x 25	
Dimensions (H x L x D)	mm	423 x 1592 x 600		846 x 1592 x 600	
Weight	kg	85	87	171	175
Power supply	-	1~ 230V 50Hz			
Cable width (EN 60 335-1)(2)	mm^2	3 x 2.50		2 x (3 x 2.50)	
Recommended fuse size	A	10		25	

(1) Sound pressure is measured under the following conditions: at 1.50 m below the unit (no ceiling under the unit), with an extraction duct at 1 m and a discharge duct at 2 m.
(2) Data shown is for indication purposes only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.
(3) High-speed access is possible with remote controls PC-ARFP1E and PC-ARH1E.

Plenums (stand-alone)



Type of Plenum	Number of outputs / diameter (mm)	Part number	Compatibility
Supply and return air	**2** / Ø 200	PL-RPIL-FSRE	RPIL-0.4~1.5FSRE
Supply and return air	**3** / Ø 200	PL-RPI1.5/2FSRE	RPI-1.5~2.0FSRE
Supply and return air	**5** / **3** / Ø 200	PL-RPI2.5/3FSRE	RPI-2.5~3.0FSRE
Supply and return air	**5** / **4** / Ø 200	PL-RPI4-6FSRE	RPI-4.0~6.0FSRE

You can have multiple contacts with the connector PCC-1A: progress report, error report, thermostat control, remote "Start/Stop".

Controls and compatible accessories (see the tab VRF TWIN Controls)



Simple wired controller

PC-ARH1E



Infrared controller

PC-AWR



Hard wired controller

PC-ARFP1E
(PC-ARFG-E available in 2022)



Motion sensor
All sizes of ducted units

SOR-MSK



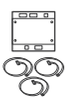
Remote sensor

THM-R2AE



Infrared receiver

PC-ALHZ1 (external)



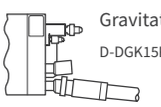
Multi-tenant card

PC-AMTB



Connectors

PCC-1A



Gravitational condensation unit connection kit

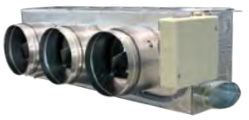
D-DGK15R



Kit air return from below

D-ICA15R → RPIL (100 Pa)
D-ICA20R → RPI 1.5 to 2.0 hp (150 Pa)
D-ICA30R → RPI 2.5 to 3.0 hp (150 Pa)
D-ICA60R → RPI 4.0 to 6.0 hp (150 Pa)

Compatibility table: airzone plenum with ducted units RPIL and RPI



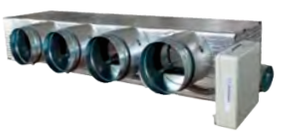
STANDARD

Height 300 mm, with fresh-air intake, air outlet 200 mm in diameter



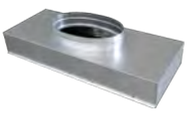
MEDIUM

Height 250 mm, without fresh-air intake, air outlet 200 mm in diameter



SLIM

Height 210 mm, with fresh-air intake, air outlet 150 mm in diameter



		Supply air plenum	2 air outlets	3 air outlets	4 air outlets	5 air outlets	6 air outlets	Return air plenum
RPIL-FSRE	1.0-1.5 (750 x 197 mm)	Slim	-	AZEZ6HITSL08L3	AZEZ6HITSL08L4	AZEZ6HITSL08L5	-	AZCEZHIPR08XS
		Medium	AZEZ6HITBS08XS2	AZEZ6HITBS08XS3	-	-	-	
RPI-FSRE	1.5-2.0 (750 x 240 mm)	Standard	AZEZ6HITST08S2	AZEZ6HITST08S3	AZEZ6HITST08S4	-	-	AZCEZHIPR08S
		Medium	AZEZ6HITBS08S2	AZEZ6HITBS08S3	AZEZ6HITBS08S4	-	-	
	2.5-3.0 (1084 x 240 mm)	Standard	-	AZEZ6HITST08M 3	AZEZ6HITST08M4	AZEZ6HITST08M5	AZEZ6HITST08M6	AZCEZHIPR08M
		Medium	-	AZEZ6HITBS08M 3	AZEZ6HITBS08M4	AZEZ6HITBS08M5	AZEZ6HITBS08M6	
	4.0-5.0-6.0 (1474 x 240 mm)	Standard	-	-	-	AZEZ6HITST08L5	AZEZ6HITST08L6	AZCEZHIPR08L
		Medium	-	-	-	AZEZ6HITBS08L5	AZEZ6HITBS08L6	

Connected and intuitive interfaces



Airzone Blueface Thermostat

Wired connection / 3.5” touchscreen: Configurable as a general thermostat or by zone. A number of features and settings, ideal for ultimate control of your entire system, for more efficient and responsible heating. End-to-end, intuitive interface. Eco-adapt and standby function for tangible energy saving. Control the temperature, mode, and fan speed. Weekly programming. Access to weather forecasts (with Airzone Cloud webserver login) to anticipate changes in temperature.



Airzone Think thermostat

Wired or wireless connection / 2.7” screen: Configurable as a general thermostat or by zone. Low-energy device that makes it easy to reduce energy costs. Stylish and intuitive interface. Control the temperature, mode, and fan speed. Access to weather forecasts (with Airzone Cloud webserver login) to anticipate changes in temperature.



Thermostat Airzone Lite

Wired or wireless connection: In systems with the Blueface thermostat, this solution is perfect for quick access to essential functions. Its modern and fun interface makes it easier to use, with colors indicating the mode and temperature of the area. Start/ Stop function. Control the setting temperature in increments of 1°C with a scope of ±3°C.



Webserver Airzone Cloud

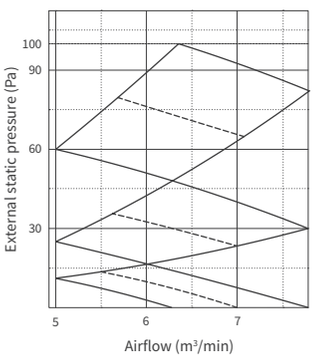
The Airzone Cloud app, compatible on your smartphone, tablet, and PC, offers complete remote control of the installation; anywhere, anytime. You can control multiple servers at once and up to 32 systems on a single webserver. All the features of your thermostats are combined on the cloud: Control the temperature, weekly programming, weather forecasts, login authorization…

AZCE6BLUEFACEB	AZCE6THINKCB	AZCE6LITECB	AZX6WSCLOUDDINC
-	AZCE6THINKRB	AZCE6LITERB	AZX6WSCLOUDDINR
AZX6CABLEBUS10	AZX6CABLEBUS10	AZX6CABLEBUS10	AZX6CABLEBUS10

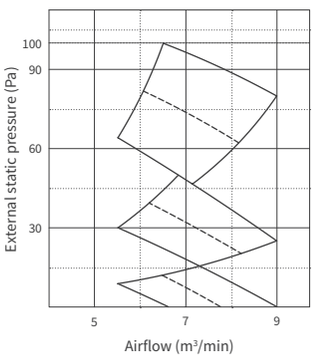
Static pressure curve

Ducted unit 100 Pa (RPIL-0.4~1.5FSRE)

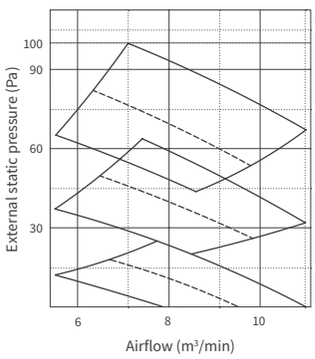
RPIL-0.4FSRE



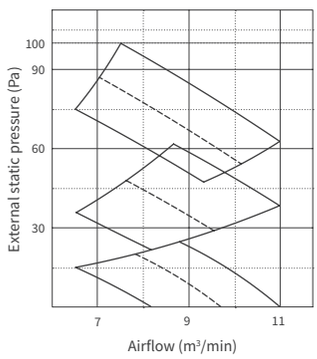
RPIL-0.6FSRE



RPIL-0.8FSRE

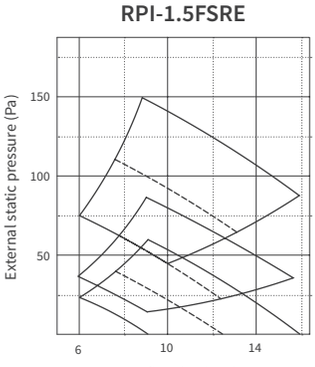


RPIL-1.5FSRE

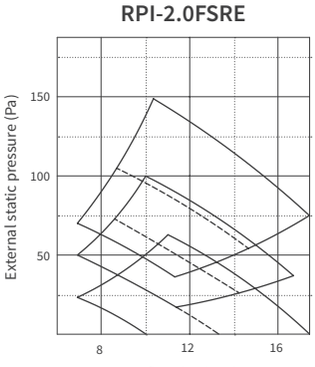


Ducted unit 150 Pa (RPI-1.5~6FSRE)

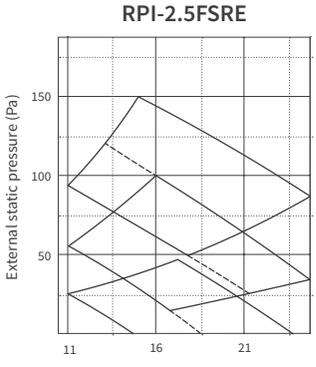
RPI-1.5FSRE



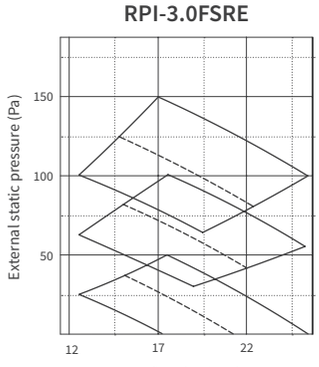
RPI-2.0FSRE



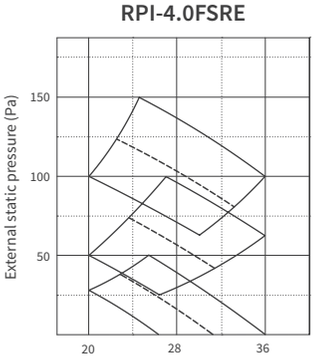
RPI-2.5FSRE



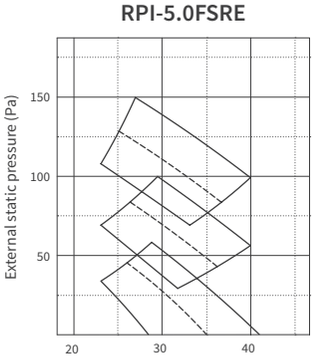
RPI-3.0FSRE



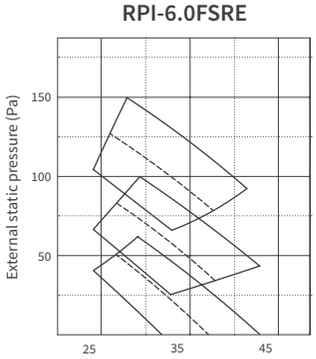
RPI-4.0FSRE



RPI-5.0FSRE

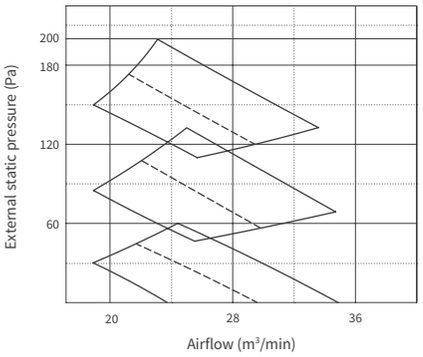


RPI-6.0FSRE

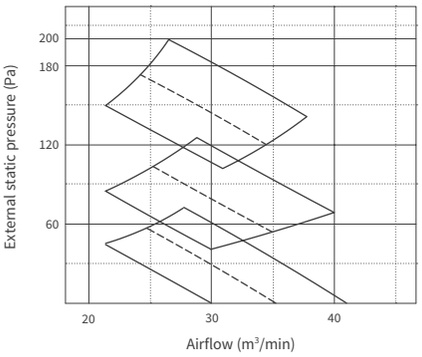


Ducted unit 200 Pa (RPIH-4~6FSRE)

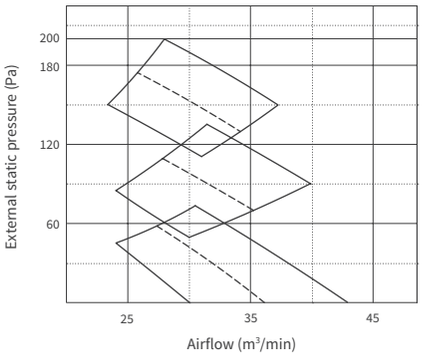
RPIH-4.0FSRE



RPIH-5.0FSRE

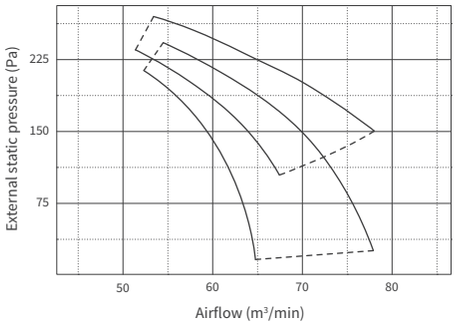


RPIH-6.0FSRE

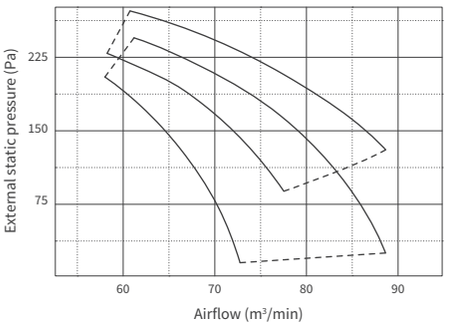


High-Capacity ducted unit

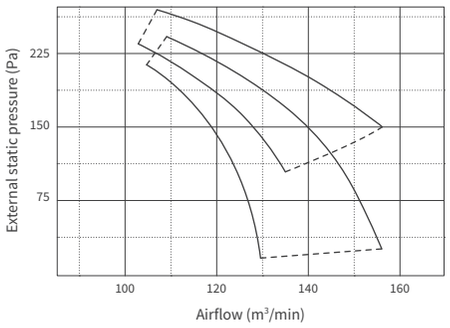
RPI-8.0FSN3E(-F)



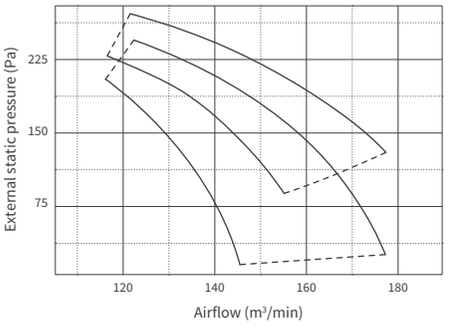
RPI-10.0FSN3E(-F)



RPI-16.0FSN3PE(-F)



RPI-20.0FSN3PE(-F)



Wall unit



One of the most extensive ranges on the market: 17 models

With models ranging from 0.4 hp to 4.0 hp, Hitachi offers one of the biggest ranges on the market, with a harmonized design across all models. You can also use the adjustable power settings to respond precisely to each project.

Easy and discreet integration

Our units are so compact and lightweight that you can easily install them discreetly above a doorway.
To help with maintenance work, the fan motor on the 2 hp to 4 hp models can be replaced without disassembling the exchanger.

Unrivaled comfort

The "GENTLE COOL" air off temperature setting, accessible on the wired remote control PC-ARFP1E, adjusts the min. air off temperature. In summer, cold air drafts are avoided as you can set the the air off temperature to the maximum setting.

Silent operation

0.4 to 1.5 hp units can be ordered without an expansion valve (version H) to keep the expansion valve apart from the unit (part no. EV-1.5N1 order separately) for even quieter comfort. As such, our units are ideal for hotel use.

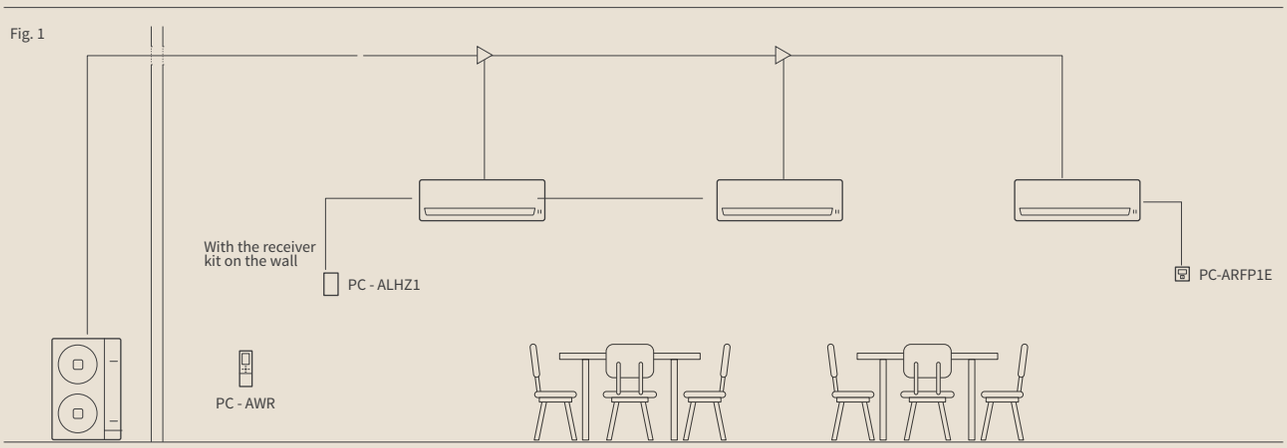
Central control

Our wall units are compatible with all types of remote control and feature an integrated infrared receiver as standard. Available as an option, with the PC-ALHZ1 infrared receiver you can operate multiple units on the same remote control. (Fig.1)

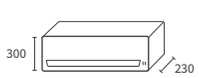
Higher airflow rate

Use the 4 fan speeds to adapt the airflow for comfort in every room.

Fig. 1

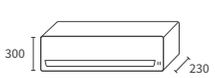


Indoor units

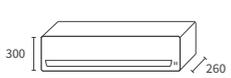


RPK- 0.4FSRM
RPK- 0.6FSRM
RPK- 0.8FSRM
RPK- 1.0FSRM

RPK- 0.4FSRHM
RPK- 0.6FSRHM
RPK- 0.8FSRHM
RPK- 1.0FSRHM



RPK- 1.5FSRM
RPK- 1.5FSRHM

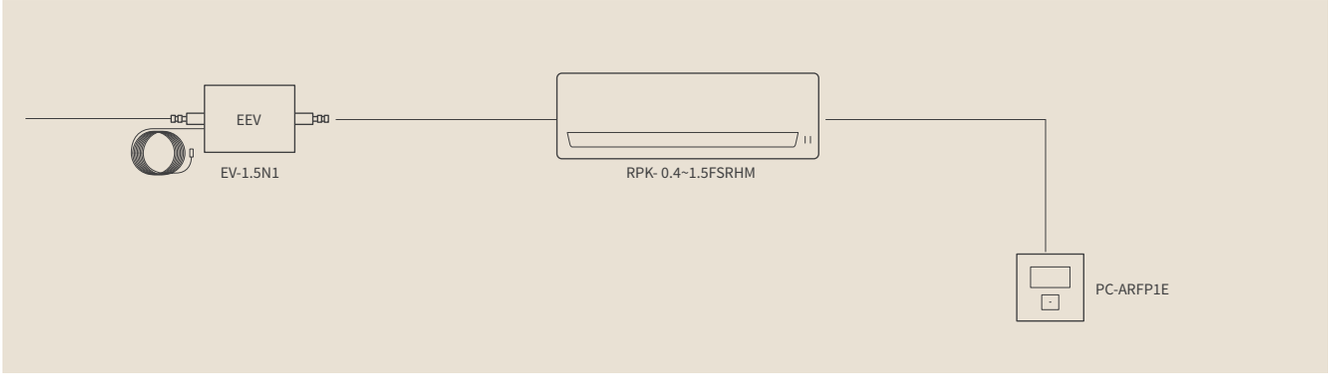


RPK-2.0FSRM
RPK-2.5FSRM
RPK-3.0FSRM
RPK-4.0FSRM

Wall unit

Indoor units	Unit	RPK-0.4FSR(H)M	RPK-0.6FSR(H)M	RPK-0.8FSR(H)M	RPK-1.0FSR(H)M	RPK-1.5FSR(H)M	RPK-2.0FSRM	RPK-2.5FSRM	RPK-3.0FSRM	RPK-4.0FSRM
Power (adjustable)	Hp	0.40	0.60	0.80	1.00 → 1.30	1.50	1.8 ← 2.00	2.30 ← 2.50	3.00	4.00
Nominal Cooling capacity UTOPIA Prime & IVX	kW	not available	not available	2.00	2.50	3.60	5.00	5.60	7.10	10.00
Nominal Heating capacity UTOPIA Prime & IVX	kW	not available	not available	2.20	2.80	4.00	5.60	6.30	8.00	11.20
Nominal Cooling capacity SET FREE	kW	1.10	1.70	2.20	2.80 → 3.80	4.00	5.20 ← 5.60	6.70 ← 7.10	8.00	11.20
Nominal Heating capacity SET FREE	kW	1.30	1.90	2.50	3.20 → 4.20	4.80	5.60 ← 6.30	7.50 ← 8.50	9.00	12.50
Sound pressure in Cooling mode (EL/L/M/H)[1][3]	dB(A)	29 / 30 / 31 / 32	29 / 31 / 32 / 35	30 / 32 / 35 / 39		33 / 36 / 40 / 46	31 / 34 / 37 / 40	35 / 38 / 42 / 45	35 / 40 / 44 / 47	39 / 44 / 48 / 51
Sound power	dB(A)	45-46-48-49		45-47-49-53		47-50-54-58	47-50-53-55	51-54-58-60	51-56-60-63	54-60-64-65
Airflow in Cooling mode (EL/L/M/H) [4]	m^3/h	360 / 402 / 438 / 450	360 / 420 / 450 / 480	390 / 420 / 480 / 600		450 / 540 / 660 / 840	570 / 660 / 780 / 870	720 / 840 / 990 / 1110	750 / 930 / 1050 / 1200	870 / 1050 / 1200 / 1380
Condensate pump included	-	No								
Diameter of pipes (Liq / Gas)	inches	1/4 / 1/2						3/8 / 5/8		
Condensate outlet diameter (ext)	mm	20								
Dimensions (H x L x D)	mm	300 x 790 x 230				300 x 900 x 230	300 x 1100 x 260			
Weight	kg	9	10			11	14.5	15		
Power supply	-	1~ 230V 50Hz								
Cable width (EN 60 335-1) [2]	mm^2	3 x 0.75								
Recommended fuse size	A	5								

[1] Sound pressure is measured under the following conditions: 1 m under the unit, 1 m from the discharge louvre.
[2] Data shown is for indication purposes only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.
[3] High-speed access is possible with remote controls PC-ARFP1E and PC-ARH1E.
[4] Very low speed is available in Thermo-off mode.



You can have multiple contacts with the connector PCC-1A: progress report, error report, thermostat control, remote "Start/Stop".

Controls and compatible accessories (see the tab VRF TWIN Controls)



Simple wired controller
PC-ARH1E



Infrared controller
PC-AWR



Hard wired controller
PC-ARFP1E
(PC-ARFG-E available in 2022)



Connectors
PCC-1A



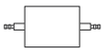
Remote sensor
THM-R2AE



Infrared receiver
PC-ALHZ1 (external)



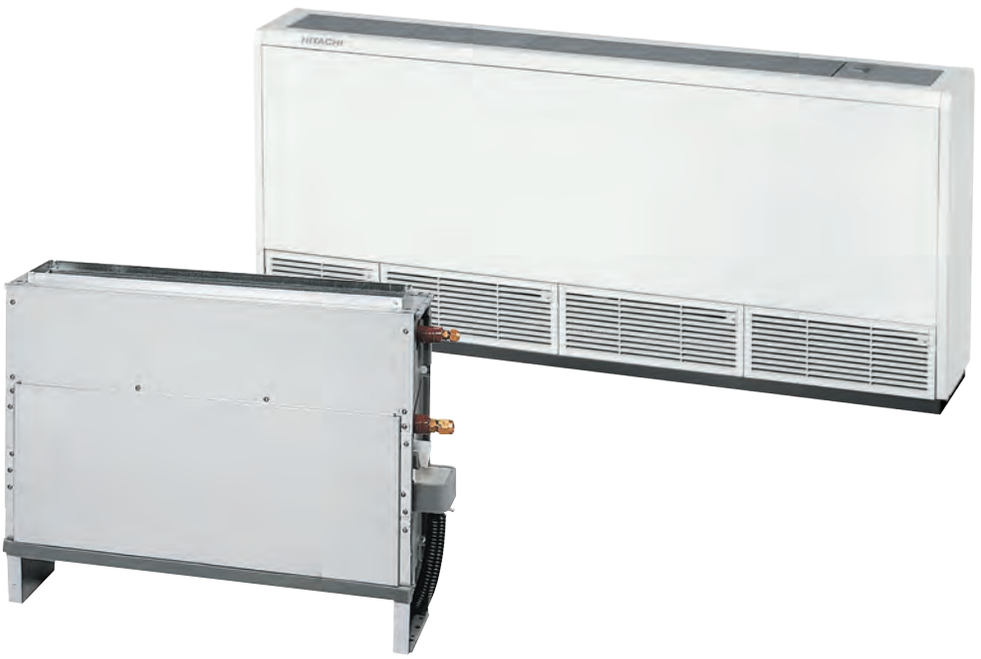
Multi-tenant card
PC-AMTB



External EEV
EV-1.5N1

Floor mounted

R410A REFRIGERANT · SYSTEM FREE · POWER SWITCH



Unrivaled comfort

The GENTLE COOL air off temperature setting, accessible on the wired remote control PC-ARF1E, adjusts the min. air off temperature. In summer, cold air drafts are avoided as you can set the air off temperature to the maximum setting.

Even greater flexibility

To suit any requirement, the console comes in an uncased version (horizontal or vertical blowing) as well as cased. You can also use the adjustable power settings to respond precisely to each project.

Compact design

Just 220 mm deep, uncased units can be installed anywhere on the wall, taking up very little floor space. The 630 mm height makes it an ideal solution for air-conditioning or heating a room.

Integrated remote control

For easier access, the remote control can be integrated into the console itself (Fig.1)

Adapted air circulation

On Hitachi uncased consoles, you can change the blowing direction to suit any need. (Fig.2)

Fig. 1

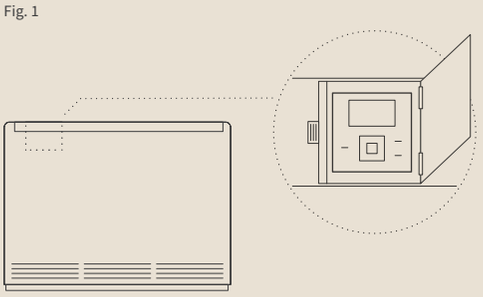
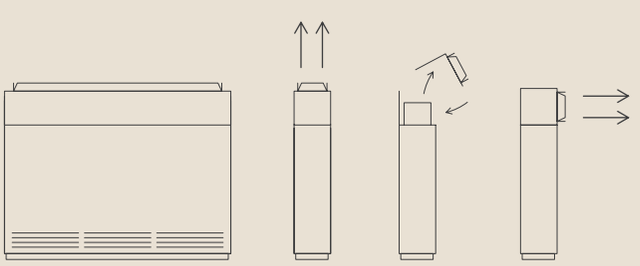
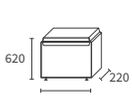


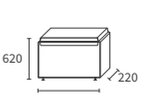
Fig. 2



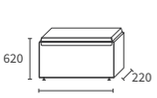
Indoor units



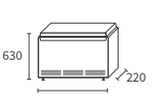
RPFI-1.0FSN2E



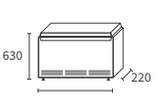
RPFI-1.5FSN2E



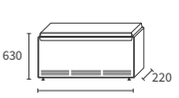
RPFI-2.0FSN2E
RPFI-2.5FSN2E



RPF-1.0FSN2E



RPF-1.5FSN2E



RPF-2.0FSN2E
RPF-2.5FSN2E

Floor mounted

Cased console	Unit	RPF-1.0FSN2E	RPF-1.5FSN2E	RPF-2.0FSN2E	RPF-2.5FSN2E
Power (adjustable)	Hp	0.80 ← 1.00	1.30 ← 1.50	1.80 ← 2.00	2.30 ← 2.50
Nominal Cooling capacity UTOPIA Prime & IVX	kW	2.50	3.60	5.00	5.60
Nominal Heating capacity UTOPIA Prime & IVX	kW	2.80	4.00	5.60	6.30
Nominal Cooling capacity SET FREE	kW	2.20 ← 2.80	3.80 ← 4.00	5.20 ← 5.60	6.70 ← 7.10
Nominal Heating capacity SET FREE	kW	2.50 ← 3.20	4.20 ← 4.80	5.60 ← 6.30	7.50 ← 8.50
Sound pressure in Cooling mode (L / M / H) [1][3]	dB(A)	29 / 32 / 35	31 / 35 / 38	32 / 36 / 39	34 / 38 / 42
Sound power	dB(A)	57		60	
Airflow in Cooling mode (L/M/H)	m^3/h	360 / 420 / 510	540 / 600 / 720	660 / 840 / 960	
Dehumidification	l/h	1.10	1.60	2.30	2.70
Diameter of pipes (Liq / Gas)	inches	1/4 - 1/2		1/4 - 5/8	3/8 - 5/8
Condensate outlet diameter (ext)	mm	18.50			
Dimensions (H x L x D)	mm	630 x 1045 x 220	630 x 1170 x 220	630 x 1420 x 220	
Weight	kg	25	28	33	34
Power supply	-	1~ 230V 50Hz			
Recommended fuse size	A	5			
Cable width (EN 60 335-1) [2]	mm^2	3 x 0.75			

Uncased console	Unit	RPFI-1.0FSN2E	RPFI-1.5FSN2E	RPFI-2.0FSN2E	RPFI-2.5FSN2E
Power (adjustable)	Hp	0.80 ← 1.00	1.30 ← 1.50	1.80 ← 2.00	2.30 ← 2.50
Nominal Cooling capacity UTOPIA Prime & IVX	kW	2.50	3.60	5.00	5.60
Nominal Heating capacity UTOPIA Prime & IVX	kW	2.80	4.00	5.60	6.30
Nominal Cooling capacity SET FREE	kW	2.20 ← 2.80	3.80 ← 4.00	5.20 ← 5.60	6.70 ← 7.10
Nominal Heating capacity SET FREE	kW	2.50 ← 3.20	4.20 ← 4.80	5.60 ← 6.30	7.50 ← 8.50
Sound pressure in Cooling mode (L / M / H) [1] [3]	dB(A)	29 / 32 / 35	31 / 35 / 38	32 / 36 / 39	34 / 38 / 42
Sound power	dB(A)	57		60	
Airflow in Cooling mode (L/M/H)	m^3/h	360 / 420 / 510	540 / 600 / 720	660 x 840 x 960	
Dehumidification	l/h	1.10		2.30	2.70
Diameter of pipes (Liq / Gas)	inches	1/4 - 1/2		1/4 - 5/8	3/8 x 5/8
Condensate outlet diameter (ext)	mm	18.50			
Dimensions (H x L x D)	mm	620 x 848 x 220	620 x 973 x 220	620 x 1223 x 220	
Weight	kg	19	23	27	28
Power supply	-	1~ 230V 50Hz			
Recommended fuse size	A	5			
Cable width (EN 60 335-1)[2]	mm^2	3 x 0.75			

[1] Sound levels (pressure) are measured in an anechoic chamber at 1 m in front of the unit and at 1 m from the floor.
[2] Data shown is for indication purposes only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility.
[3] High-speed access is possible with remote controls PC-ARFP1E and PC-ARH1E.

You can have multiple contacts with the connector PCC-1A: progress report, error report, thermostat control, remote "Start/Stop".

Controls and compatible accessories (see the tab VRF TWIN Controls)



Simple wired controller
PC-ARH1E



Infrared controller
PC-AWR



Hard wired controller
PC-ARFP1E
(PC-ARFG-E available second half of 2022)



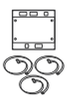
Connectors
PCC-1A



Remote sensor
THM-R2AE



Infrared receiver
PC-ALHZ1 (external)



Multi-tenant card
PC-AMTB

Ceiling unit

GENTLE COOL · SYSTEM FREE · POWER SWITCH · R410A REFRIGERANT · R32 REFRIGERANT · NEW



Energy-saving

The motion sensor (optional) automatically optimizes the level of comfort while limiting the energy consumption in rooms only occupied occasionally. It continuously analyzes thermal disparities as well as the presence of people in the room, adjusting its setting temperature (+/- 2°C), fan speed, and airflow direction to suit.

Wide operating ranges

4 fan speeds to suit every need, provide comfort, and make savings.

Flexible implementation

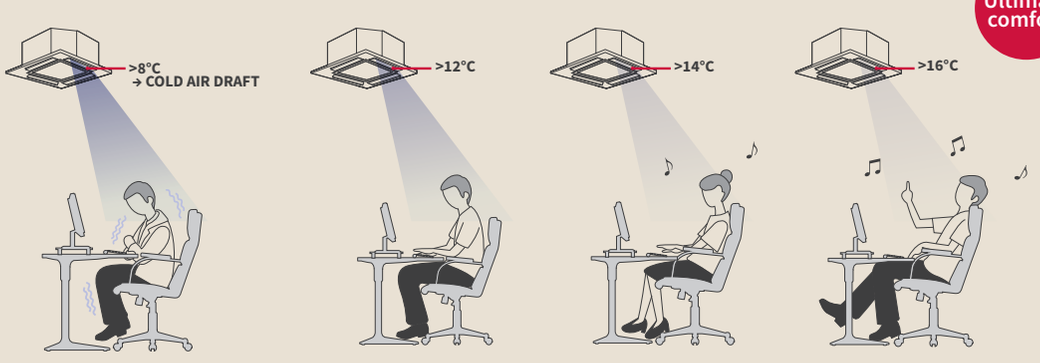
Condensing pumps are offered as an option to provide a high level of installation flexibility.

Unrivaled comfort

The GENTLE COOL air off temperature setting, accessible on the wired remote control PC-ARFP1E, adjusts the min. air off temperature. In summer, cold air drafts are avoided as you can set the air off temperature to the maximum setting.

Potential for discomfort — **GentleCool** → **No cold drafts**

Ultimate comfort

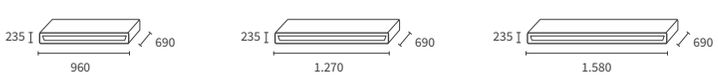


GentleCool: OFF | **GentleCool: LOW** | **GentleCool: MEDUIM** | **GentleCool: HIGH**



Min. Temp° control on the air off with the remote control PCARFP1E or the CSNET monitoring system

Indoor units



RPC-1.5FSR
RPC-2.0FSR

RPC-2.5FSR
RPC-3.0FSR

RPC-4.0FSR
RPC-5.0FSR
RPC-6.0FSR

Ceiling unit

Indoor units	Unit	RPC-1.5FSR	RPC-2.0FSR	RPC-2.5FSR	RPC-3.0FSR	RPC-4.0FSR	RPC-5.0FSR	RPC-6.0FSR
Power (adjustable)	Hp	1.30 ← 1.50	1.80 ← 2.00	2.30 ← 2.50	3.00	4.00	5.00	6.00
Nominal Cooling capacity UTOPIA Prime & IVX	kW	3.60	5.00	5.60	7.10	10.00	12.50	14.00
Nominal Heating capacity UTOPIA Prime & IVX	kW	4.00	5.60	6.30	8.00	11.20	14.00	16.00
Nominal Cooling capacity SET FREE	kW	3.80 ← 4.00	5.20 ← 5.60	6.70 ← 7.10	8.00	11.20	14.00	16.00
Nominal Heating capacity SET FREE	kW	4.20 ← 4.80	5.60 ← 6.30	7.50 ← 8.50	9.00	12.50	16.00	18.00
Sound pressure in Cooling mode (EL/L/M/H) [1][3]	dB(A)	28 / 31 / 35 / 37	28 / 31 / 35 / 38		29 / 33 / 37 / 40	32 / 37 / 42 / 44	35 / 41 / 45 / 48	36 / 42 / 47 / 49
Sound power	dB(A)	53	54	54	56	60	64	65
Airflow in Cooling mode (EL/L/M/H) [4]	m^3/h	540 / 660 / 780 / 900		690 / 840 / 990 / 1140	750 / 930 / 1110 / 1260	1020 / 1320 / 1590 / 1800	1200 / 1530 / 1860 / 2100	1260 / 1620 / 1950 / 2220
Condensate pump	-	No (optional accessory)						
Max. elevation	mm	600						
Diameter of pipes (Liq / Gas)	inches	1/4 - 1/2	1/4 - 5/8	3/8 - 5/8				
Condensate outlet diameter (ext)	mm	32						
Dimensions (H x L x D)	mm	235 x 960 x 690		235 x 1270 x 690		235 x 1580 x 690		
Weight	kg	26	27	35		41		
Power supply	-	1~ 230V 50Hz						
Recommended fuse size	A	5						
Cable width (EN 60 335-1) [2]	mm^2	3 x 0.75						

[1] Sound levels (pressure) are measured in an anechoic chamber at 1 m under the unit, 1 m from the air louvre.
[2] Data shown is for indication purposes only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility.
[3] High-speed access is possible with remote controls PC-ARFP1E and PC-ARH1E.
[4] Very low speed is available in Thermo-off mode.

You can have multiple contacts with the connector PCC-1A: progress report, error report, thermostat control, remote "Start/Stop".

Controls and compatible accessories (see the tab VRF TWIN Controls)



Simple wired controller

PC-ARH1E



Infrared controller

PC-AWR



Hard wired controller

PC-ARFP1E
(PC-ARFG-E available in 2022)



Remote sensor

THM-R2AE



Infrared receiver

PC-ALHP1 (integrated) / PC-ALHZ1 (external)



Multi-tenant card

PC-AMTB



Motion sensor

SOR-NEP



Connectors

PCC-1A



Condensate drainage pump

DUPC-63K1 (extraction pump RPC-1.5FSR)
DUPC-71K1 (extraction pump RPC-2.0FSR)
DUPC-160K1 (extraction pump RPC-(2.5-6.0)FSR)

Hydro Free Low-Temperature

Heating mode only



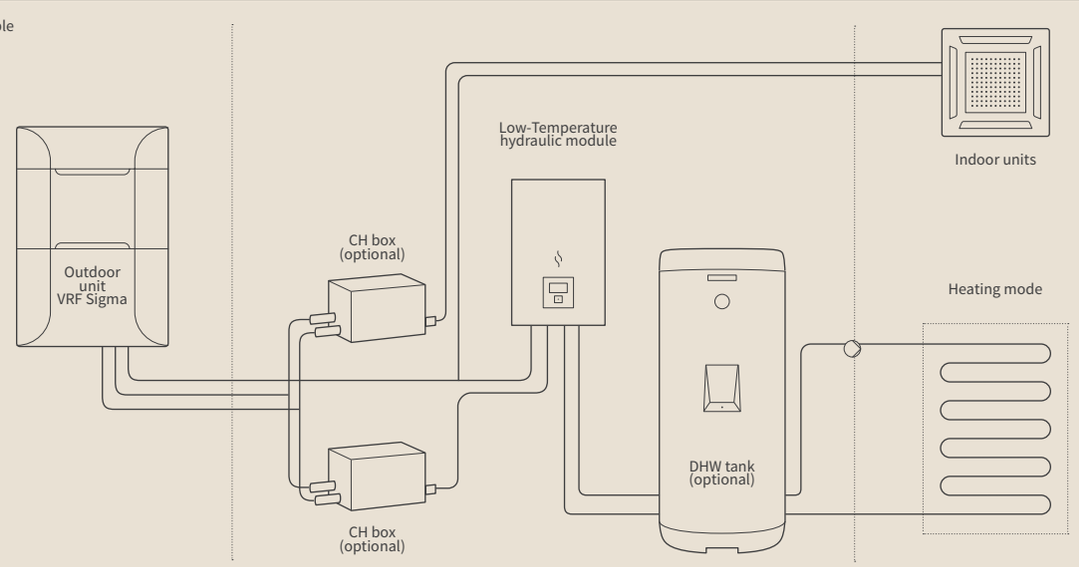
Heating applications

The Hydro Free module (low temperature, 45°C) is compatible with underfloor heating and fan coil units. This solution ensures maximum thermal comfort with the DX/hydraulic combined solution.
This compact and ultra-silent module offers the most comfort for renovation projects.

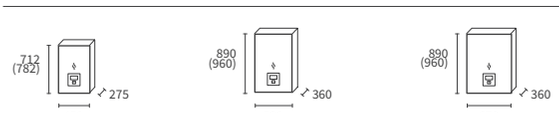
Compactness

A single solution: the VRF installation is made even easier with the Plug-Play system. The module has all the necessary equipment as standard: pump, filter, expansion tank, purges, manometer ...

Setup example



Indoor units



RWLT-3.0VN1E **RWLT-5.0VN1E** **RWLT-10.0VN1E**

Compatible with outdoor units SET FREE SIGMA: RAS-FSXNSE, RAS-FSXNPE and SET FREE Mini L (8/10/12hp).

Hydro Free Low-Temperature

Indoor units		Unit	RWLT-3.0VN1E	RWLT-5.0VN1E	RWLT-10.0VN1E
Rated power Heating (7°C outside / 35°C water)		kW	9	16	27
Heating capacity (-7°C outside / 35°C water)		kW	5.5	11.5	17.7
Heating capacity (-7°C outside / 45°C water)		kW	5.2	11.1	15.61
Sound power		dB(A)	37	39	47
Net weight		kg	35	50	62
Unit dimensions	Height (with connections)	mm	712 (782)	890 (960)	890 (960)
	Width	mm	450	520	670
	Depth	mm	275	360	360
Water flow	Nominal	m^3/h	1.5	2.7	4.7
Min. system water capacity		L	100	150	180
Power supply		-	1~ 230V 50Hz		
Max. consumption		kW	0.05	0.08	0.14
Refrigeration connection type		-	Flare nut	Flare nut	Liq: Flare nut - Gas: Brazed
Diameter of pipes (Liq - Gas)		inches	3/8" - 5/8"	3/8" - 5/8"	3/8" - 7/8"
Hydraulic connections (male/male valves supplied)		inches	1"	1 - 1/4"	1 - 1/4"
Hydrofree connection rate		-	0 ~ 100%		
Min. overall index of DX* units		-	50%		
General connection rate of Hydrofree + DX units	2-pipe VRF*	-	50% ~ 130%		
	3-pipe VRF*(2)	-	RAS-FSXNSE: 50% ~ 150%		
		-	RAS-FSXNPE: 50% ~ 200%		
Max. number of indoor units with Hydrofree installed (1)		-	38		
Temperature range of water outlet in heating mode		-	20°C ~ 45°C		

* Important: simultaneous operation can never be higher than 100% in heat pump mode.
Simultaneous operation in the same mode can never exceed 100% for a VRF system in heat recovery mode.
(1) The maximum number of indoor units is the recommended quantity of indoor units for every size of outdoor unit. For more information, please refer to the technical catalog of the outdoor unit.
(2) See Section 9.5.2.2 "Function of DIP switches and dial switches" in the technical catalog for more information on Pin 3 of the DSW8 with a connection rate of > 180%.

You can have multiple contacts with the connector PCC-1A: progress report, error report, thermostat control, remote "Start/Stop".

Controls and compatible accessories (see page 48)



ON/OFF wireless thermostat

ATW-RTU-04



Controller enclosure

ATWFCP-01



Temperature sensors

ATW-2OS-02
ATW-ITS-01
ATW-WTS-02Y



Hydro Free High-Temperature

Heating mode only



R134A REFRIGERANT · R410A REFRIGERANT · SYSTEM FREE · 80°

For a variety of applications

- High-temperature heating: combined with the VRF Sigma or SET FREE Mini 2/3-pipe.
- Constant DHW production: combined with the VRF Sigma or 3-pipe SET FREE Mini.
- Timed DHW production: combined with the VRF Sigma or 3-pipe SET FREE Mini.

The Hydro Free high-temperature system is ideal for high-temperature hot water needs for renovation projects, as heat is recovered via the CH box on indoor units operating in coooling mode.

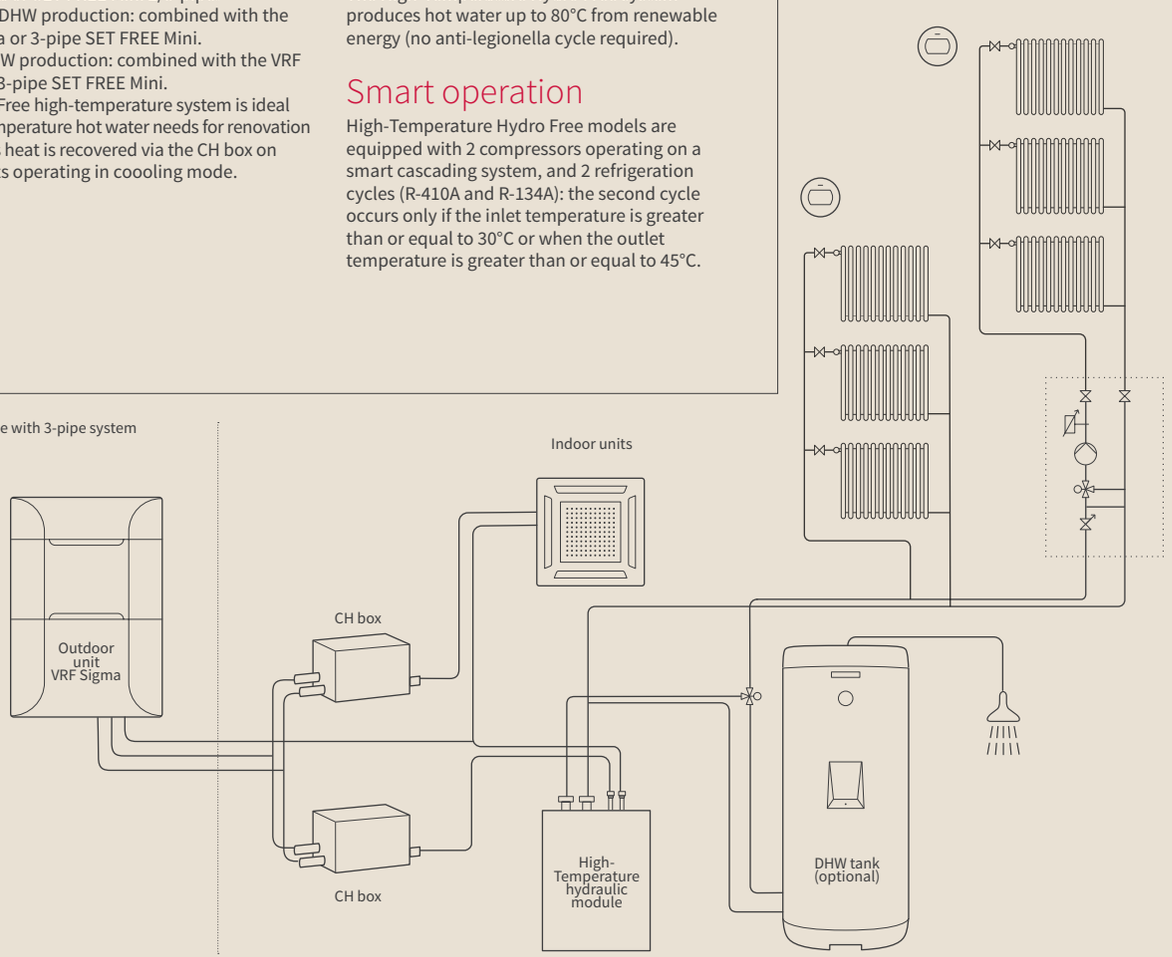
2-in-1 system

A single unit to meet 2 needs: **heating and DHW**. The High-Temperature Hydro Free system produces hot water up to 80°C from renewable energy (no anti-legionella cycle required).

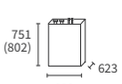
Smart operation

High-Temperature Hydro Free models are equipped with 2 compressors operating on a smart cascading system, and 2 refrigeration cycles (R-410A and R-134A): the second cycle occurs only if the inlet temperature is greater than or equal to 30°C or when the outlet temperature is greater than or equal to 45°C.

Setup example with 3-pipe system



Indoor units



RWHT-5.0VNF1E

Hydro Free High-Temperature

Indoor units		Unit	RWHT-5.0VNF1E
Rated power Heating (7°C outside / 35°C water)		kW	16
Heating capacity (-7°C outside / 65°C water)		kW	13.9
Heating capacity (-7°C outside / 80°C water)		kW	12.4
Sound power		dB(A)	57
Net weight		kg	129
Unit dimensions	Height (with connections)	mm	751(802)
	Width	mm	600
	Depth	mm	623
Water flow	Nominal	m^3/h	2.8
Min. system water capacity		L	80
Power supply		-	1~ 230V 50Hz
Max. consumption		kW	6.23
Refrigeration connection type		-	Flare nut
Diameter of pipes (Liq - Gas)		inches	3/8" - 5/8"
Hydraulic connections (male/male valves supplied)		inches	1-1/4" - 1-1/4"
Refrigerant		-	R134A
Compressor		-	Scroll
Hydro free connection rate		-	0 ~ 100%
Total ratio of DX when installed with Hydro free*		-	50% ~ 130%
Total connection rate Hydrofree + DX	2-pipe* VRF	-	50% ~ 130%
	3-pipe* VRF	-	RAS-FSXNSE: 50% ~ 150%
		-	RAS-FSXNPE: 50% ~ 200%
Max. number of indoor units with HM installed		-	38
Max. temperature range of water outlet		-	25°C ~ 80°C
Remote control		-	PC-ARFWE (mounted locally)

* Important: simultaneous operation can never be higher than 100% in heat pump mode.
Simultaneous operation in the same mode can never exceed 100% for a heat recovery system.
(1 *) The maximum number of indoor units is the recommended quantity of indoor units for every size of outdoor unit. For more information, please refer to the technical catalog of the outdoor unit.
(* 2) See Section "9.5.2.2 Function of DIP switches and dial switches" for more information on Pin 3 of the DSW8 with a connection rate of > 180%.

You can have multiple contacts with the PCC-1A connector: progress report, error report, thermostat control, remote "Start/Stop".

Controls and compatible accessories (see page 60)



Controller

PC-ARFWE



ON/OFF wireless thermostat

ATW-RTU-04

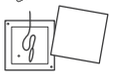




Temperature sensors

ATW-2OS-02
ATW-ITS-01
ATW-WTS-02Y





Hitachi wants to bring more and more comfort to its customers. The user interface is key to that objective. This extensive range of controls is perfect for the needs of anything from small to large public sector projects. It offers more features than any other range on the market, in unique versions as standard. Installation is quick and easy.



Managing the systems Utopia Prime, IVX, and VRF





Selection guide
Central controls

		airCloud Pro	PSC-A32MN	PSC-A64GT	CSNET Lite	CSNET Manager 2
Technical data of the gateway or interface	Indoor unit per interface	64 indoor units	32 remote control units 160 indoor units	64 remote control units 160 indoor units	64 indoor units	64 indoor units
	Outdoor unit per interface	16	32	64	64	64
	Interface per H-Link	1	8	8	1	1
	Max. amount of IDU per user interface	Unlimited (with multiple interfaces)	160	160	64	1024
	Cloud access	●	-	-	-	-
	Web application	●	-	-	●	●
	Mobile app	●	-	-	-	-
Connectivity	Standard connectivity	Ethernet	-	-	Ethernet	Ethernet
	4G connectivity	Option	-	-	-	-
	Interface updated remotely online	●	-	-	●	●
System access	Main access	Cloud	Local	Local	Local	Local
	Local setup access: can be used to control units in a backup solution if access to the server is no longer available	● limited features	●	●	●	●
	Remote access	●	-	-	●	●
	Type pf server	Cloud	-	-	Local web server	Local web server
	Internet connection mandatory	●	-	-	-	-
User and site management	Multi-user management	●	-	-	●	●
	User accounts with limited access to indoor units / functions	-	-	-	●	●
	Multi-site management	●	-	-	-	-
Basic functions	Basic indoor unit control	●	●	●	●	●
	Installation dashboard	●	-	-	●	●
	Weekly programming	●	-	-	-	-
	Annual programming	-	-	-	●	●
	Reset filter sign	●	●	●	-	-
	Alarm log	●	●	●	●	●
Advanced features	Min./max. setpoint temperature	-	●	-	●	●
	Outdoor unit power use setback (manual, contact, or programmable)	-	●	-	●	●
	Cumulative operating time	●	●	●	-	-
	System status (running data for outdoor unit and indoor unit)	●	-	-	●	●
	Data archive	-	-	-	●	●
	Order log & direct data	-	-	-	●	●
	Electrical consumption readings for Hitachi indoor unit	●	-	-	●	●
	Consumption readings from third-party watt meters	-	-	-	●	●
	Interlock	-	-	-	●	●
	Comfort features (Gentle Cool, heat draft (winter comfort) SetBack (reduced heating/Cooling mode))	-	-	-	●	●
	Alarm notifications	Expected in 2021	-	-	●	●
	Local server management	-	-	-	●	●
	Smart control and advanced maintenance	Expected in 2021	-	-	-	-
BMS connection	Input/output switches	-	●	●	●	●
	Tenant billing	Expected in 2021	-	-	●	●
	BMS connection	Expected in 2021	-	-	●	●

Selection guide to controls

Specific remote controls

Hard wired

PC-ARFP1E



Intuitive interface.
Manage 1 to 16 indoor units as masters and/or slaves.
Built-in temperature sensor.
Adjust optional settings.

New features
- To optimize energy consumption: ECO button, energy consumption display.
- For more comfort: setpoint adjustable to -/-0.5°C, GENTLE COOL function, frost protection function, night setback for outdoor unit.
- For more flexibility: new Master/Slave function which allows multiple indoor units to have the mode changed and be set by one remote control.

Ideal for maximum flexibility in all commercial applications.

Simplified wired

PC-ARH1E



Manage 1 to 16 indoor units as masters and/or slaves.
Simplified access to essential functions.
Adjust optional settings.

New features
- For more comfort: setpoint adjustable to +/-0.5°C, frost protection function.

Ideal for hotels, shops, when simplicity is key.

Infrared

PC-AWR



Manage 1 to 16 indoor units as masters and/or slaves.
Simplified access to key functions.
Infrared receiver function.

IR receiver	Compatibility with indoor units	
Include with the unit	Wall units	RPK-FSRM / RPK- FSRHM
PC-ALHC1 PC-ALH3 PC-ALHD1	4-way 600x600 cassette unit 4-way 800x800 cassette unit 2-way cassette unit	RCIM-FSRE RCI-FSR RCD-FSR
PC-ALHZF1 (external)	Ducted units Consoles	RPI / RPIM / PPF / RPFI / RCI RCIM / RCD / RPK / RPC
PC-ALHP1	Ceiling units	RPC

Ideal for renovations.

Centralised controls

Touch screen controls

PSC-A32MN
PSC-A64GT

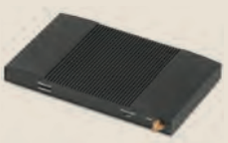


Manage up to 160 indoor units:
- **PSC-A32MN** > up to 32 groups of 16 indoor units, max. 160.
- **PSC-A64GT** > up to 64 groups of 16 indoor unit, max. 160. Up to 8 touch controllers per H-Link bus.

5" (PSC-A32MN) and 8.5" (PSC-A64GT) color touchscreen.
Up to 100 stored alarms.
Available contacts: start/stop, fault report, function report.
Demand control possible from external contact to reduce capacity.
In the case of using PSC-6RAD, max. 16 units allowed.

Ideal for monitoring small and medium-sized systems.

Building management systems

	CSNET Manager 2		CSNET Lite	airCloud PRO
				
Range	with screen	without screen (web)	web	web
User interface	10” or 15” high-resolution touchscreen CSNET Manager 2T10 or CSNET Manager 2T15	Interface without screen, access data on the PC, tablet or smartphone on all CSNET, 2T10, 2T15 (as well as the screen) and on the 2SL (model without screen)	PC, tablet, smartphone	PC, tablet, smartphone + mobile app / web app
H-Link interface	HC-A64NET		CSNET Lite	HC-IOTGW
Compatibility	H-Link units: - VRF & IVX Prime - Hydrofree - YUTAKI - Utopia Prime RAC units with adapters:			Main HLINK units: - VRF / IVX - RAC units with adapters (some limitations)
Functions	- Version 2.0 of the CSNET software (managing the Yutaki, server room function, pulse meters on the CSNET Lite, electricity and water metering for third-party systems, etc.) - VRF + air/water heat pump unit control (H-Link systems) - Multi-tenant access with specific rights/privileges for different functions or indoor unit control - Advanced control functions (Comfort, Interlock...) - Multi-tenant installations, flexibility for office applications - Energy metering for VRF units – third-party systems - Use of dry input/output contacts on indoor units or CSNET Lite - Connection to the BMS system (Modbus, BACnet, or KNX)		- Same features as CSNET Manager, applied to small or medium-sized systems - Manage up to 64 indoor units	- Monitor units VRF, IVX, and Utopia (HLINK unit) - Simple unit control with Web or mobile applications - Alarm notifications and alarm log available for remote maintenance - Perfect solution for small public applications and businesses needing basic control functions
Applications	Medium and large-size systems		Small and medium-size systems	Small and large-size systems

BMS interfaces

MODBUS interface

HC-A16MB
HC-A64MB



- Up to 16 / 64 indoor units per interface.
- Optional function management, view outdoor unit settings.

KNX interface

HI-AC-KNX-16
HI-AC-KNX-64



- up to 16 / 64 indoor units par interface.
-Fast integration: KNX-certified.
-Easy maintenance: USB port available, function and communication LEDs.
- KNX interfaces compatible with CSNET Manager.

BACNET interface

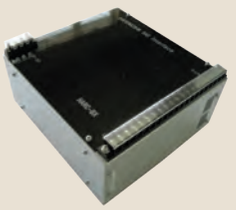
HI-AC-BAC-16
HI-AC-BAC-64



- Up to 16 / 64 indoor units per interface.
- Fast integration: BACnet-certified, direct H-Link communication – BACnet.
- Easy maintenance: USB port available, function and communication LEDs.
- BACNET interface compatible with CSNET Manager.

LON interface

HARC-BX E(A)
HARC-BX-E(B)



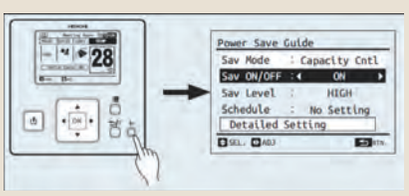
-Up to 32 (version E(B)) / 64 (version E(A)) indoor units per interface

Selection guide for Individual remote controls

		Advanced wired controller PC-ARFP1E
Selection	Max. number of indoor units per remote control	1 to 16
	Type of master/slave connection	Non-polarized bus
Main functions	Start/Stop	●
	Mode selection	●
	Auto Heating/Cooling mode	● (best used with 3-pipe VRFs)
	Dehumidification mode	●
	Set point selection	● (19°C to 30°C in Cooling mode / 17°C to 30°C in Heating mode)
	Adjust set point by +/-0.5°C	●
	Adjusting the fan speed	● (up to 5 according to the indoor unit type)
	Louvre control	●
	Individual louvre control	●
	Weekly timer	● (Up to 5 daily programs)
	Daily timer	●
	Holiday mode	-
	ECO mode	●
	Auto-restart after a power outage	●
	Built-in temperature sensor	●
Advanced management features	Lock function mode	●
	Lock the setpoint temperature ranges	●
	Lock the remote control buttons with the exception of Start/Stop	●
	Stop the fan in Thermo OFF Heating mode	●
	Stop the fan in Thermo OFF Cooling mode	●
	Thermistor selection (rcs, return air, average)	●
	Night set back (outdoor unit at lower noise level)	●
	Temperature set back: in Heating mode or in Cooling mode	●
	Gentle Cool (summer comfort): limit the air off Temp° in Cooling mode	●
	Auto Boost: rapid rise in temperature at startup	●
	Manage the motion sensor	●
	Adjust the temperature differential in Heating mode	●
	Show ambient room temperature	●
	Show outside temperature	●
	View the estimated energy consumption of the outdoor unit	●
	Demand control (auto or by zone)	●
Advanced maintenance features	Error code log	● (max. 30)
	After-sales contact details	●
	Information: defrost in progress	●
	Information: filter needs cleaning	●
	Self-test indoor unit and remote control electronic boards	●
	Check mode (view system parameters)	●
	Test Run mode	●
	Setting optional functions	●

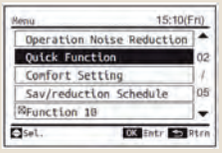
ECO mode

Easy to use, this key takes you straight to “Energy Saving” functions.
You can access the following options:
- Activation / Deactivation
- 3 energy-saving levels: HIGH> MED> LOW applied continuously or following a weekly schedule.



Simplified wired control PC-ARH1E	Infrared PC-AWR
1 to 16	1 to 16
Non-polarized bus	Non-polarized bus
●	●
●	●
● (best used with VRF 3 pipes)	● (best used with VRF 3 pipes)
●	●
● (19°C to 30°C in Cooling mode / 17°C to 30°C in Heating mode)	● (19°C to 30°C in Cooling mode / 17°C to 30°C in Heating mode)
●	-
● (up to 5 according to the indoor unit type)	● (up to 5 according to the indoor unit type)
●	●
-	-
-	-
-	● (daily)
-	-
-	-
●	-
●	-
●	-
●	-
●	-
●	-
●	-
●	-
-	-
●	-
-	-
-	-
-	-
●	-
-	-
-	-
-	-
-	-
-	-
-	-
●	-
-	-
-	-
-	-
-	-
●	-

Simple functions to customize your comfort: GENTLE COOL and Auto Boost



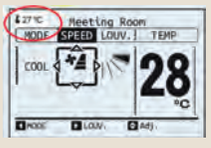
When you quickly need to reach a room's set temperature, select Auto Boost.

When you want to ensure more comfort by avoiding Cold drafts in summer, select the Comfort function called GENTLE COOL and customize your comfort: HIGH>MED >LOW.

Setpoint adjustable by +/- 0.5°C

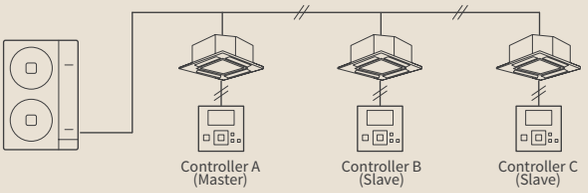


Show outside or room temperature



Define the master remote control to make the changeover even easier

New feature accessible with remote control PC-ARFP1E: change the mode from any 'master' remote control.



Selection guide
Centralised controls
Touchscreen or web based

Suitable for different sized projects allowing for faster monitoring, setup, and maintenance.

PSC-A32MN



Manage up to 32 groups of 16 indoor units, max. 160.
5" color touchscreen.

PSC-A64GT

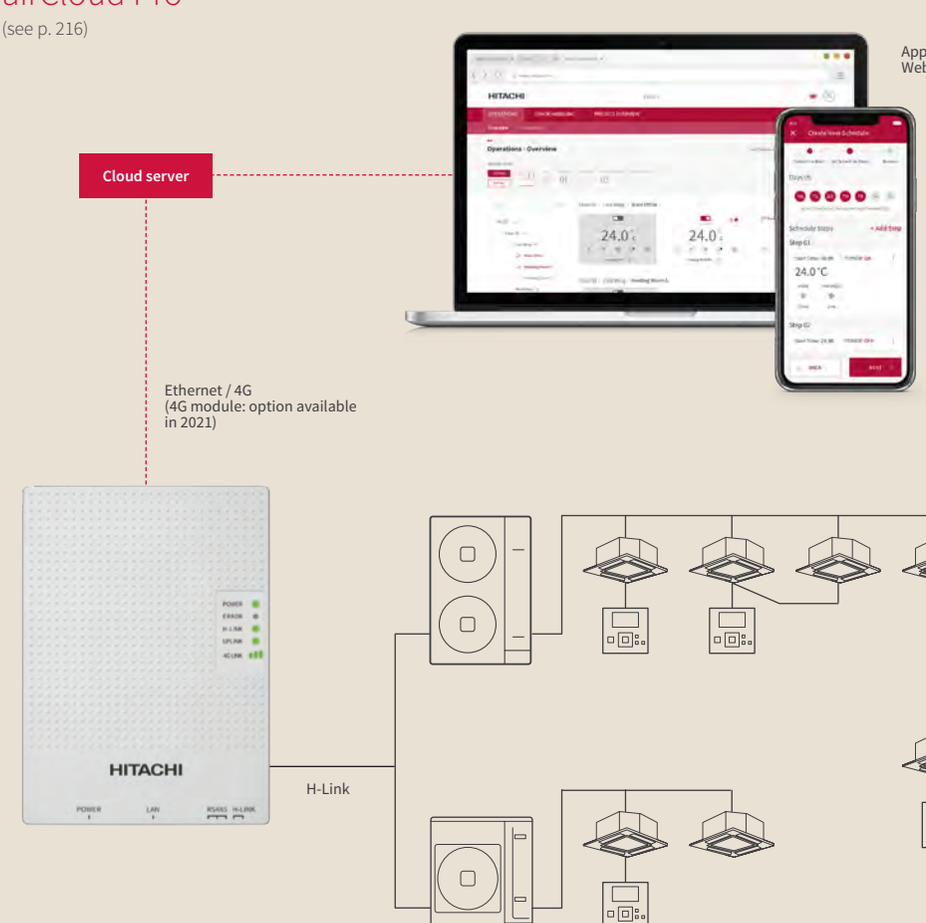


Manage up to 64 groups of 16 indoor units, max. 160.
8.5" color touchscreen.

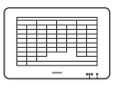
airCloud Pro

(see p. 216)

NEW



Connect up to 64 indoor units and 16 outdoor units
Compatible with H-Link II

		Centralised, touchscreen PSC-A32MN	Centralised, touchscreen PSC-A64GT
			
Selection		Manage up to 32 units of 16 indoor units, max. 160.	Manage up to 64 units of 16 indoor units, max. 160.
		5” color touchscreen	8.5” color touchscreen
		Up to 8 centralized controllers per H-Link bus	Up to 8 centralized controllers per H-Link bus
Functions Key functions	Access levels	2 (user, professional)	
	Define groups (set of indoor units connected on the same remote control)	●	
	Define blocks (sets of groups)	●	
	Mode selection	● by indoor unit / unit or block	
	Dehumidification mode	●	
	Set point selection	● by indoor unit / unit or block	
	Adjust set point by +/-0.5°C	-	
	Adjusting the fan speed	● by indoor unit / unit or block	
	Louvre control	● by indoor unit / unit or block	
	Individual louvre control	-	
	Weekly timer	● (Up to 10 daily programs)	
	Daily timer	-	
	Holiday mode	-	
	Filter indication (light on according to timer)	● by indoor unit	
	ECO mode	-	
Advanced management functions	Lock remote control apart form the Start/Stop button	● by indoor unit / unit or block	
	Limit and lock setpoint ranges (in Heating mode / in Cooling mode)	● by indoor unit / unit or block – on PSC-A32MN only	
	Night setback (outdoor unit at lower noise level)	-	
	Temperature setback	-	
	GENTLE COOL function (summer comfort)	-	
	Adjust the temperature differential in Heating mode	-	
	Auto Heating/Cooling mode	● by indoor unit / unit or block	
	View energy consumption	-	
	View operating hours	● by indoor unit/ unit or block	
	Demand control	● (reduce the electical consumption of the outdoor unit following a weekly schedule or using an external signal (contact on the central controller))	
Advanced maintenance features	Error code log	● (up to 100: show error code, date and time of the failure, unit(s) affected	
	After-sales contact details	●	
	Reset Filter LED	● by indoor unit / unit or block	
	Set optional functions (installer menu)	●	

airCloud Pro

NEW

You're in control

IoT technology

24/7 control at your fingertips, via your smartphone app or web

Intuitive simplicity

airCloud Pro is designed to make it easier for you. This open-access mobile app makes it easier than ever to manage your air-conditioning systems.

Control from anywhere

Enjoy remote access from your smartphone or PC. airCloud Pro lets you remotely control an unlimited number of variable coolant flow systems (VRF) from a single app, which means you can stay right where you are.

Ideal applications

OFFICE · SCHOOL / UNIVERSITY · FACTORY / WAREHOUSE · HOSPITAL · HOTEL · RETAIL · RESTAURANT

Technical speification CE	HC–IOT GW
Dimensions (W x H x D)	138 x 200 x 41 mm
Net weight	540 g
Connection capacity	16 outdoor units + 64 indoor units
Power supply	230V | 50Hz
Max. power consumption	10W
Communication port	1 H-Link, 1 port RS485
Internet connection	Local network (Ethernet) or 4G[3]
External interface (data storage)	1 micro SD card slot

A simple yet powerful tool

Make your life easier

Central control
Control either the entire VRF system or specific zones all at the touch of a button.

Simplified troubleshooting
Clear error code history, brief summary of the problem, and reminder to clean filter.

Smartphone alerts
To report any serious malfunction.

Flexible user management
Add unlimited users and customise access restrictions.

1

Save more energy

Energy consumption data
View your electricity consumption in simple graphs to monitor the units with heavy-usage in your system (available in 2022).

Intuitive planning
Plan service visits around your working day and exceptions such as holidays.

Individual controller lock
Block any inappropriate use by occupants.

2

Create a pleasant climate

Easily adjust the **temperature, fan speed, and operating modes** for complete comfort and an ideal ambient climate throughout the building.

A **built-in weather forecaster** helps you define the conditions most suited to different indoor spaces throughout the year.

3

Plug & play system

The airCloud interface makes installation easy.
Just connect to airCloud via the **3G/4G[2] or Ethernet** network and pair your VRF systems by scanning the QR code. With **automatic detection of indoor units** and an optimised installer view, configuring your site and zones has never been quicker.

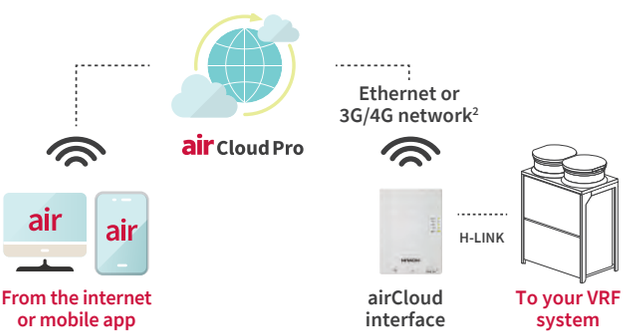
4

+ data security

- **The highest standards:** Protocol TLS v1.2, HTTPS 2038 encryption
- **Minimal personal information requested:** You only need your name, email address, and phone number to log in
- **Regularly updated and enhanced with new features,** airCloud Pro ensures you're always up to date.

+

How airCloud Pro works



Compatible with old and new Hitachi variable refrigerant flow systems [1]

Available on the App Store

ANDROID APP ON Google Play

Go to: aircloudproapp.com

[1] Check the compatibility of your VRF system with your Hitachi Cooling & Heating representative.
[2] 4G module available (second half of 2021) as an accessory.

airCloud Pro features

		airCloud Pro
Interface features	Indoor units per interface	64 indoor units
	Outdoor units per interface	16
	Interface per H-Link	1
	Max. amount of indoor units per user interface	Unlimited (with multiple interfaces)
	Cloud access	●
	Web application	●
	Mobile app	●
Connectivity	Prime connectivity	Ethernet
	4G connectivity	Option (available second half of 2021)
	Interface updated remotely online	●
	10 years of connection fees	●
System access	Main access	Cloud
	Local access or emergency access to configuration if server access is down	● With limited features
	Remote access	●
	Type of server	Cloud
	Internet connection mandatory	- ●
User and site management	Multi-user management	●
	User accounts with limited access to indoor units / functions	-
	Multi-site management	●
Basic functions	Basic indoor unit control	Start/Stop
		Heating/Cooling mode
		Setpoint temp.
		Fan speed
		Remote control lock
		Setup remote control groups
	Zone management	Create unlimited zones
	Installation dashboard	●
	Weekly programming	●
	Reset filter sign	●
	Alarm log	●
Languages	App languages	English
		French
		German
		Italian
		Portuguese
		Spanish

Selection guide
CSNet centralized controls

The CSNET range comes in two versions: a WEB version that offers flexibility and a touchscreen version for usability.
This range is ideally suited to the needs of any size project:
from small to large commercial buildings. It offers more functionality than any other range on the market as standard without add-ons. Installation is quick and easy.
Guided configuration makes things even easier.

Central control

Centralised control with touchscreen

CSNET Manager 2T10 / 2T15
+ HC-A64NET interface



Manage up to 1,024 indoor units.
Manage 1 to 64 indoor units per HC-A64NET gateway and up to 16 gateways via CSNET. The HC-A64NET gateway can be replaced with CSNET Lite.
Comes with a 10” (2T10) or 15” (2T15) screen.
- True maintenance tool: mail notifications, alarm log, data archive.
- Multi-site remote management and control tool with the web server function.
- Tool for managing and breaking down energy consumption.
- Interlock option: smart programming of IFTTT actions.
- Compatible with Fidélio software: perfect for the hotel industry.

Interface compatible with smartphones, tablets, PCs connected to the local network or or via the web.

New features
- Next-generation touchscreen for a more enjoyable user experience.
- New, more intuitive responsive user interface that offers the same features on any screen.
- Wizard function for easier, faster commissioning.
- Master/slave operation of indoor units: no electrical wiring needed for a more flexible and less expensive installation.

Ideal for managing large installations with maximum comfort for occupants and ease of access for maintenance teams.

Accessories
Wall bracket – Part no.: WALL SUPPORT 2
Base – Part no.: STAND SUPPORT

Centralised control, Web version

CSNET Manager SL +
interface HC-A64NET

Accessory
DIN rail support



Manage up to 1,024 indoor units.
Manage 1 to 64 indoor units on the HC-A64NET gateway and up to 16 gateways via CSNET. The HC-A64NET gateway can be replaced with CSNET Lite.
With the same features as the CSNET Manager 2T10/2T15, this SL version is a web version.
System control is done on smartphone, tablet, or PC only, connected to the local network or via the web.

New features
- More flexible installation: Ethernet port, 2 USB ports, HDMI port.

Ideal for managing large facilities.

Centralised control standalone web version

CSNET Lite



Standalone gateway to run up to 64 indoor units.
Has limited functionality of CSNET Manager 2.
Compatible with smartphones, tablets, PCs connected to the local network or via the web. For multi-site monitoring, CSNET Lite is compatible with CSNET Manager 2T10/2T15 and SL

Ideal for managing small and medium-sized facilities.



With this CSNET range, you can manage 1 to 64 indoor units on the interface and up to 1024 indoor units, locally or remotely on the WEB.

CSNET Manager 2 is a management and monitoring interface for Hitachi heating and air-conditioning systems. It features new touchscreen technology as well as a responsive display, for an improved user experience.

The CSNET Manager 2 T10 / 2 T15 range, includes 2 screens, 10” and 15”.

The system is managed on two H-Link interfaces of your choice, HC-A64NET or CSNET Lite, capable of managing up to 64 indoor units. CSNET Manager 2 can manage up to 16 H-Link interfaces.

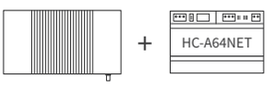
For installation extensions, CSNET Manager 2 is also compatible with the old CSNET Web (limited for certain options).

The 320 GB storage capacity allows you to store a virtually unlimited amount of system applications and histories.

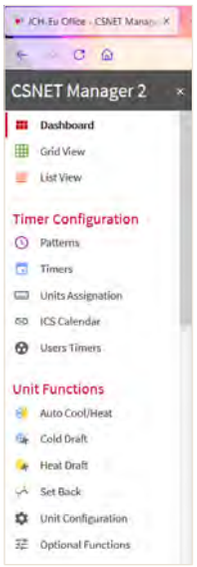
Selection guide to CSET centralized controls

		WEB version with touchscreen CSNET Manager 2T10/ 2T15 
Selection	Max. number of indoor units per H-Link interface	Up to 64
	Max. number of indoor units	Up to 1,024
	Max. number of outdoor units	64 outdoor units per interface
	Touchscreen	● 2T10(10") / 2T15 (15")
	Web server	●
	Compatible user interfaces	Smartphone Tablet PC equipped with a web browser
	Compatible BMS	● MODBUS interface included as standard KNX - BACNET via dedicated interfaces
Advanced management features	Number of user access levels	Unlimited
	Create monitoring zones (e.g multiples tenants)	●
	Energy consumption monitoring	●
	Energy consumption distribution breakdown	●
	Demand control	●
	Compatible with MICROS FIDELIO	●
	Unlimited annual programming integrating public holidays and leave	●
	Annual calendar synchronized with Outlook	●
	Set the optional functions of indoor units	● with up-to-date HLINK interfaces (CSNET Lite v2.0 or HC-A64NET v2.0)
	Master/Slave control	●
	MODBUS compatibility included	●
	Interlock function (IFTTT concept)	●
	Hotel applications (window contact & temperature setback settings)	●
Advanced display features	Floor plan schematic upload	● (image format)
	Virtual individual remote control	● (control, display ambient T)
Advanced comfort features	Set Back (frost protection)	●
	GENTLE COOL (summer comfort)	●
	Heat Draft (winter comfort)	●
	Demand control	●
	Night setback (lowers noise of outdoor unit)	●
Maintenance features	Fault notifications by email	●
	Operating history	2Gb
	Error log	6 months
	Emergency stop button	-
	Fault indicator button	-
	Check mode (view system parameters)	●
	Refrigeration diagram showing technical data	●
	Wizard (commissioning assistant)	●

CSNET Manager 2: Advanced management tool

WEB version CSNET Manager 2 SL 	Standalone WEB version CSNET LITE 
Up to 64	Up to 64
Up to 1,024	Up to 64
64 outdoor units per interface	64 outdoor units
-	-
●	●
Smartphone Tablet PC equipped with a web browser	Smartphone Tablet PC equipped with a web browser
● MODBUS interface included as standard KNX - BACNET via dedicated interfaces	● MODBUS interface included as standard KNX - BACNET via dedicated interfaces
Unlimited	Unlimited
●	●
●	●
●	●
●	●
●	-
●	●
●	-
● with updated HLINK interfaces (CSNET Lite v2.0 or HC-A64NET v2.0)	●
●	●
●	●
●	● (limited actions)
●	-
● (image format)	-
● (manage, display ambient T)	● (manage, display ambient T)
●	●
●	●
●	●
●	●
●	●
●	●
2Gb	256 Mb
6 months	6 months
-	●
-	●
●	●
●	●
●	●

New user + ergonomic interface



Menu

A unique menu zone for more intuitive navigation

An intuitive dashboard: 3 available formats



Dashboard



Icon view



List view

CSNET Manager 2: Advanced management tool

Stand out with quality service

Maintenance is essential because it ensures a long term life cycle of the system. Preventing faults and being responsive in the event of a fault by reducing intervention time with remote analysis tools are the key to meeting end user requirements.

Better control of energy consumption

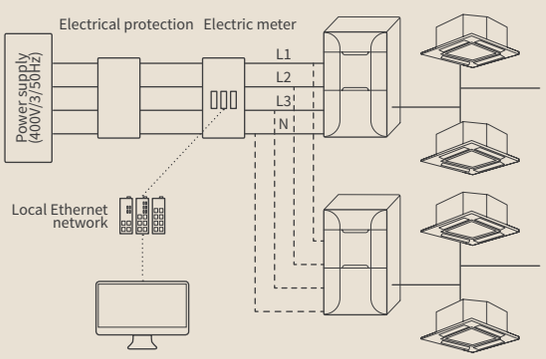
To offer its customers a secure solution, HITACHI has fully tested and validated select meters with CSNET Manager and VRF systems in the factory. This standard feature allows you to measure, record, and display the energy consumption of all or some of the indoor units and outdoor units managed by CSNET.
This consumption is shown in kWh or in £/€ if the user enters their hourly energy cost.

SIEMENS 7KM PAC3200



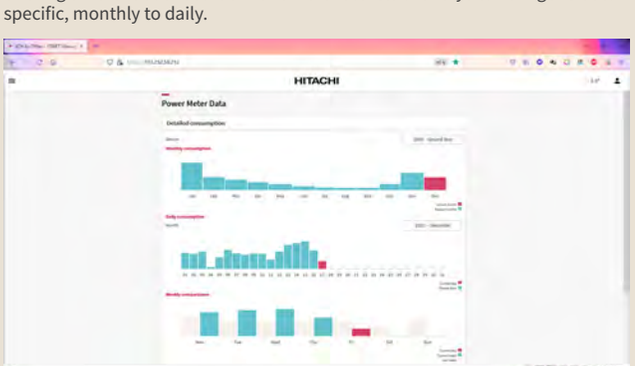
SOCOMEC Countis E27 & E28





Monitoring energy consumption means first and foremost access to information. Various interfaces are available in the 2021 version of CSNET, offering different dashboards with different levels of analysis: from general to specific, monthly to daily.

This feature also allows for multiple tenants to distribute energy consumption per user and by use (Heating or Cooling mode).





On board security: Interlock function

The embedded interlock function, standard in all CSNET interfaces, allows a multitude of interlock scenarios to be easily programmed, providing automated safety in more industrial applications.

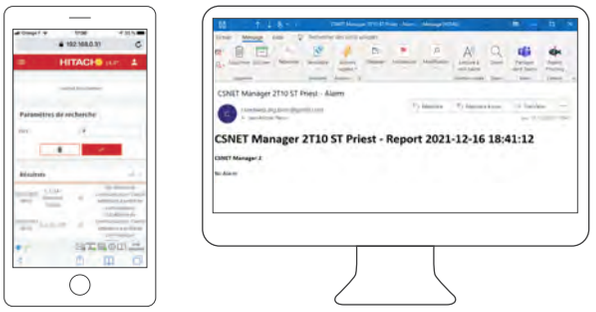
For example, a backup air-conditioning unit installed in a server room can be automatically switched on in case of a temperature deviation: If the ambient temperature > 20°C unit 2 will start up with a set point of 18°C.

New feature:
Server room management feature in CSNET Manager version 2.0

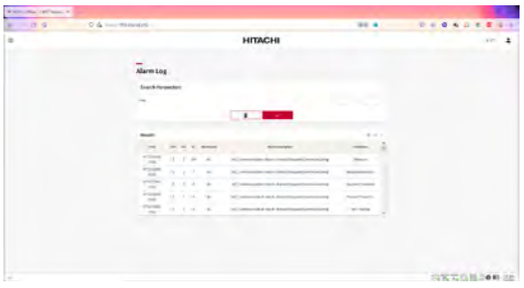


Fault alerts

An email server can send an email alert if an error code appears on the system.

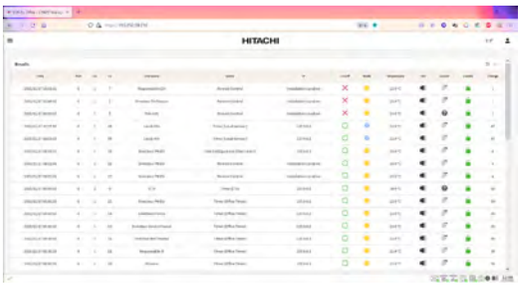


An alarm log is automatically generated by CSNET Manager 2 as soon as the first fault occurs. This log can be exported at any time.



Have remotely accessible analytics tools via the WEB SERVER function for PC, tablet, or smartphone

Access the installation's operating history. These configurable reports allow the user to plot graphs monitoring how the system performs at chosen settings and to create intervention reports.



Investigate a discomfort complaint reported by a customer and solve it remotely by changing operating settings.



A new Customer Experience with a unique and customizable level of comfort

Air off temperature setting, GENTLE COOL

This feature provides unsurpassed comfort levels for every user in Cooling mode by giving them the option to set their own tailored air off temperature.



- With CSNET, Cold drafts that can be a source of discomfort in the summer are a thing of the past in offices, thanks to the option of selecting a high air off temperature.
- With CSNET, an occasionally occupied meeting room can be quickly brought up to temperature by using an unlimited annual schedule synchronized with the calendar in Outlook.

Hotel function

This intelligent on-board programming function, included as standard in all CSNET interfaces, can combine several input signals triggering actions according to IFTTT logic.



- This function can customize comfort levels in rooms, both in summer and winter. When a guest arrives in their room (key insertion), a predetermined setpoint temperature can be activated.
- When opening the bedroom window, the indoor unit can be stopped or the set point adjusted.

Application for hotel rooms

- The CSNET is also compatible with MICRO FIDELIO software.

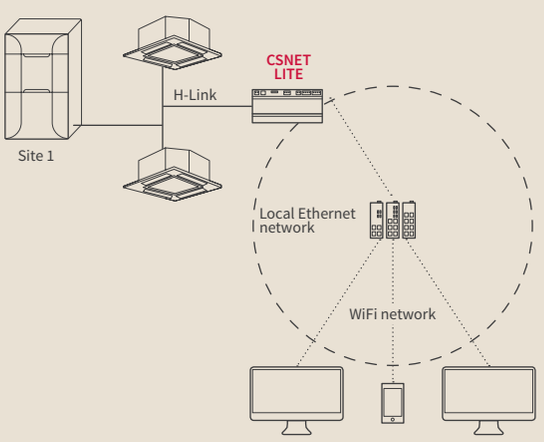
micros FIDELIO

Manage your spare parts with Hi Parts

Log in any time, 24/7.

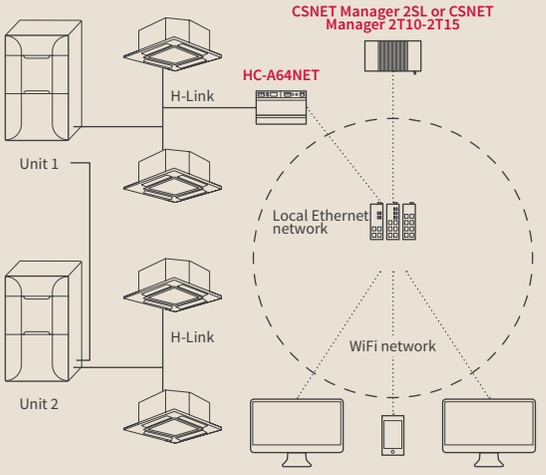
CSNET wiring

An example of a small site setup (< 64 indoor units)



Site 1: Access the local network with a **screenless interface**.
Access from a computer, a smartphone on the same local network, or via the web.

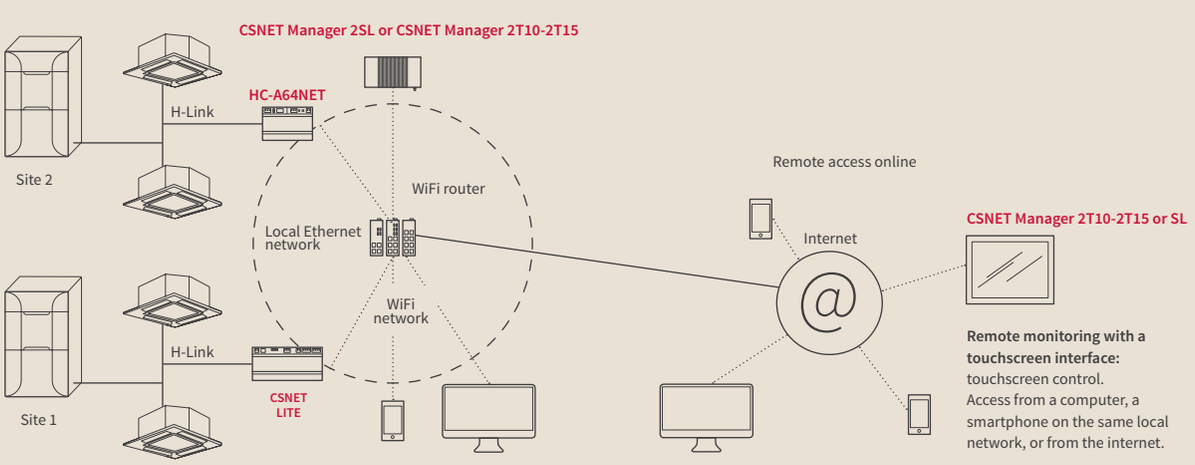
An example of a medium site setup (> 64 indoor units)



For large-scale systems, you can install up to 16 interfaces on an H-Link bus to run up to 16 x 64 indoor units (or 1,024 indoor units).

Site 2: Access the local network with a **screenless interface**.
Access from a computer, a smartphone on the same local network, or via the web.

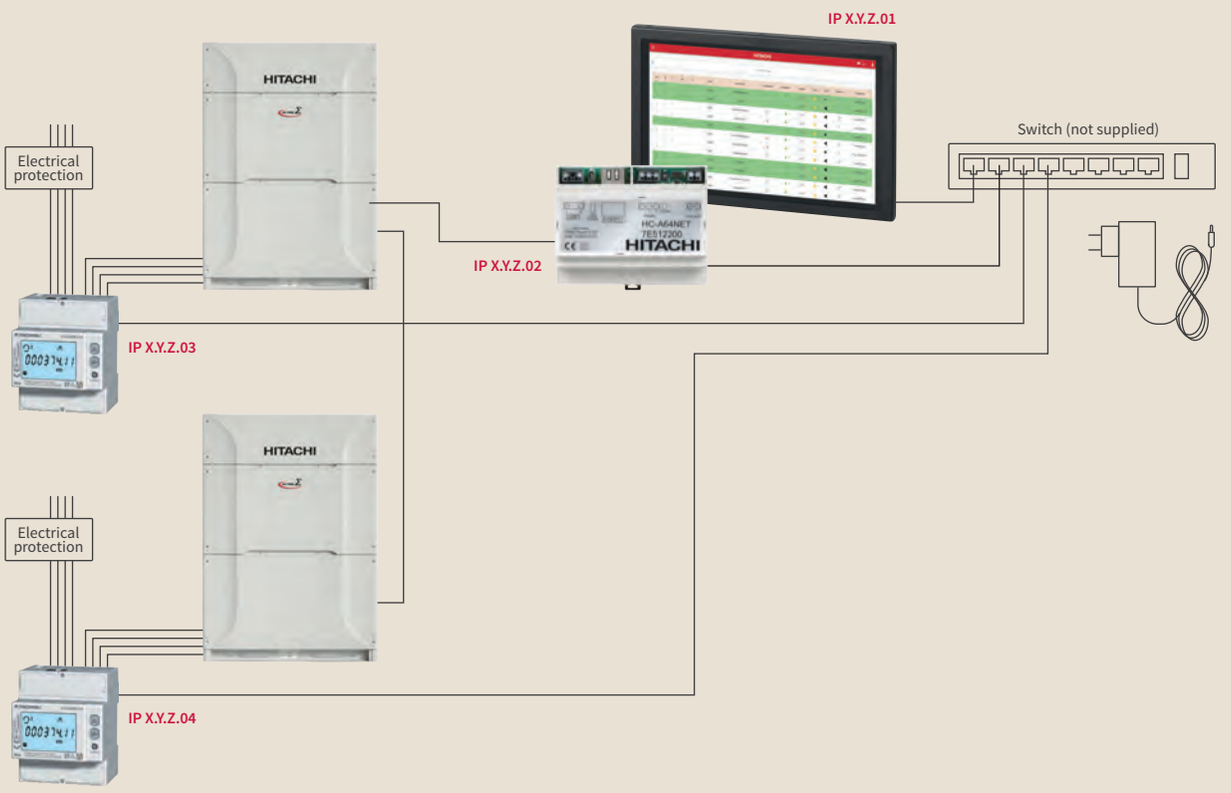
Example of the setup of 2 separate sites equipped with VRFs with centralized CSNET control and monitored remotely



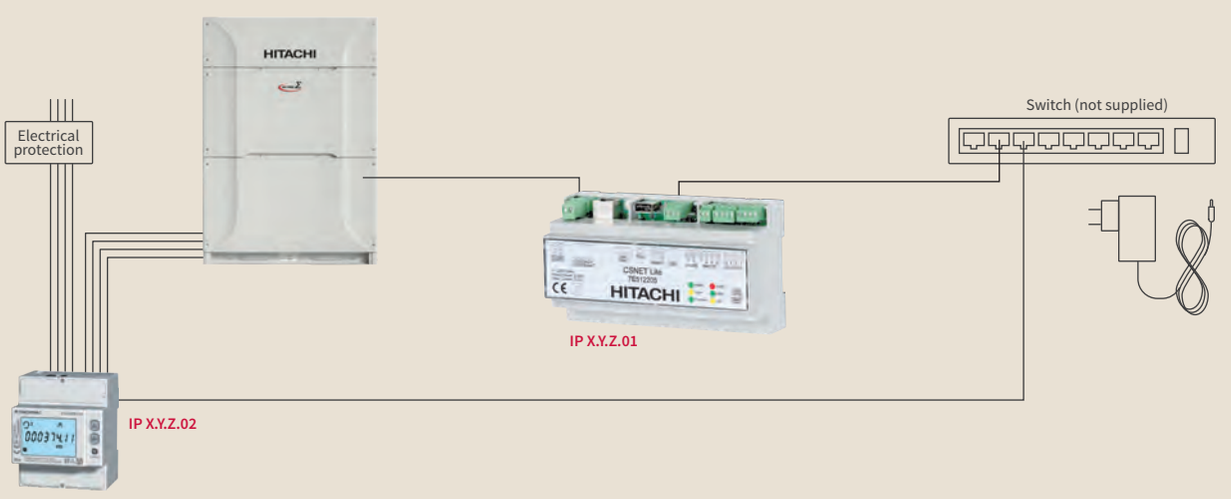
Remote monitoring with a touchscreen interface:
touchscreen control.
Access from a computer, a smartphone on the same local network, or from the internet.

Connection of a CSNET Manager 2 T10 + 2 energy meters

2 separate VRF units = 2 refregeration cycles



Connection of CSNET Lite + 1 energy meter

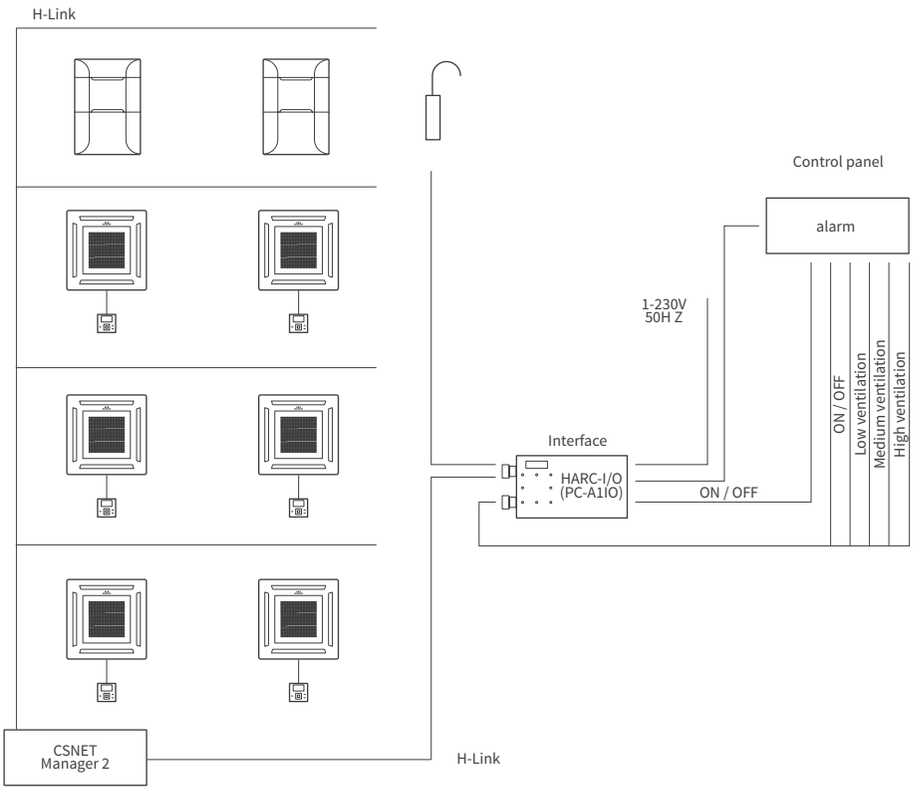


HARC-I/O interface (part no. PC-A1IO) to manage and communicate with third-party equipment

This interface integrates external equipment such as AHUs or ventilation units into a Hitachi system and controls them like Hitachi appliances via CSNET. E.g.: Ventilation, air handling unit, cooling units, etc.

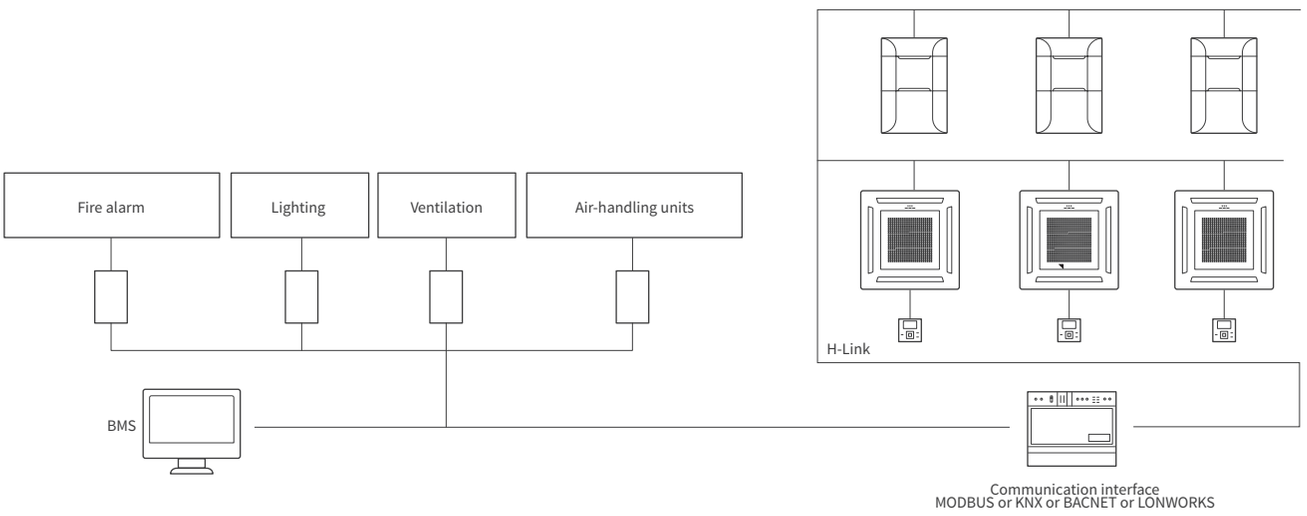
Functions:

- DI1: M/A management via dry contact.
- DI5: error display via dry contact.
- The interface should be addressed as an additional indoor unit of the outdoor unit.



Communication interfaces

HITACHI offers a full range of communication interfaces with most open protocols on the market.



Open protocols

MODBUS® protocol (Modbus® RTU or TCP/IP)

Most centrally managed sites with BMS feature a Modbus® connection.
HITACHI interfaces manage 8, 16 or 64 units per gateway.
They connect at any point on the H-link bus.
They are RTU or IP in auto-detection.
Economic BMS solution: perfect for medium and small public sector buildings.

KNX protocol

KNX® is a “building”-dedicated bus, standardized and independent of manufacturers (lighting, heating, security, energy management, metering, etc.).
New certified interfaces manage 16 or 64 units each.
Based on standard buses, EIB, EHS, Batibus, KNX® guarantees the interoperability of products bearing the KNX® logo. It is an ISO standard.
BMS solution: perfect for medium and large commercial buildings.

BACnet®/IP protocol

The widely used BACnet/IP was designed to allow the protocol to use TCP/IP networks.
New certified interfaces directly manage 16 or 64 units each.
BMS solution: perfect for large commercial buildings.

LONWORKS protocol

Created by ECHELON CORPORATION, Lonworks is a recognized and accepted standard in Building Management (IEA 709.1/2/3).
These interfaces manage 32 or 64 units each.
The interoperability of equipment makes it possible to provide facilities with better thought-out services and maintenance.
BMS solution: perfect for medium and large public sector buildings.

Interface references

HC-A16MB (16 indoor units)

HC-A64 MB (64 indoor units)

HI-AC-KNX-16 (16 indoor units)

HI-AC-KNX-64 (64 indoor units)

HI-AC-BAC-16 (16 indoor units)

HI-AC-BAC-64 (64 indoor units)

HARC-BXE(B) (32 indoor units)

HARC-BXE(A) (64 indoor units)

(end-of-life product, limited stock).

Our extensive range of Hitachi VRF systems are ideallly suited for all building types across small and large developments. Connect up to 64 indoor units per outdoor unit, with each one independently controlled.



VRF outdoor units



* JOHNSON CONTROLS - HITACHI AIR CONDITIONING EUROPE SAS participates in the Eurovent Certification Program for AC / VRF / LCP-HP categories; data from certified models are listed in the Eurovent Annual Report (www.eurovent-certification.com).

Selection guide

VRF system

1 OUTDOOR UNITS

2 COOLING CAPACITY

OUTDOOR UNITS	Hp													
	4	5	6	8	10	12	14	16	18	20	22	24	72	96
Micro VRF (IVX Prime & IVX Comfort) Refrigerant R32 (4-6 Hp) Refrigerant R410A (4-12 Hp)	•	•	•	•	•	•								
SET FREE Mini Refrigerant R410A	•	•	•	•	•	•								
SET FREE Sigma Standard Refrigerant R410A				•	•	•	•	•	•	•	•	•	•	•
SET FREE Sigma High-performance Refrigerant R410A		•	•	•	•	•	•	•	•	•	•	•	•	
VRF IVX Centrifugal Refrigerant R410A	•	•	•	•	•									

Controls

Individual controls

PC-ARFP1E (hard wired)

PC-ARH1E (simplified wired)

PC-AWR (infrared)

Central controls

PSC-A32MN (touch)

PSC-A64GT (touch)

Aircloud Pro

CSNET Lite (web)

CSNET Screenless (web)

CSNET Manager 2T10 (web and touch)
CSNET Manager 2T15 (web and touch)

3 FEATURES

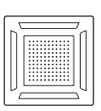
4 INDOOR UNITS

Technology	Supply voltage	Connection rate range	Max. number of connected indoor units	Min. power of connected indoor units	Max. pipe length	Max. level difference between outdoor unit and indoor unit (outdoor unit above / below)	Max. level difference between indoor units	Operating ranges
Single split or 2-pipe VRF	400V / 3 / 50Hz and 230V / 1 / 50Hz (depending on the model)	90 - 115%* depending on the application	4	0.8 Hp (2 kW cooling)	50 to 100 m	30 m / 20 m	3 m	Heating -20° ~ 18°C WB cooling -5°C (-15°C: optional) ~46°C DB
2-pipe & 3-pipe heat recovery VRF (depending on the model)	400V / 3 / 50Hz and 230V / 1 / 50Hz (depending on the model)	50 - 130%	39	0.4 Hp (1.1 kW cooling)	85 to 125 m	50 m / 40 m (depending on the model)	15 m	Heating -20° ~ 15°C WB Cooling -5° ~ 48°C DB
2-pipe & 3-pipe heat recovery VRF	400V / 3 / 50Hz	50 - 130%	64	0.4 Hp (1.1 kW cooling)	165 m	50 m / 40 m	30 m	Heating -20° ~ 15°C WB Cooling -10° ~ 48°C DB
2-pipe & 3-pipe heat recovery VRF	400V / 3 / 50Hz	50 - 150%* depending on the application	64	0.4 Hp (1.1 kW cooling)	165 m	50 m / 40 m	30 m	Heating -20° ~ 15°C WB Cooling -10° ~ 52°C DB
Single split or 2-pipe VRF	400V / 3 / 50Hz	75 - 120%	6	0.8 Hp (2 kW cooling)	75 to 100 m (depending on the model)	30 m / 20 m	10 m	Heating -15° ~ 15°C WB Cooling -5° ~ 46°C DB

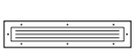
INDOOR UNITS

1.1 to 56 kW

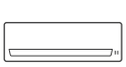
+100 models



Cassette units



Ducted



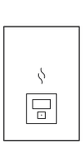
Wall unit



Console



Ceiling unit



Hydrofree module

* Please refer to the technical documentation for more details on the combinations allowed.

Communication protocol

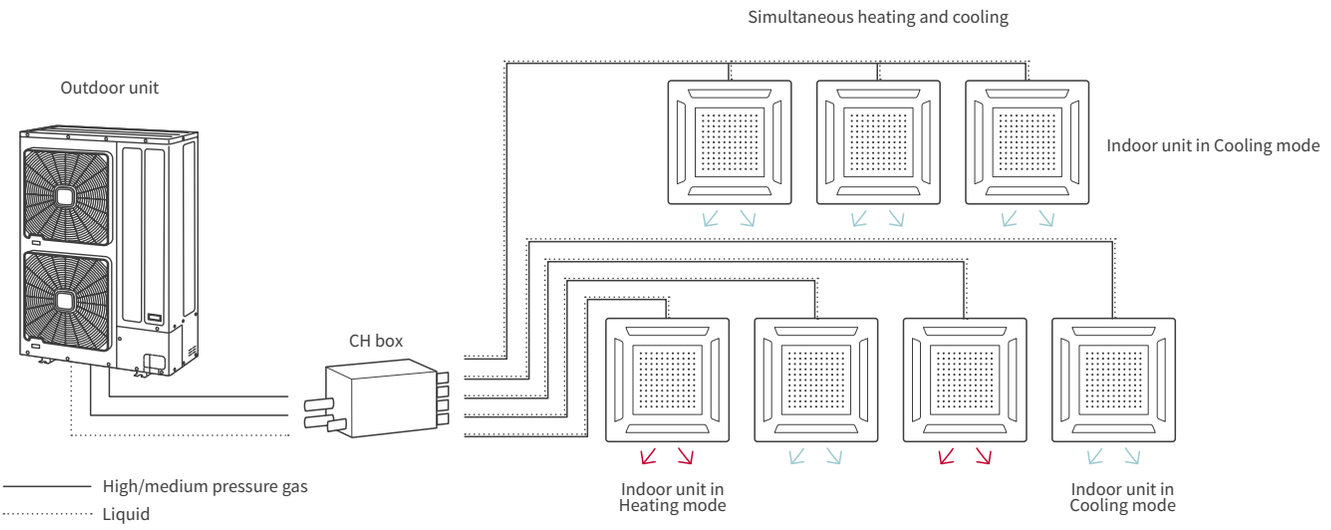


MODBUS BACNET KNX LONWORKS

Hitachi exclusive features

Set Free Mini VRF with heat recovery (8 to 12Hp)

The most compact 3-pipe VRF in the world! EXCLUSIVE TO HITACHI



The + points of the Hitachi solution

Energy recovery box

- No addressing to do on our CH boxes.
- **Low noise level: down to 31 dB(A) on multi-box and 33 dB(A) on single-box.**
- **The most compact on the market: Single box HxWxD: 191x301x214, multi box HxWxD: 260x303x352.**
- **Install** in a **corridor to ease distribution to indoor units.**
- Positioning the CH box close to the units reduces the complexity of the pipe networks and therefore uses less refrigerant.
- Electronic expansion valves in the boxes: more gradual opening to limit noise levels.
- **Optimal operation:** the CH box provides heating and cooling air simultaneously without the need for a minimum % of units being in each mode. 1 unit can be in cooling mode while the rest are in heating mode. Traditional solutions need a cooling demand of 25% or 30% to unlock simultaneous controls.
- **No condensate connection!**
- Box connections provided with flare connection: ideal for sensitive areas where there is a risk of fire ... can be brazed onsite if necessary.

Set Free Mini 8 to 12Hp

- Outdoor unit with low amount of refrigerant: 8Hp (pre-charged with 4.2kg), 10 and 12Hp (pre-charged with 5.5kg).
- Meets EN 378 relating to the level of gas concentration in the premises.
- Small footprint: up to 37% less compared to top flow VRF.
- Easy to install: on a balcony, big-foot support, wall-mounted on the façade with brackets.
- Great flexibility: up to 500m length of piping.
- Low noise level.
- Reducing the cost of installation.
- Compatible with single branch boxes and Multi-branch boxes.

Centrifugal VRF (4 to 10Hp)

EXCLUSIVE TO HITACHI



The + points of the Hitachi solution

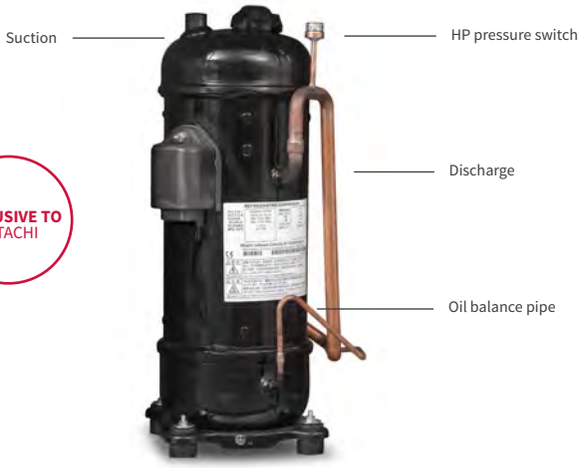
- No outdoor units visible on the façade of the building so ideal for listed buildings where planning permission is normally required.
- Connect up to 6 indoor units.
- **Available pressure of 120Pa on the fan.**
- **Install in a suspended ceiling or technical room.**
- **Height < 600mm.**
- Individual control of indoor units.
- Ideal for city-center high street businesses as no need to obtain permits to shut the road for a crane lift.
- Compatible with all ranges of HITACHI VRF indoor unit and DX KIT.

Smart oil management

Controls compressor oil level without sensors

Oil returns by suction:
the oil flows to the bottom of the casing, then rises by a difference in pressure between the HP and LP to the bearings and rollers.

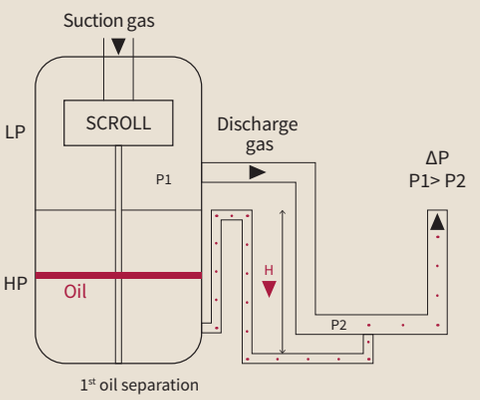
EXCLUSIVE TO HITACHI



The + points of the Hitachi solution

Optimal lubrication

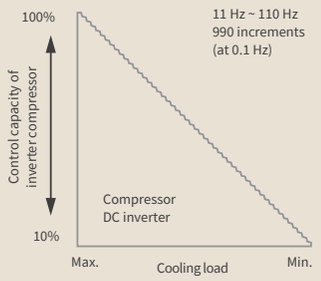
- Maintain the perfect oil level in the operating compressor, and in shutdown.
- Ensure the right oil level when restarting the compressor.
- Hitachi's high pressure scroll ensures oil naturally migrates from high pressure side to low pressure side lubricating the bearings.
- If any liquid returns to the compressor the high pressure, high temperature environment evaporates it ensuring the liquid doesn't damage the compressor.
- Reduce energy costs.
- Less wear and tear on the compressor.

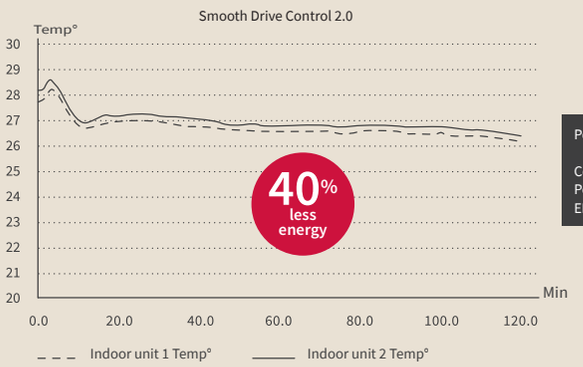


Smooth Drive control 2.0

Inverter frequency adjusted by 0.1 Hz for accuracy.

NEW





Performance at 25% partial load

Cooling capacity = 7.88 kW
Power input = 1.13kW
EER = 6.96

The + points of the Hitachi solution

- Ambient temperature monitored in 0.1K increments compared to a 1K increment with Smooth Drive Control 1.0.
- Compressor power will ramp down to a minimum of 10% ensuring just 1 unit in a system can be operated.
- Improved partial-load performance: EER up to 6.96 (25% load).
- The setpoint temperature is quickly reached and maintained with frequent monitoring, at an accuracy of 0.1Hz.

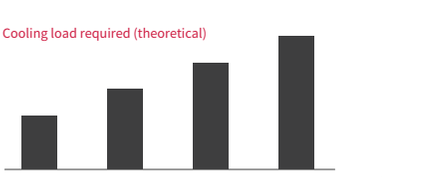
Variable evaporating temperature

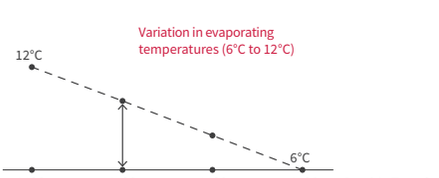
Smart Control automatically changes the evaporation temperature of the refrigerant according to the actual thermal requirements of the premises and the outside temperature.

The + points of the Hitachi solution

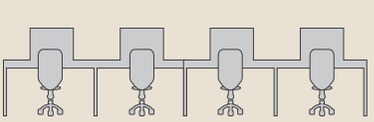
- Increased seasonal energy efficiency.
- High COPs and EERs at partial loads.
- Ultimate comfort.

30% less energy use









A meeting room in mid-season

High cooling needs: variable occupancy, computers, and sun.

The evaporating temperature is decreased.
- The air off temperature = 8ºC.
- Cooling capacity - 100% load, with nominal energy consumption.



A separate office

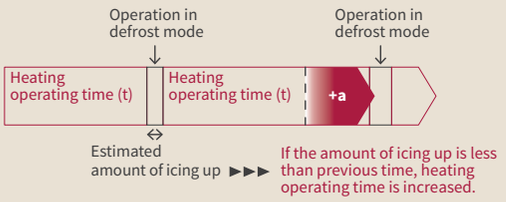
Low cooling needs: stable occupancy.

The evaporating temperature is increased.
- The air off temperature = 16ºC.
- Cooling capacity = 53% load, with 30% energy savings.

Smart defrost for continuous comfort

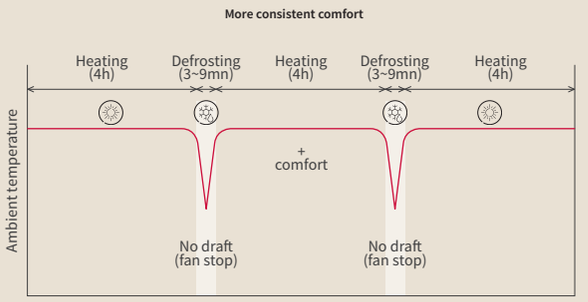
Smart defrost

- Continuous analysis of defrosting cycle durations and the system self-adapts to minimize them to between 3 to 9 min max.
- System optimized to detect the amount of ice on the outdoor unit's coils. (SIGMA, Set Free mini, Micro VRF and IVX Prime).



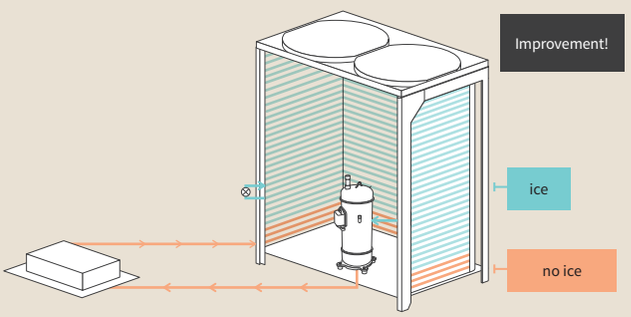
The + points of the Hitachi solution

- Runs for up to 4 hours without defrosting!
- Defrosting time limited to 3 to 9 min to maintain comfort.
- Indoor unit fans stop during defrost, then start again when air off T°s > 30°C (user comfort maintained).
- **Maintains the lower part of the external heat exchanger at temperatures between 5°C and 20°C.**



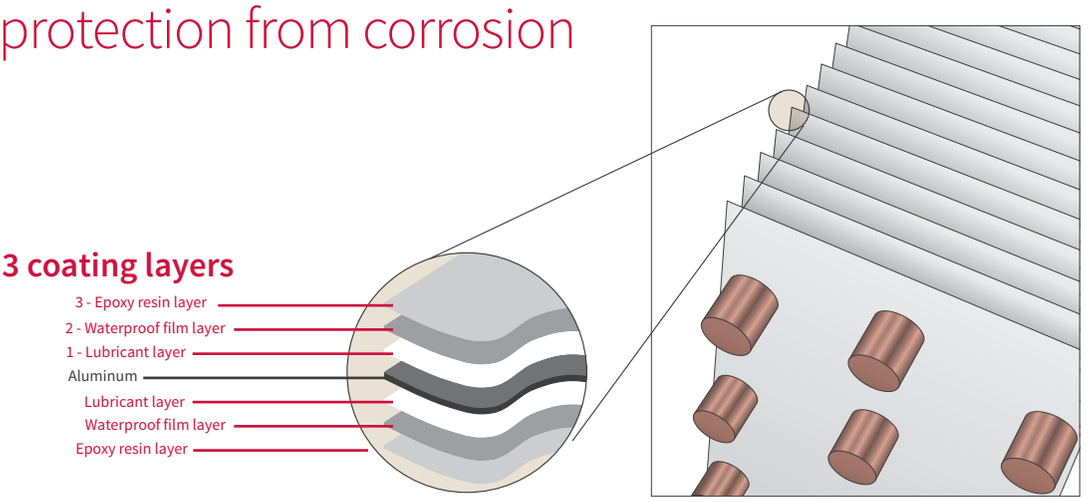
Defrost prevention

The system monitors the level of ice buildup in Heating mode. The refrigerant returning from the indoor unit defrosts the lower part of the outdoor unit heat exchanger. In Heating mode, the refrigerant returns to the outdoor unit at an average temperature of 5-20ºC. This temperature is sufficient to carry out a preliminary defrost and by radiation it heats the upper part of the heat exchanger. Finally, the expansion valve of the outdoor unit decreases the pressure to complete the refrigeration cycle.



Enhanced protection from corrosion – 3 layers

EXCLUSIVE TO HITACHI



- Lubricant coating (1) protects against rust and limits corrosion.
- Hydrophilic coating (2) that prevents the concentration of water droplets and allows water to flow over the surface.
- Anti-corrosion coating (3) consisting of a chromium phosphate film or an epoxy resin to protect against corrosion.

The + points of the Hitachi solution

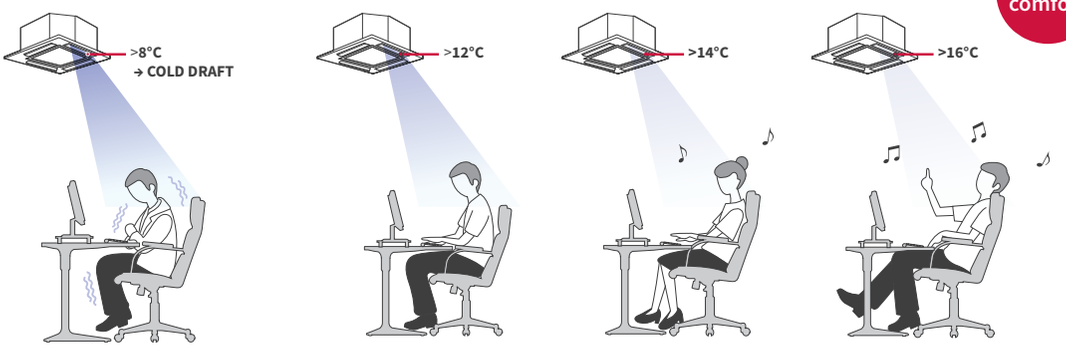
- Extending the life of the equipment.
- Maintaining energy performance over time.
- Protecting against aggressive environments: pollution in the city center, industrial sites, storage warehouses, salt spray.
- Units should still be installed more than 300 m from the ocean, without specific Blygold treatment.
- Hitachi outdoor units (IVX, Set Free Mini, SIGMA) offer the best protection on the market.

Air off temperature control Gentle Cool

EXCLUSIVE TO HITACHI

Potential for discomfort | **GentleCool → No cold drafts**

Ultimate comfort



GentleCool: OFF | GentleCool: LOW | GentleCool: MEDIUM | GentleCool: HIGH



Min. Temp° control of the air off with the remote control PCARFP1E or the CSNET monitoring system

Rest of the market:

- Users feel cold drafts.
- Ducted units => Problems with condensation forming (poor quality of air).

The + points of the Hitachi solution:

- No more cold drafts
- Clean quality of air => No condensation in the ducts (ducted units), for improved quality of air inside.
- Available on all Hitachi indoor units.

FrostWash VRF SIGMA only

FrostWash's operating process is carried out in three stages: frosting, defrosting and cleaning the indoor unit's heat exchanger to remove built-up dirt and impurities. This improves air quality and maintains performance over time.



EXCLUSIVE TO HITACHI

NEW

Available in 2022

The + points of the Hitachi solution

- Maintain the efficiency of the heat exchanger.
- Improve air quality by reducing the accumulation of dust and mold by up to 87%.
- Operation (<40 mins): Manual, Auto, and programmable.
- Only available on new outdoor units with Smooth Drive Control 2.0 (SIGMA).
- New remote control compatible with FrostWash function (PC-ARFG-E).

Compatible units:

800 x 800 cassette units: RCI-FSR
600 x 600 cassette units: RCIM-FSRE
2-way cassette units: RCD-FSR
Ducted units: RPI(L/H)-FSRE
Under ceiling unit: RPC-FSR

The biggest range of ducted units on the market (1.1kW to 56kW)

DUCTED THE MOST COMPACT ON THE MARKET!
197 mm in height

Medium and high-pressure ducted unit

1.1 to 4kW: up to 100Pa
4 to 18 kW: up to 150Pa
11 to 18 kW: up to 200Pa

NEW







The + points of the Hitachi solution

- Extensive range of duties (1.1 to 18 kW in cooling).
- Low-height: 197 mm (RPIL-FSRE range: 100Pa).
- 30% fresh air intake.
- Refrigerant connections from the rear (RPIL model).
- "Gentle cool" regulated air off temperature setting to stop cold drafts and improve air quality.
- Easier filter removal (from below or from the side).
- Option to move the electrical box to other side of unit or to the wall (sizes 0.4 to 2Hp).
- Hitachi plenums available as an option.
- Compatible with Airzone plenums for zoning.
- Condensate pumps can be disconnected (RPIL)

High-pressure ducted unit

(220Pa) for high-power units "16 and 20Hp"

EXCLUSIVE TO HITACHI



The + points of the Hitachi solution

- 30% fresh air intake.
- Highest capacity on the market at 56 kW in cooling mode.
- Highest air flow flow on the market under 220 Pa at 9,000 m3/h.
- 100% redundancy on RPI 16 and 20Hp with connection to two separate and independent units.
- Filtration as standard.
- Temperature control: average between return air sensors and remote control sensor.
- Suitable for large-scale applications: warehouses, supermarkets, etc.

SILENT ICONIC design panel for cassette units 800x800

DESIGN AWARD 2020

GOOD DESIGN AWARD 2020

reddot design award





EXCLUSIVE TO HITACHI



NEW



The + points of the Hitachi solution

- Sleak design that fits into the interior of any room.
- Design of the blades and shape of the louvres improve air distribution through the Coandă effect.
- Gentle Cool air off temperature setting for more comfort and energy savings.
- Compatible with R32 and R410A ranges (VRF and Utopia Prime air/air heat pump).
- Standard cassette version (white or black).
- Iconic Design cassette version (white or black).
- Installation in premises with high ceilings.

Size 0.4 Hp (1.1kW)

Available as a ducted unit



Available as a 600x600 cassette unit



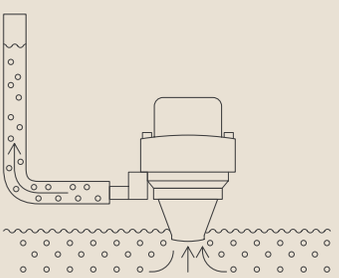
Available as a wall unit



The + points of the Hitachi solution

- A response to new building standards with better insulated buildings.
- Heating and cooling capacity adapted to the thermal needs of small premises.
- More comfort: no overheating.
- Smaller units reduce the amount of refrigerant in the system which can eliminate the need for leak detection under EN378.
- Wall units, cassette units, ducted units have 4 speed settings.
- More air flow at the same capacity as competitor products: higher circulation rate.

Self-powered condensate pump
(indoor units)

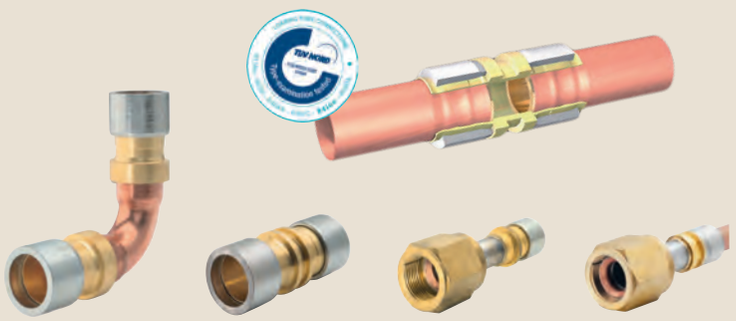


The + points of the Hitachi solution

- If the lift pump of one indoor units is faulty, the other units keep running.
- No impact on the facility as a whole.

Cooling accessories

VULKAN LOKRING



Hitachi sanctions the use of pipework without brazing, LOKRING or others. However, the use of such technology for piping is the responsibility of the installer alone. And Hitachi cannot be held responsible for leakage problems.

Applicable pipe connections:
- Connections and reducers.
- Flare connections.
- Large radius elbows.
- Reduced elbows.

The use of original Hitachi Multikit components are mandatory.

Hitachi Multikit pipe kits



The + points of the Hitachi solution

- The shape of the multikit pipe kits promotes the flow of fluid compared to the widely used T-joint.
- **Energy performance guarantee.**
- Easier to install: the main line can be laid as a straight line.
- More space between the main line and the indoor unit line; makes it easier to use a pipe cutter to cut one of the pipes.

New remote control, hard wired design

PC-ARFG-E

Available from 2022

NEW



The + points of the Hitachi solution

- Elegant and modern design in a curved shape.
- Screen with parameters displayed in 5 different colours for ease of understanding.
- Functions: Cooling/heating mode, auto mode, dehumidification, fan speed, setpoint adjustment, weekly programming, show power consumption, Eco mode.
- More intuitive interface: easy access to menu functions, settings, FrostWash...
- Description of each function shown on the screen, no need to print out the manual.
- Special functions for hotel applications!
- Password-protected Service & Installation menu.

Solution for control and monitoring

NEW

Aircloud Pro



The + points of the Hitachi solution

- Connected central control solution via a server (Cloud) and web apps.
- Remote management functions and simple hourly programming, alarm notifications.
- Easy to maintain: alerts to show when the filter needs cleaning.
- Manage user accounts and multiple interfaces/sites for site managers.
- **More functions to be added over the year:** show energy consumption, compatibility with energy meter, 4G…
- IoT technology brings the power of the Cloud to your fingertips.

CSNET Manager 2 (version 2.0)



The + points of the Hitachi solution

- New features of version 2.0 of the CSNET software (managing the Yutaki, server room function, pulse meters on CSNET Lite, electricity and water metering for third-party systems...)
- Plug&Play management and monitoring solution.
- Modbus output available as standard.
- Air off temperature setting Gentle Cool.
- Local or remote management and monitoring.
- Alarm notifications by email.
- Visualization of the energy consumption.
- **No license required.**
- Large-scale systems: web version and touch tablet (CSNET Manager 2).
- Small systems: web version (CSNET Lite).

VRF outdoor units

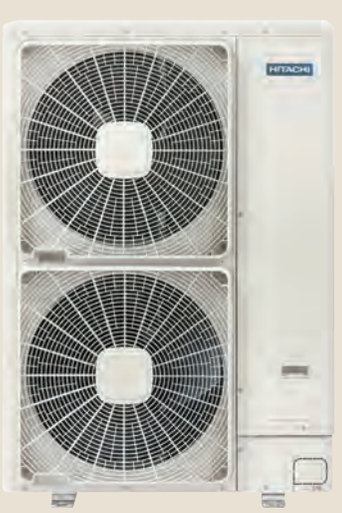
Micro VRF (IVX Prime and IVX Comfort)



- New 4 to 6Hp range with R32 and R410A
- Available from 10 to 30 kW.
- Option to control up to 4 indoor units independently.
- Compact and lightweight units.
- Perfect for small application: residential and commercial.

VRF SET FREE Mini

EXCLUSIVE TO HITACHI



- 2-pipe: (4 to 12Hp)
- 3-pipe: (8 to 12Hp)
- Available from 12 to 33 kW.
- Available ESP: 30 Pa.
- Exclusive: large selection of compatible indoor units from 0.4 Hp.
- Connect up to 39 indoor units.
- Perfect for small, medium, and large-scale public applications.

VRF SET FREE Sigma



Sigma 2.5: available in 2022

- Available from 14 to 268 kW.
- 2-pipe / 3-pipe VRF solution available from the same universal outdoor unit.
- Standard range and high-efficiency range.
- Save space and money (single-module up to 67 kW).
- Exclusive comfort: GENTLE COOL function and smooth Drive Control.
- Available ESP: 80 Pa.
- Perfect for medium and large-scale commercial applications.

VRF IVX Centrifugal

EXCLUSIVE TO HITACHI



- Available from 10 to 24 kW.
- Perfect solution for city center retail: invisible outdoor units , installed in suspended ceilings so ideal for listed buildings where permits would normally need to be obtained to shut the road for a crane lift.
- Option to individually control up to 6 indoor units.
- Perfect for small and medium projects in areas with restricted planning permission.

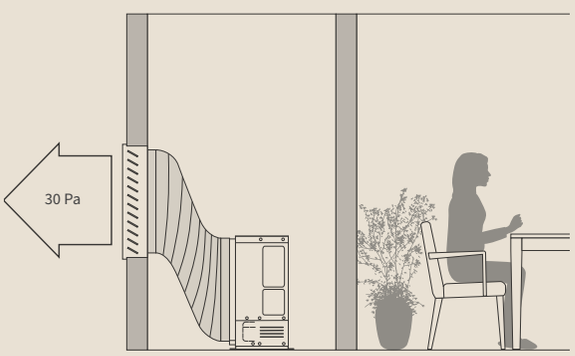
Benefits
Micro VRF (IVX Prime and IVX Comfort)

1 The smallest VRF on the market, in the most extensive range of its category.



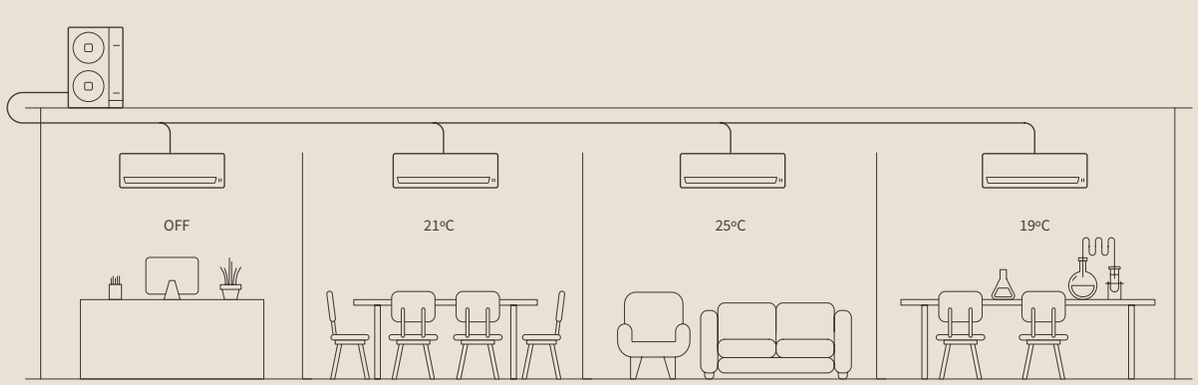
Small businesses and offices have a variety of air-conditioning requirements and demand the best level of comfort. Available from 10 kW to 30 kW, the Micro VRF range meets the needs of any projects, no matter how much space is available.

2 External static pressure available on IVX for flexible installations



The new 4 to 6 Hp single-fan range features 30Pa of static pressure. A unit of 14kW (6 Hp), with a single fan, has a footprint of just 0.35 m^2. No static pressure available on IVX Comfort units (8 to 12Hp).

3 Independently control indoor units IVX Prime and IVX Comfort



A comfortable indoor environment is achievable thanks to the ability to set different temperature set points. In many buildings, due to the orientation, the heating/cooling load may vary for each area. In such cases the option to individually set the temperature of each indoor unit is very useful.

Hitachi's Micro VRF range meets the comfort needs of every area, with individual temperature control. This solution is ideal for small and medium-sized commerical premises, with a single outdoor unit providing thermal comfort in 4 different rooms.

4 A wide choice of indoor units

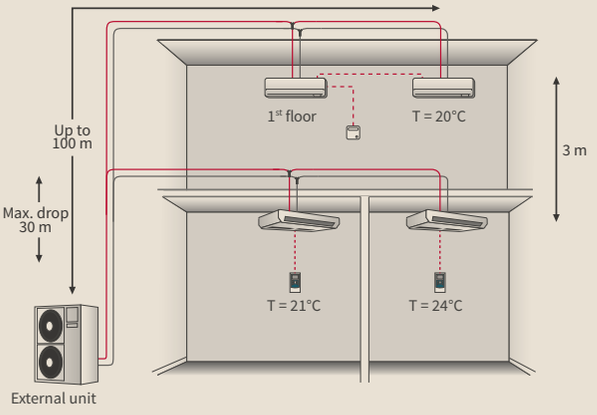


In the same building, the requirements in terms of aesthetics, space, and temperature are different in each room. So it fits into any space, the Micro VRF range is compatible with all SYSTEM FREE indoor units: Wall, ducted, cassette, console and under ceiling units.

5 Less refrigerant piping, more savings

The Micro VRF range is an interesting alternative to typical multi-split installations because it is easier to install. The refrigerant piping is in a single line with the same diameter throughout the main run. Multikits then branch off to the different indoor units, each with their own pipe sizes. This reduces the amount of refrigerant piping used and saves time as well as installation costs.

6 Even greater flexibility



The Micro VRF units have a total pipe run of up to 100 m and a 30-m level difference between the indoor unit and the outdoor unit. This makes it much easier to place the outdoor unit in a suitable location, such as on the roof of the building, without interfering with the aesthetics of the premises.
It's also possible to install indoor units on different floors connected to the same pipe run. For example, a single outdoor unit can provide air-conditioning to a 2- floor commercial space.

Micro VRF (IVX Prime & IVX Comfort)

SEER 8.35 SCOP 4.75 GENTLE COOL

EUROVENT CERTIFIED PERFORMANCE



IVX Prime (R32 or R410A)

THE FIRST HITACHI VRF WITH R32 (4~6HP)



IVX Comfort (R410A)

Micro VRF with R32, the green choice

The R32 refrigerant has a number of advantages over the R410A refrigerant. Although both are “fluorinated greenhouse gases covered by the Kyoto Protocol,” the R32 has a lower global warming potential (GWP = 675) compared to the R410A (GWP = 2088). In addition, the use of R32 reduces the refrigerant charge by 7% to 12% compared to the equivalent installation on R410A. This reduces its environmental impact by 75% compared to R410: low GWP and less load on the system. This means it has a lower TeqCO2 equivalence, and a lower charge will still achieve better results because of its better thermodynamic characteristics. Another advantage of the R32 over the R410 is its greater ease of recovery and reuse, taking into account the fact that the installation and maintenance are very similar.

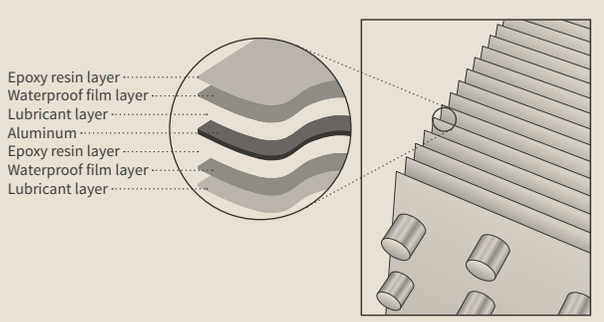
Flexible installation

The new 4 to 6Hp range with R32 and R410A has an external static pressure of 30Pa. This allows the condenser to be installed inside and ducted to outside. Connect up to 4 indoor units in the Set free range (size 0.8Hp units compatible).

Large operating ranges

The Micro VRF will keep performing in extreme temperatures: down to -20°C in heating and -15°C to 46°C in cooling (-5°C to 46°C for 4 to 6Hp). Features that make this a product perfect for year-round comfort.

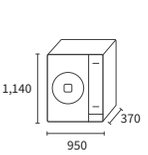
Advanced anti-corrosion treatment



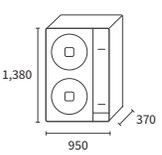
Customizable personal comfort

The air off temperature on each indoor unit can be independently set according to requirements. Customize your comfort with the GENTLE COOL setting on the latest wired remote controls. In summer, cold drafts can be avoided as you can set the air off temperature to the maximum setting.

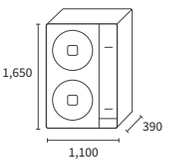
Outdoor units



RAS-4H(V)N/RP2E
RAS-5H(V)N/RP2E
RAS-6H(V)N/RP2E



RAS-8HNCE
RAS-10HNCE



RAS-12HNC

Micro VRF IVX PRIME

		Version R32 (4 ~ 6Hp)			Version R410A (4 ~ 6Hp)		
Performance, cooling	**Unit**	**RAS-4H(V)RP2E**	**RAS-5H(V)RP2E**	**RAS-6H(V)RP2E**	**RAS-4H(V)NP2E**	**RAS-5H(V)NP2E**	**RAS-6H(V)NP2E**
Nominal cooling capacity (min-max)	kW	10.00 (4.50 - 11.20)	12.50 (5.70 - 14.00)	14.00 (6.00 - 16.00)	10.00 (4.50 - 11.20)	12.50 (5.70 - 14.00)	14.00 (6.00 - 16.00)
Rated power input cooling	kW	2.51	3.42	4.32	2.81	3.83	4.91
EER	-	3.98	3.66	3.24	3.56	3.26	2.85
SEER (average climate)[2]	-	7.31(V) - 6.96	8.35(V) - 8.20	7.35(V) - 7.25	7.04(V) - 6.72	7.80(V) - 7.67	7.01(V) - 6.92
Seasonal energy class (cooling)	-	A++	-		A++	-	
Working range in Cooling [*]	-	-5°C / 46°C (DB)			-5°C / 46°C (DB)		
Performance, heating							
Nominal heating capacity (min-max)	kW	11.20 (5.00 - 14.00)	14.00 (5.00 - 18.00)	16.00 (5.00 - 20.00)	11.20 (5.00 - 14.00)	14.00 (5.00 - 18.00)	16.00 (5.00 - 20.00)
Rated power input heating	kW	2.60	3.39	3.64	2.56	3.39	3.64
COP	-	4.31	4.13	4.40	4.38	4.13	4.40
SCOP (average climate)[2]	-	4.60	4.75	4.73	4.64	4.68	4.71
Seasonal energy class (heating)	-	A++	-		A++	-	
Working range in heating	-	-20°C / 18°C (WB)			-20°C / 18°C (WB)		
Technical features							
Airflow (cooling)	m^3/h	4800	4800	4800	4800	4800	4800
Sound pressure in Cooling (night mode)	dB(A)	54 (51)	56 (51)	56 (51)	54 (51)	56 (51)	56 (51)
Sound power	dB(A)	70	72	72	70	72	72
Net weight	kg	86 (84)			86 (84)		
Dimensions (H x L x D)	mm	1140 x 950 x 370			1140 x 950 x 370		
Min. power of indoor unit	Hp	0.8			0.8		
Number of units that can be connected (min - max)	-	1 - 4 [V*]			1 - 4 [V*]		
Available static pressure	Pa	30			30		
Connectable index (min.-max.)	%	90% - 115%			90% - 115%		
Compressor	-	Inverter DC rotary unit			Inverter DC rotary unit		
Refrigeration characteristics							
Max. length / additional charge	m/g/m	75 / 45			75 / 60		
Initial refrigerant charge	kg	3.0			3.2		
Pre-charged for	m	30			30		
Min. length	m	5			5		
Max. level difference (outdoor unit above / below)	m	30 / 20			30 / 20		
Diameter of pipes (Liq / Gas)	inches	3/8 - 5/8			3/8 - 5/8		
Refrigerant	-	R32			R410A		
Electrical features, outdoor unit							
Power supply	-	3N~ 400V 50Hz (1~ 230V 50Hz)			3N~ 400V 50Hz (1~ 230V 50Hz)		
Max. current	A	15.0 (22.5)			15.0 (22.5)		
Recommended fuse size	A	20.0 (25.0)			20.0 (25.0)		
Cable width (EN 60 335-1)[1]	mm^2	5 x 4.00 (3 x 6.00)			5 x 4.00 (3 x 6.00)		
Indoor/outdoor connection (shielded)[2*]	mm^2	2 x 0.75			2 x 0.75		

[1] It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and applicable standards.
[2] Performance values are stated for RCI-FSR cassette units in accordance with Eurovent benchmarks.
[V] Single-phase version

controls and compatible accessories (see the tab VRF TWIN controls)



Condensation drainage kit

DDB-26 (models IVX Prime and IVX Comfort 4 / 5 / 6 / 8 / 10 / 12 Hp)
DDB-12L (Comfort models 2 / 2.5 / 3 Hp)



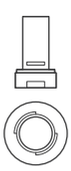
Multi kit

Micro VRF IVX Comfort

Performance, cooling	Unit	RAS-8HNCE	RAS-10HNCE	RAS-12HNC
Nominal Cooling capacity (min-max)	kW	20.00 (8.00 - 22.40)	25.00 (10.00 - 28.00)	30.00 (11.20 - 33.50)
Rated power input in Cooling mode (5*)	kW	5.95	8.28	11.67
EER	-	3.36	3.02	2.57
SEER (average climate) (3)	-	6.79	6.61	5.30
Seasonal energy class	-	-		
Working range in cooling	-	(OPT -15°C)* -5°C / 46°C (DB)		
Performance, heating				
Nominal Heating capacity (min-max)	kW	22.40 (6.30 - 28.00)	28.00 (8.00 - 35.00)	33.50 (9.00 - 37.50)
Rated power input heating	kW	5.88	7.71	9.46
COP	-	3.81	3.63	3.54
SCOP (average climate) (3)	-	4.19	3.79	3.66
Seasonal energy class	-	-		
Working range in heating	-	-20°C / 15°C (WB)		
Technical features				
Airflow (cooling)	m^3/h	7620	8040	9780
Sound pressure in Cooling (night mode)	dB(A)	57 (55)	58 (56)	59 (56)
Sound power	dB(A)	76		77
Net weight	kg	136	138	168
Dimensions (H x L x D)	mm	1380 x 950 x 370		1650 x 1100 x 390
Min. power of indoor unit	Hp	1.8		
Number of units that can be connected (min - max)	-	1 - 4		
Connectable index (min.-max.)	-	See following page		
Compressor	-	SCROLL Inverter		
Refrigeration characteristics				
Max. length / additional charge	m/g/m	100 / to be calculated according to technical documentation		
Initial refrigerant charge	kg	5.7	6.2	6.7
Pre-charged for	m	30		
Max. level difference (outdoor unit above / below)	m	30 / 20		
Diameter of pipes (Liq / Gas)	inches	3/8 - 1 1/8 (1)	1/2 - 1 1/8	
Refrigerant	-	R410A		
Electrical features, outdoor unit				
Power supply	-	3N ~ 400V 50Hz		
Max. current	A	24		
Recommended fuse size	A	32		
Cable width (EN 60 335-1) (4*)	mm^2	5 x 6.00		
Indoor/outdoor connection (shielded)) (2*)	mm^2	2 x 0.75		

* To ensure cooling mode at -15°C, use the "cooling only" and "master/slave" switch settings.
(1*) If longer than 70 m, halve the diameter of the liquid pipe.
(2*) Shielding must be renewed every 300 m.
(3) Performance values are stated for RCI-FSN4 cassette units in accordance with Eurovent benchmarks.
(4) Data shown is for indication purposes only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.
(V) Single-phase version.

controls and compatible accessories (see the tab VRF TWIN controls)



Condensation drainage kit

DDB-26 (IVX Comfort models 4 / 5 / 6 / 8 / 10 / 12 Hp) DDB-12L (Comfort models 2 / 2.5 / 3 Hp)



Multi kit

Installation rules
Micro VRF (IVX Prime and IVX Comfort)

Quantity of indoor units

Outdoor unit (Hp)	4	5	6	8	10	12
Max. number of indoor units	4*			4		
Min. power of indoor unit	0.8			1.8		

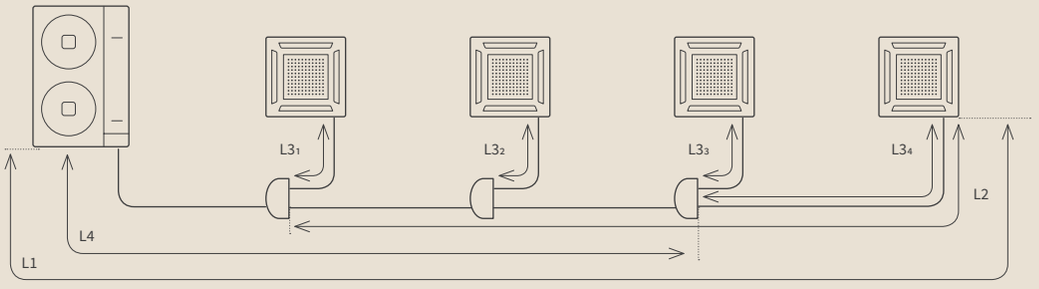
Permitted connection rate

External unit	Hp	4	5	6	8	10	12
Max. number of indoor units	1	90~115%			90~115%		
	2	3.6 to 4.6 Hp	4.5 to 5.75 Hp	5.4 to 6.9 Hp	7.2 to 9.2 Hp	9 to 11.5 Hp	10.8 to 13.8 Hp
	3 or 4	90~100%					
		3.6 to 4 Hp	4.5 to 5 Hp	5.4 to 6 Hp			

Units 4 to 12 Hp: permitted installation (1 to 4 indoor units)

Installation with multikits. 1 main line. Constant diameter.





Installing 3 Hp outdoor units is not permitted

External unit		Hp	4	5	6	8	10	12
Max. length between outdoor unit and the furthest indoor unit	Actual length	m	75	75		100		
	Equivalent length	m	95	95		125		
Max. level difference outdoor unit to indoor unit (H) (outdoor unit above/below)		m	30/20					
Max. level difference from indoor unit to indoor unit		m	3					
Max. level difference from Multikit to indoor unit / Multikit to Multikit		m	3					
Total length of the pipe		m	85 (with 2, 3, or 4 indoor units)	85 (with 2, 3, or 4 indoor units)		100	145	
Max. length of indoor unit to Multikit		m	10			15		
Max. length of first Multikit to indoor unit		m	15			25		
Length of main branch A		m	A > B, C, D, E, F, G					
Max. imbalance between branches	B-C	m	< 10m					

Multikit part numbers		Hp	E-102SN4	E-162SN4	
Diameter of the main line			Constant diameter		
Diameter of outdoor unit - first multikit	Liq/Gas	-	3/8 - 5/8	3/8** - 1 1/8	1/2 - 1 1/8

Power of indoor unit	Hp	< 1.5	1.8 to 2	2.3 to 6
Diameter of the indoor unit multikit	-	1/4 - 1/2	1/4 - 5/8	3/8 - 5/8

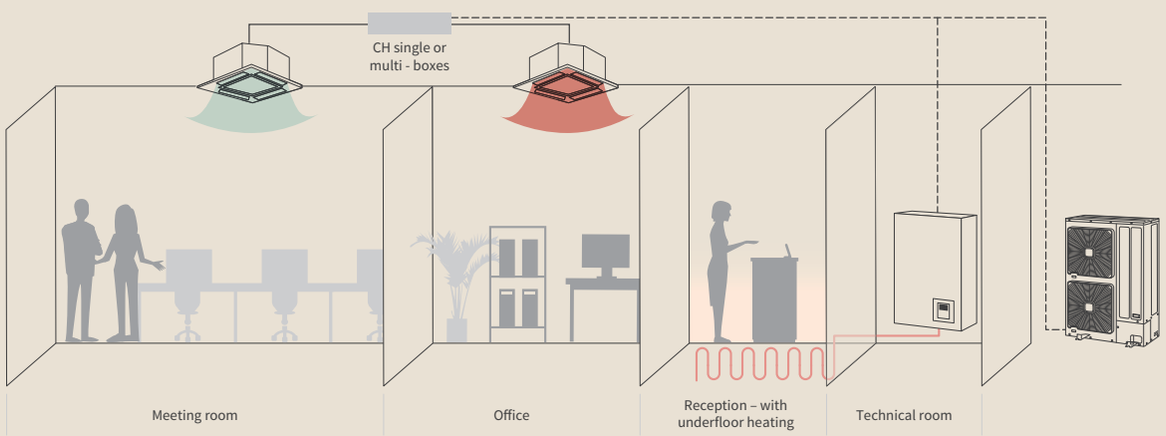
Note: It is not possible to connect 8 Hp or 10 Hp indoor units.
* Caution: When connecting RCI cassette units, the max. number is limited to two on 6 Hp model. **If the pipe is longer than 70m, use a 1/2" liquid line instead of 3/8".

Benefits
VRF SET FREE Mini

1 Choice of 2-pipe / 3-pipe (8 to 12 Hp)



EXCLUSIVE TO HITACHI

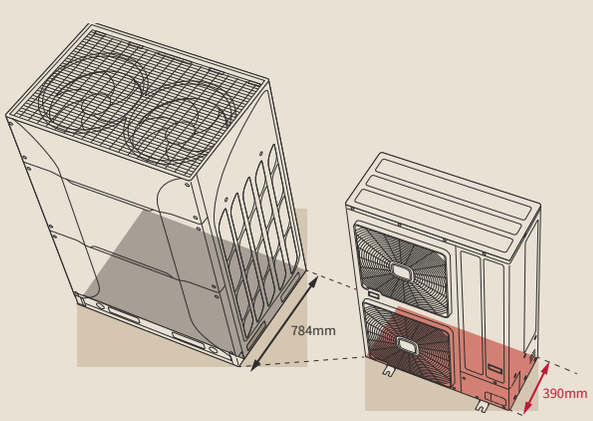


Hitachi has redefined mini VRF with its sideflow heat recovery system offering unparalleled comfort and flexibility. The new SET FREE Mini range from 8 to 12 Hp is exclusively compatible with a 2-pipe or 3-pipe installation and both from the same universal outdoor.

The SET FREE Mini is perfect when the outdoor space is limited but simultaneous heating and cooling is still required.

2 The most compact 3-pipe mini VRF in the world

-37% FOOTPRINT



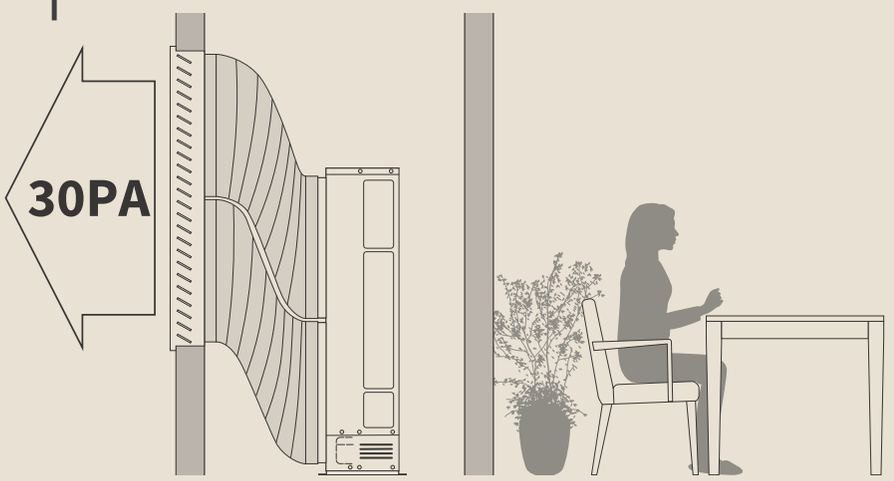
With its greatly reduced footprint, the SET FREE Mini can be installed discreetly for maximum discretion.

3 High number of indoor units that can be connected

Outdoor unit (Hp)	Number of indoor units that can be connected
4	13
5	16
6	18
8	26
10	32
12	39

The new SET FREE Mini can connect up to 39 indoor units! **Exclusive:** even more flexibility with a wide choice of units from 0.4Hp.

4 External static pressure available



Thanks to the external static pressure now available, our SET FREE Mini units can be installed inside a plant room while preserving the aesthetics of your buildings.

5 Compatible with all Set free indoor units with the Gentle Cool air off setting for more comfort

GENTLE COOL

The GENTLE COOL air off temperature setting, accessible on the wired remote control PC-ARFP1E, adjusts the minimum blown air off temperature for your comfort. In summer, cold drafts are avoided as you can set the air off temperature to the maximum setting.

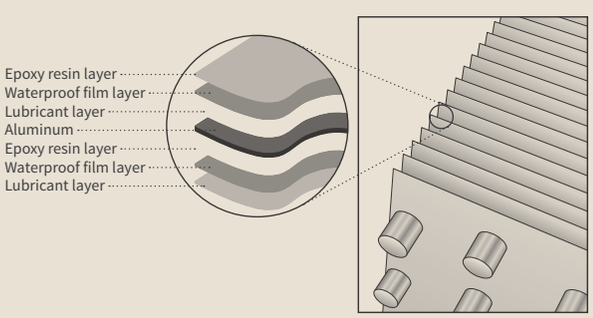


VRF SET FREE Mini



Advanced anti-corrosion treatment

With its triple coating, the SET FREE MINI offers the best protection on the market for use in tough environments.



Precise temperature control is maintained with Smooth Drive Control

Ultra-precise compressor frequency control (0.1Hz) ensures optimum outdoor unit performance under partial loads and a consistent indoor temperature. This new feature allows a single 1.1kW (0.4Hp) unit to operate on its own if required.

Smart Defrost

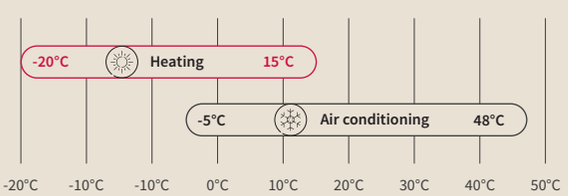
The smart defrost feature ensures a longer heating period without defrosting. This period automatically adjusts to the defrosting time of previous cycles and can extend up to 240 minutes, improving the comfort level as well as the heating capacity.

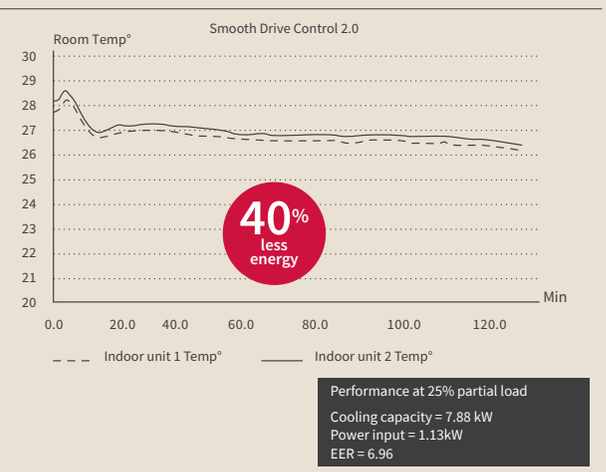
Easier maintenance

Direct access to the 7-segment display to perform tests and diagnostics. Real-time operating conditions and installation error codes are displayed for ease of servicing.

Large operating range

Outside temperature operating range

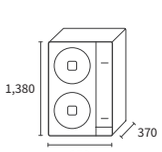




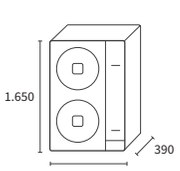
Performance at 25% partial load

Cooling capacity = 7.88 kW
Power input = 1.13kW
EER = 6.96

Outdoor units



SET FREE Mini S
RAS-4FS(V)NME
RAS-5FS(V)NME
RAS-6FS(V)NME

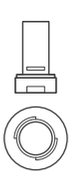


SET FREE Mini L
RAS-8FSXNME
RAS-10FSXNME
RAS-12FSXNME

VRF SET FREE Mini S and L

Performance, cooling		Unit	S RAS-4FS(V)NME	S RAS-5FS(V)NME	S RAS-6FS(V)NME	L RAS-8FSXNME	L RAS-10FSXNME	L RAS-12FSXNME
Nominal Cooling capacity		kW	12.10	14.00	16.00	22.40	28.00	33.50
Rated power input cooling		kW	2.97	3.26	4.35	6.25	7.27	9.36
EER		-	4.07	4.29	3.68	3.60	3.85	3.58
SEER Three-phase / Single-phase		-	6.61 / 6.67	6.61 / 6.64	6.37 / 6.40	7.59	8.31	8.26
Working range in Cooling		-	-5°C / 48°C (DB)					
Performance, heating								
Nominal Heating capacity		kW	12.50	16.00	18.00	25.00	31.50	37.50
Rated power input heating		kW	2.89	3.57	4.30	5.32	6.89	9.15
Heating capacity at -7°C		kW	8.6	10.8	12.0	18.6	21.5	25.5
Heating capacity at -15°C		kW	7.3	8.7	10.0	16.2	17.7	21.1
COP		-	4.33	4.48	4.19	4.70	4.57	4.10
SCOP		-	4.15	4.40	4.25	5.62	4.72	4.66
Working range in heating		-	-20°C / 15°C (WB)					
Technical features								
Airflow		m^3/h	8,700			9,900	11,100	
Available static pressure		Pa	30					
Number of fans		-	2					
Sound power in Cooling mode		dB(A)	69	72	74	76	77	
Sound pressure in Cooling mode		dB(A)	52		53	55	59	60
Dimensions (H x L x D)		mm	1380 x 950 x 370			1650 x 1100 x 390		
Net weight of single-phase / three-phase		kg	114 / 115	118 / 119		- / 188	- / 194	- / 196
Type of compressor		-	Scroll Inverter					
Compressor number		-	1					
Max. number of connectible units		-	13	16	18	26	32	39
Connection ratio (min - max)		%	50-130					
Refrigeration characteristics								
Refrigerant		-	R410A					
Refrigerant charge		kg	3.7	4.1	4.1	4.2	5.5	
Diameter of pipes	Liquid	inches	3/8					1/2
	Low pressure gas	inches	-			3/4	7/8	1 1/8
	High pressure gas	inches	5/8			5/8	3/4	7/8
Electrical features								
Power supply	Three-phase (Single-phase)	-	3N ~400V 50 Hz (1 ~230V 50 Hz)			3N ~400V 50 Hz		
Max. current	Three-phase (Single-phase)	A	16 (23.5)			18	19	23
Recommended fuse size		A	20 (25)			20		25
Indoor/outdoor connection (shielded)		mm	2 x 0.75					

controls and compatible accessories (see the tab VRF TWIN controls)



Condensate drain kit

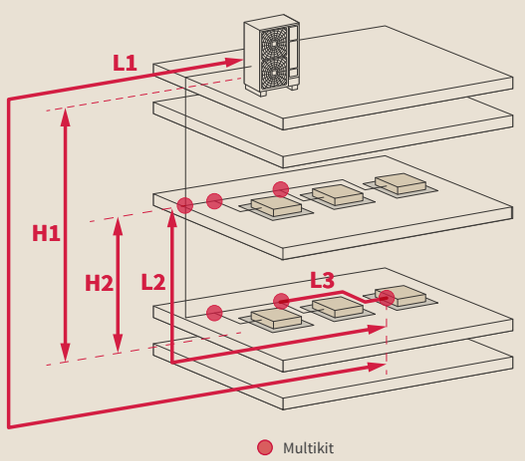
DBS-26

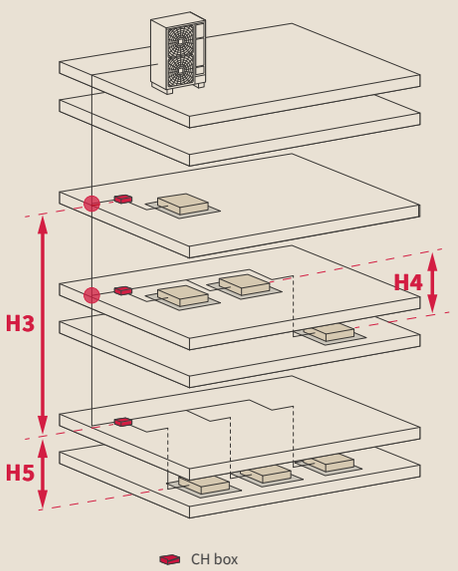


Multi kit

Piping rules
VRF SET FREE Mini

Installation flexibility





				4 to 6 Hp	8 to 12 Hp	8 to 12 Hp (heat recovery)
Max. length of piping	Total		-	180	500	500
	Between outdoor unit and the furthest indoor unit		L1	85	125	125
	Between the first multikit branch and the furthest indoor unit		L2	40	90*	90*
	Between the multikit and the indoor unit		L3	15	40	40
	Between the CH box and the indoor unit		-	-	-	40
Max. level difference	Between the outdoor unit and the indoor unit	Outdoor unit above the indoor unit	H1	30	50	50
		Indoor unit above the outdoor unit	-	30	40	40
	Between indoor units		H2	15	15	15
	Between CH boxes		H3	-	-	15
	Between indoor units connected to a CH box (same branch)		H4	-	-	4
	Between the CH box and the indoor unit		H5	-	-	15

(*) 40 m over the recommended number of indoor units.

Part numbers of piping accessories

Multikit



2P	3P
E-102SN4	E-102XN3
E-162SN4	E-162XN3

Header



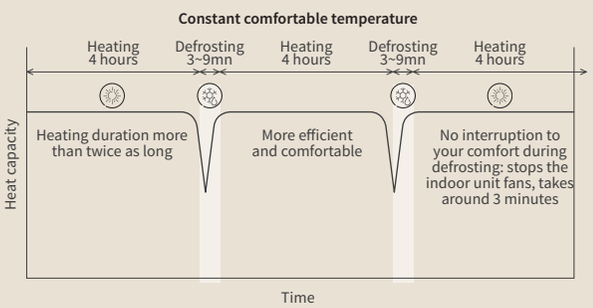
2P	3P
MH-84AN1	MH-108XN
MH-108AN	-

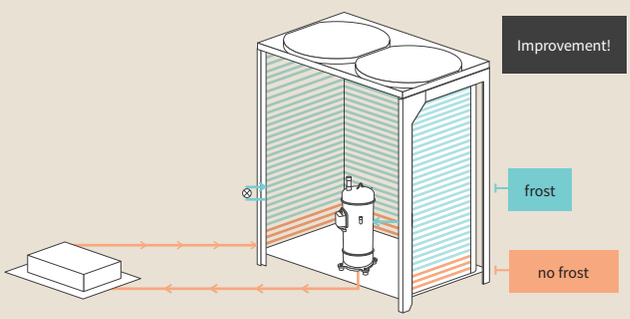


Benefits
VRF SET FREE Sigma

1 Smart Defrost for uninterrupted comfort

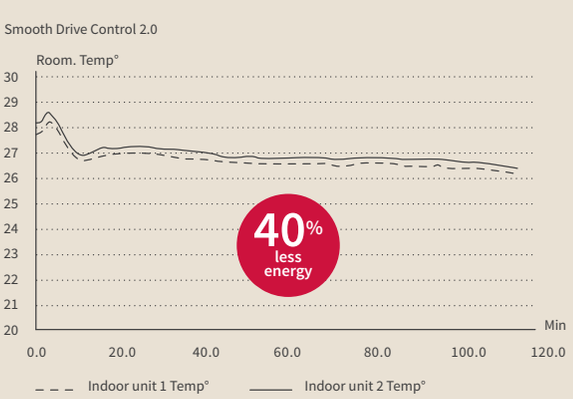
Smart defrost optimizes the defrosting cycle and stops the indoor unit fans during the defrost to ensure there are no cold drafts.





SIGMA's new smart defrost mode provides a defrost-free heating period that is twice as long as the previous model. This period automatically adjusts to the defrosting time of previous cycles and can extend up to 240 minutes. The system also monitors the level of ice buildup when in Heating mode. A hot gas bypass continuously defrosts the underside of the outdoor unit heat exchanger to ensure that when units go into defrost they complete the process within 3 minutes.

2 Smooth drive control



Performance at 25% partial charge

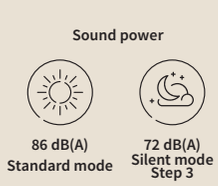
Cooling capacity = 7.88 kW
Power input = 1.13kW
EER = 6.96

Ultra-precise compressor operation system adjusts the capacity in steps of 0.1Hz. This ensures the best outdoor unit performance under partial loads and a consistent indoor temperature. This new feature can, among other things, individually run just one 0.4 Hp (1.1 kW) unit.

3 Variable evaporation temperature

Smart Control automatically changes the evaporation temperature according to the actual heating requirements of the premises and the outside temperature, for fantastic energy savings.

4 Very low noise level

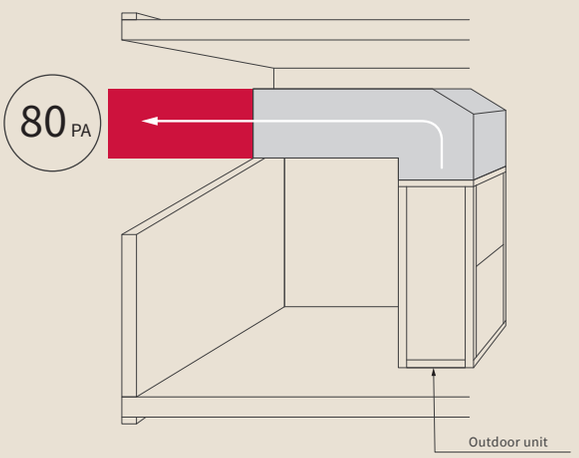


	18 Hp	42 Hp
Silent mode	Sound power	Sound power
Standard	86	90
Step 1	82.5	86
Step 2	77.5	81
Step 3	72.5	76

So it fits perfectly into any type of environment, the SET FREE SIGMA comes with Silent mode as standard. This makes it the quietest VRF on the market.

* JOHNSON CONTROLS - HITACHI AIR CONDITIONING EUROPE SAS participates in the Eurovent Certification Program for AC / VRF / LCP-HP categories; data from certified models are listed in the Eurovent Annual Report (www.eurovent-certification.com).

5 Versatile

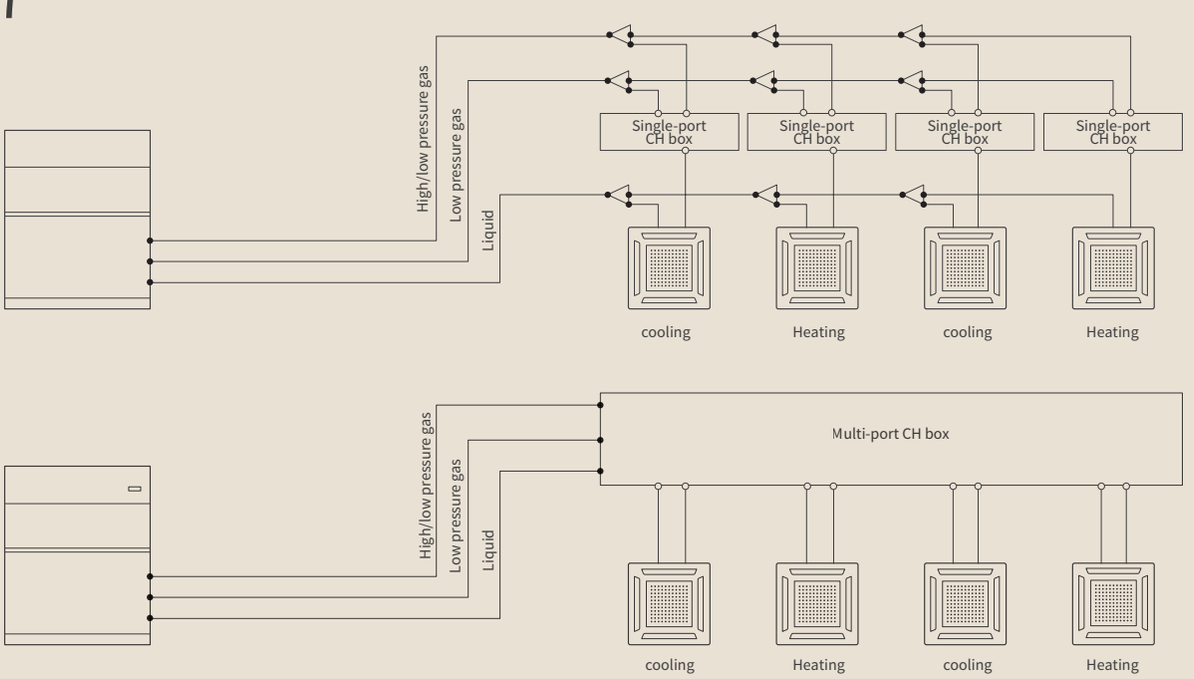


Thanks to 3 static pressure settings: 30 Pa, 60 Pa, 80 Pa, the SET FREE SIGMA can be installed both outside and inside a plant room to meet the needs of even the most complex setups.

6 Energy saving

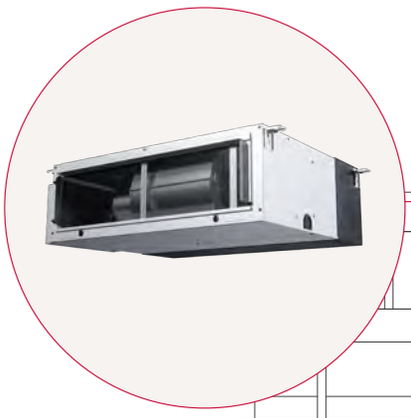
With ambitious climate change policies aiming to reduce emissions to net zero by 2050 reducing the energy consumption of buildings will be essential. The SET FREE SIGMA was designed to accompany this green commitment with its very high energy performance and its 0.4Hp (1.1kW) indoor units.

7 Heat recovery systems that are easy to install

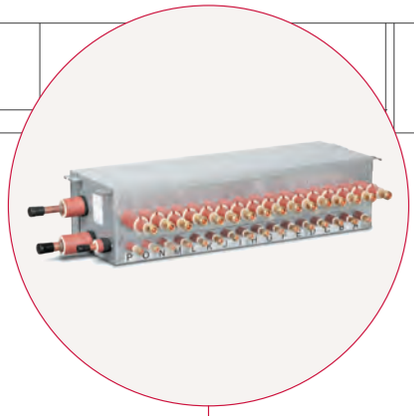


A wide range of CH boxes are available in both single and multi versions with up to 16 ports for maximum flexibility; the lightest and most compact on the market. These boxes do not require a drain connection, making the installer's work much easier. Always with user comfort in mind, these boxes are also very quiet.

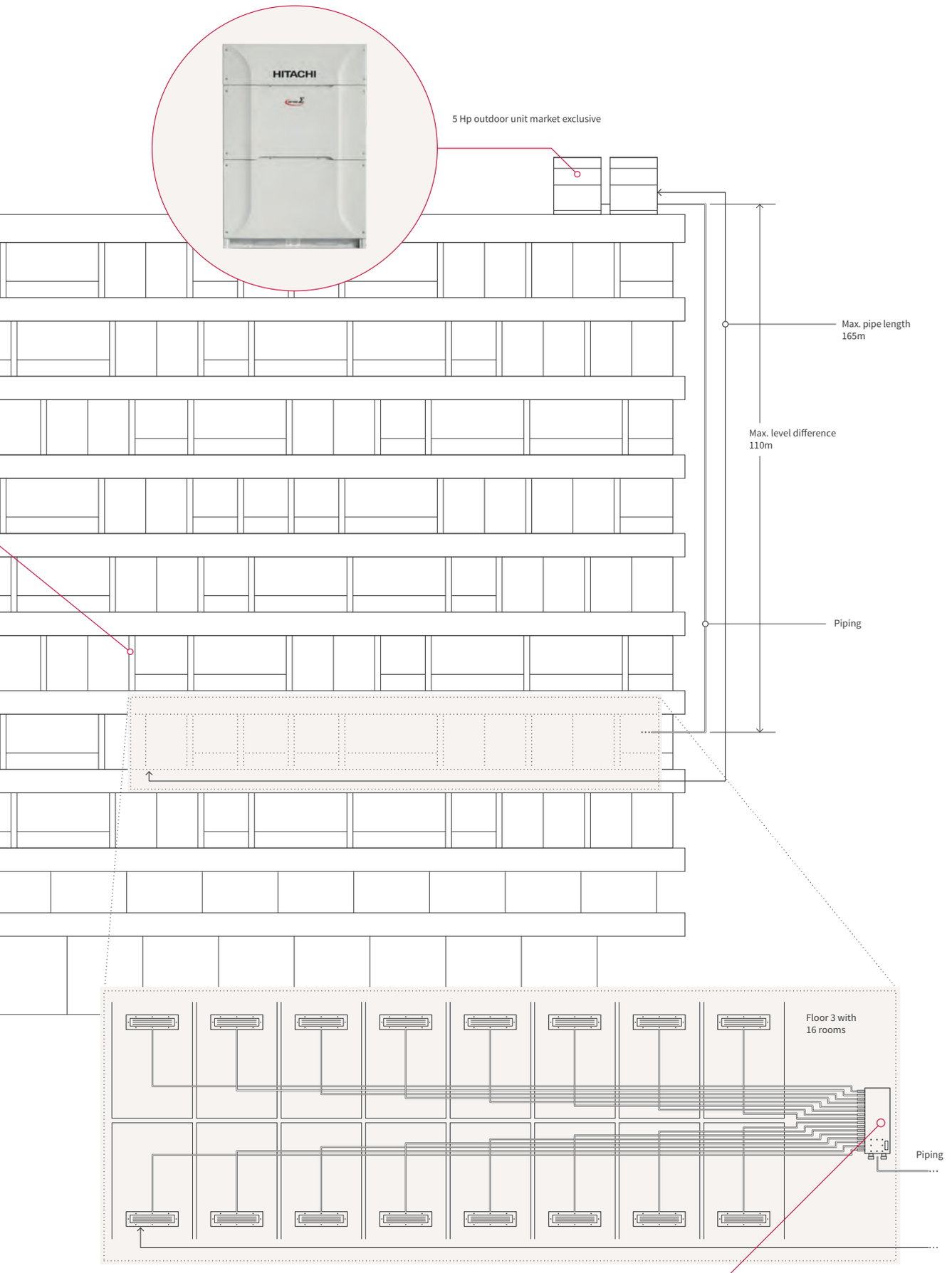
VRF SET FREE SIGMA with heat recovery



0.4 Hp indoor unit Ideal for low-consumption buildings



CH box with 16 ports


HITACHI
5 Hp outdoor unit market exclusive
Max. pipe length
165m
Max. level difference
110m
Piping
Floor 3 with
16 rooms
Piping

VRF SET FREE
Sigma Standard

GENTLE COOL | SEER 7.50 | SCOP 4.48 | 2 PIPES OR | 3 PIPES &



The widest single-module range on the market

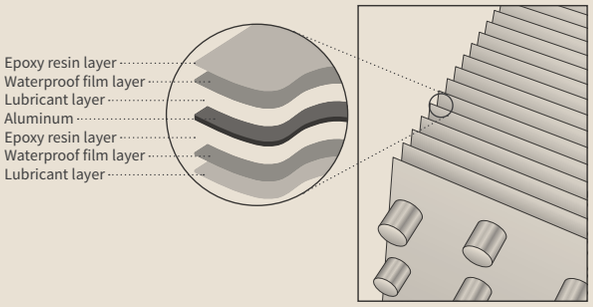
Compact and lightweight the SET FREE SIGMA Standard Hitachi range is exclusively available in single modules from 8 Hp to 24 Hp models.

Exclusive solution

3-pipe / 2-pipe universal outdoor unit meets the needs of both energy recovery applications and reversible heat pump ones from the same outdoor, allowing for sites to be retrofitted from heat pump to heat recovery or vice versa without having to change the outdoor.

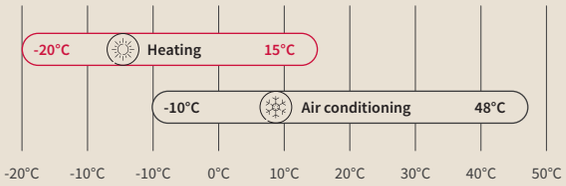
Advanced anti-corrosion treatment

With its triple coating, SIGMA VRF offers the best protection on the market for use in tough environments.



Large operating ranges

Outside temperature operating range

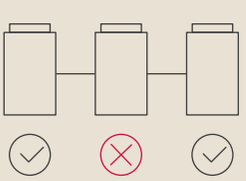


Variable evaporation temperature

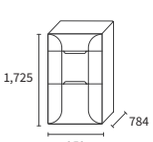
The control logic built into SIGMA VRF units saves more energy and increases user comfort the whole year round. If the thermal requirements of the internal rooms are low then the system will automatically select a high evaporating temperature which will increase seasonal efficiency and reduce cold drafts. If the thermal needs of indoor rooms change, like a meeting room is needed with a high occupancy level, the system will automatically detect this and decrease the evaporating temperature. This will ensure the cooling load of the room can be met quickly and occupants remain comfortable. This smart refrigerant control is complemented by the GENTLE COOL setting, in which users set the minimum air off temperature per fan coil to avoid cold drafts at all times, SIGMA is now the most comfortable VRF on the market.

Backup function

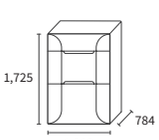
An outdoor unit can be isolated for maintenance while other units continue to operate.



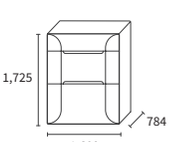
Outdoor units



RAS-8FSXNSE
RAS-10FSXNSE
RAS-12FSXNSE



RAS-14FSXNSE
RAS-16FSXNSE
RAS-18FSXNSE



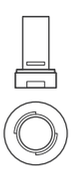
RAS-20FSXNSE
RAS-22FSXNSE
RAS-24FSXNSE

VRF SET FREE Sigma Standard

Performance, cooling	Unit	RAS-8FSXNSE	RAS-10FSXNSE	RAS-12FSXNSE	RAS-14FSXNSE	RAS-16FSXNSE	RAS-18FSXNSE	RAS-20FSXNSE	RAS-22FSXNSE	RAS-24FSXNSE
Nominal Cooling capacity	kW	22.4	28	33.5	40	45	50	56	61.5	67
Rated power input Cooling	kW	5.40	7.27	8.89	12.12	13.85	14.9	18.6	20.4	22.4
EER	-	4.15	3.85	3.77	3.30	3.25	3.35	3.01	3.01	2.99
SEER	-	7.50	7.17	6.97	7.47	7.30	6.96	6.29	6.76	6.20
Working range in Cooling	-	-10°C / 48°C DB								
Performance, heating										
Nominal Heating capacity	kW	25	31.5	37.5	45	50	56	63	69	77.5
Rated power input Heating	kW	5.26	6.89	9.15	12.03	15	17	19	22	23
Power at -7°C [1]	kW	19.92	25.1	26.46	33.08	35.57	39.73	44.70	48.95	51.7
Power at -15°C (or -20°C) [1]	kW	15.8	19.8	20.3	25.5	27	30.20	34	37.30	39.5
COP	-	4.75	4.57	4.10	3.74	3.37	3.29	3.35	3.19	3.4
SCOP	-	4.17	4.11	4.29	4.48	4.42	4.18	4.14	4.43	4.43
Working range in Heating	-	-20°C / 15°C WB								
Technical features										
Airflow	m³/h	9900	10200	11400	14340	15360	15360	19740	19740	20880
Adjustable static pressure	Pa	30 / 60 / 80								
Number of fans	-	1				2				
Sound power	dB(A)	80	82	82	85	85	86	86	84	86
Sound pressure [2] (Night mode)	dB(A)	58 (53)	60 (53)	59 (54)	63 (57)	63 (57)	65 (57)	65 (59)	64 (59)	66 (59)
Dimensions (H x L x D)	mm	1725 x 959 x 784			1725 x 1219 x 784			1725 x 1609 x 784		
Net weight	kg	210		233	287	329	330	382	398	399
Type of compressor	-	DC Scroll Inverter								
Compressor number	-	1				2				
Max. number of indoor units that can be connected	-	26	32	39	45	52	58	64		
Connection ratio (min - max) [3]	-	50 - 130%								
Refrigeration characteristics										
Refrigerant	-	R410A								
Refrigerant charge	kg	5		7.20	8.90	9.90	10.70	11.30	11.30	11.6
Diameter of pipes – Liquid	inches	3/8		1/2		1/2	5/8			
Diameter of pipes – Low pressure gas	inches	3/4	7/8	1		1 - 1/8				
Diameter of pipes – High pressure gas	inches	5/8	3/4	7/8					1	
Electrical features										
Power supply	-	3N - 400V 50Hz								
Max. current	A	15.50	21.50	24	29.50	33	37.50	44.50	45	53
Recommended fuse size	A	20.0	25.0		32.0	40.0		50		63
Indoor/outdoor connection (shielded) [4]	mm	2 x 0.75								

[1] When set to 20°C with a connection rate of 100%. [2] Anechoic chamber readings taken 1 m from the front of the appliance.
[3] Depending on the application; refer to the technical documentation. [4] Shielding must be renewed every 300 m.

controls and compatible accessories (see the tab VRF TWIN controls)



Condensate drain kit

DBS-TP10A

Compatible with
FSXNSE and FSXNPE



Multi kit

See page 264

		RAS-26FSXNSE	RAS-28FSXNSE	RAS-30FSXNSE	RAS-32FSXNSE	RAS-34FSXNSE	RAS-36FSXNSE	RAS-38FSXNSE	RAS-40FSXNSE
Unit 1 name		RAS-12FSXNSE	RAS-12FSXNSE	RAS-12FSXNSE	RAS-14FSXNSE	RAS-16FSXNSE	RAS-18FSXNSE	RAS-14FSXNSE	RAS-18FSXNSE
Unit 2 name		RAS-14FSXNSE	RAS-16FSXNSE	RAS-18FSXNSE	RAS-18FSXNSE	RAS-18FSXNSE	RAS-18FSXNSE	RAS-24FSXNSE	RAS-22FSXNSE
Performance, cooling	**Unit**								
Nominal Cooling capacity	kW	73	77.5	85	90	95	100	106	112
Rated power input Cooling	kW	23.38	22.44	24.24	29.58	28.77	29.85	36.71	35.52
EER	-	3.12	3.45	3.51	3.04	3.30	3.35	2.89	3.15
SEER	-	7.30	7.10	7.11	7.36	7.18	7.20	6.63	6.93
Working range in Cooling	-	-10°C / 48°C DB							
Performance, heating									
Nominal Heating capacity	kW	82.5	90	95	100	106	112	118	125
Rated power input Heating	kW	21.18	24.67	26.59	28.77	31.86	34.04	33.55	38.65
Power at -7°C [1]	kW	59.54	63.70	67.25	72.09	76.41	79.46	81.66	88.68
Power at -15°C (or -20°C) [1]	kW	45.8	48.65	51.31	55.15	58.46	60.40	62.61	67.50
COP	-	3.90	3.65	3.57	3.48	3.33	3.29	3.52	3.23
SCOP	-	4.39	4.35	4.22	4.30	4.28	4.18	4.45	4.30
Working range in Heating	-	-20°C / 15°C WB							
Technical features									
Airflow	m^3/h	11140 + 14340	11140 + 15360		14340 + 15360	15360 + 15360		14340 + 20280	15360 + 19740
Adjustable static pressure	Pa	30 / 60 / 80							
Number of fans	-	3			4				
Sound power	dB(A)	87			89				88
Sound pressure [2] (Night mode)	dB(A)	64.50 (58)	64.50 (58.50)	66 (58)	67 (60)	67 (62)	68 (60)	68 (61)	67.50 (61.50)
Dimensions (H x L x D)	mm	1725 x 2198 x 784			1725 x 2458 x 784			1725 x 2848 x 784	
Net weight	kg	233 + 287	233 + 329	233 + 330	287 + 330	329 + 330	330 + 330	287 + 399	330 + 398
Type of compressor	-	DC Scroll Inverter							
Compressor number	-	2	3			4			
Max. number of indoor units that can be connected	-	64							
Connection ratio (min - max) [3]	-	50 - 130%							
Refrigeration characteristics									
Refrigerant	-	R410A							
Refrigerant charge	kg	16.1	17.1	17.9	19.6	20.6	21.4	20.5	22
Diameter of pipes – Liquid	inches	3/4							
Diameter of pipes – Low pressure gas	inches	1 - 1/4					1 - 1/2		
Diameter of pipes – High pressure gas	inches	1 - 1/8						1 - 1/4	
Electrical features									
Power supply	-	3N - 400V 50Hz							
Max. current	A	53	56.5	61	66.5	70.5	75	82.5	82
Recommended fuse size	A	63			80			100	
Indoor/outdoor connection (shielded) [4]	mm	2 x 0.75							

[1] When set to 20°C with a connection rate of 100%. [2] Anechoic chamber readings taken 1 m from the front of the appliance.
[3] Depending on the application; refer to the technical documentation. [4] Shielding must be renewed every 300 m.

		RAS-42FSXNSE	RAS-44FSXNSE	RAS-46FSXNSE	RAS-48FSXNSE	RAS-50FSXNSE	RAS-52FSXNSE	RAS-54FSXNSE
Unit 1 name		RAS-18FSXNSE	RAS-22FSXNSE	RAS-22FSXNSE	RAS-24FSXNSE	RAS-14FSXNSE	RAS-16FSXNSE	RAS-18FSXNSE
Unit 2 name		RAS-24FSXNSE	RAS-22FSXNSE	RAS-24FSXNSE	RAS-24FSXNSE	RAS-18FSXNSE	RAS-18FSXNSE	RAS-18FSXNSE
Unit 3 name		-	-	-	-	RAS-18FSXNSE	RAS-18FSXNSE	RAS-18FSXNSE
Performance, cooling	**Unit**							
Nominal Cooling capacity	kW	118	122	128	136	140	145	150
Rated power input Cooling	kW	37.65	40.53	42.67	45.48	44.5	43.7	44.78
EER	-	3.13	3.01	3	2.99	3.15	3.32	3.35
SEER	-	6.57	6.75	6.45	6.19	7.30	7.18	7.20
Working range in Cooling	-	-10°C / 48°C DB						
Performance, heating								
Nominal Heating capacity	kW	132	140	145	150	155	160	165
Rated power input Heating	kW	39.37	43.89	43.97	44.12	45.49	48.28	50.15
Power at -7°C [1]	kW	90.38	99.32	99.62	100.06	111.10	113.51	117.06
Power at -15°C (or -20°C) [1]	kW	68.9	75.58	76.01	76.45	84.81	86.32	88.98
COP	-	3.35	3.19	3.30	3.40	3.41	3.31	3.29
SCOP	-	4.31	4.42	4.43	4.43	4.26	4.25	4.18
Working range in Heating	-	-20°C / 15°C WB						
Technical features								
Airflow	m^3/h	15360 + 20880	19740 + 19740	19740 + 20880	20880 + 20880	14340 + 15360 + 15360		
Adjustable static pressure	Pa	30 / 60 / 80						
Number of fans	-	4				**6**		
Sound power	dB(A)	89	87	88	89	90	90	91
Sound pressure [2] (Night mode)	dB(A)	68.50 (61)	67 (62)	68 (62)	69 (62)	69 (62)	69 (62)	70 (62)
Dimensions (H x L x D)	mm	1725 x 2848 x 784	1725 x 3238 x 784	1725 x 3238 x 784	1725 x 3238 x 784	1725 x 3697 x 784	1725 x 3697 x 784	1725 x 3697 x 784
Net weight	kg	330 + 399	398 + 398	398 + 399	399 + 399	287 + 330 + 330	329 + 330 + 330	330 + 330 + 330
Type of compressor	-	DC Scroll Inverter						
Compressor number	-	4				5	6	
Max. number of indoor units that can be connected	-	64						
Connection ratio (min - max) [3]	-	50 - 130%						
Refrigeration characteristics								
Refrigerant	-	R410A						
Refrigerant charge	kg	22.30	22.60	22.90	23.20	30.30	31.30	32.10
Diameter of pipes – Liquid	inches	3/4						
Diameter of pipes – Low pressure gas	inches	1 - 1/2						
Diameter of pipes – High pressure gas	inches	1 - 1/4						
Electrical features								
Power supply	-	3N - 400V 50Hz						
Max. current	A	90.50	89.50	98	106	104	108	112
Recommended fuse size	A	100			125			
Indoor/outdoor connection (shielded) [4]	mm	2 x 0.75						

[1] When set to 20°C with a connection rate of 100%. [2] Anechoic chamber readings taken 1 m from the front of the appliance.
[3] Depending on the application; refer to the technical documentation. [4] Shielding must be renewed every 300 m.

To find out the features of **56 Hp** to **96 Hp** outdoor units, please refer to the technical documentation.

Pipe kits
VRF SET FREE Sigma Standard

Composition of multi-module outdoor units

Outdoor unit	2-pipe combination	Multikit
RAS-8FSXNSE	Single module	-
RAS-10FSXNSE	Single module	-
RAS-12FSXNSE	Single module	-
RAS-14FSXNSE	Single module	-
RAS-16FSXNSE	Single module	-
RAS-18FSXNSE	Single module	-
RAS-20FSXNSE	Single module	-
RAS-22FSXNSE	Single module	-
RAS-24FSXNSE	Single module	-
RAS-26FSXNSE	RAS-14FSXNSE - RAS-12FSXNSE	MC-21AN1
RAS-28FSXNSE	RAS-16FSXNSE - RAS-12FSXNSE	MC-21AN1
RAS-30FSXNSE	RAS-18FSXNSE - RAS-12FSXNSE	MC-21AN1
RAS-32FSXNSE	RAS-18FSXNSE - RAS-14FSXNSE	MC-21AN1
RAS-34FSXNSE	RAS-18FSXNSE - RAS-16FSXNSE	MC-21AN1
RAS-36FSXNSE	RAS-18FSXNSE - RAS-18FSXNSE	MC-21AN1
RAS-38FSXNSE	RAS-24FSXNSE - RAS-14FSXNSE	MC-21AN1
RAS-40FSXNSE	RAS-22FSXNSE - RAS-18FSXNSE	MC-21AN1
RAS-42FSXNSE	RAS-24FSXNSE - RAS-18FSXNSE	MC-21AN1
RAS-44FSXNSE	RAS-22FSXNSE - RAS-22FSXNSE	MC-21AN1
RAS-46FSXNSE	RAS-24FSXNSE - RAS-22FSXNSE	MC-21AN1
RAS-48FSXNSE	RAS-24FSXNSE - RAS-24FSXNSE	MC-21AN1
RAS-50FSXNSE	RAS-18FSXNSE - RAS-18FSXNSE - RAS-14FSXNSE	MC-30AN1
RAS-52FSXNSE	RAS-18FSXNSE - RAS-18FSXNSE - RAS-16FSXNSE	MC-30AN1
RAS-54FSXNSE	RAS-18FSXNSE - RAS-18FSXNSE - RAS-18FSXNSE	MC-30AN1

Outdoor unit	3-pipe combinations.	Multikit
RAS-8FSXNSE-3P	Single module	-
RAS-10FSXNSE-3P	Single module	-
RAS-12FSXNSE-3P	Single module	-
RAS-14FSXNSE-3P	Single module	-
RAS-16FSXNSE-3P	Single module	-
RAS-18FSXNSE-3P	Single module	-
RAS-20FSXNSE-3P	Single module	-
RAS-22FSXNSE-3P	Single module	-
RAS-24FSXNSE-3P	Single module	-
RAS-26FSXNSE-3P	RAS-14FSXNSE - RAS-12FSXNSE	MC-21XN1
RAS-28FSXNSE-3P	RAS-16FSXNSE - RAS-12FSXNSE	MC-21XN1
RAS-30FSXNSE-3P	RAS-18FSXNSE - RAS-12FSXNSE	MC-21XN1
RAS-32FSXNSE-3P	RAS-18FSXNSE - RAS-14FSXNSE	MC-21XN1
RAS-34FSXNSE-3P	RAS-18FSXNSE - RAS-16FSXNSE	MC-21XN1
RAS-36FSXNSE-3P	RAS-18FSXNSE - RAS-18FSXNSE	MC-21XN1
RAS-38FSXNSE-3P	RAS-24FSXNSE - RAS-14FSXNSE	MC-21XN1
RAS-40FSXNSE-3P	RAS-22FSXNSE - RAS-18FSXNSE	MC-21XN1
RAS-42FSXNSE-3P	RAS-24FSXNSE - RAS-18FSXNSE	MC-21XN1
RAS-44FSXNSE-3P	RAS-22FSXNSE - RAS-22FSXNSE	MC-21XN1
RAS-46FSXNSE-3P	RAS-24FSXNSE - RAS-22FSXNSE	MC-21XN1
RAS-48FSXNSE-3P	RAS-24FSXNSE - RAS-24FSXNSE	MC-21XN1
RAS-50FSXNSE-3P	RAS-18FSXNSE - RAS-18FSXNSE - RAS-14FSXNSE	MC-30XN1
RAS-52FSXNSE-3P	RAS-18FSXNSE - RAS-18FSXNSE - RAS-16FSXNSE	MC-30XN1
RAS-54FSXNSE-3P	RAS-18FSXNSE - RAS-18FSXNSE - RAS-18FSXNSE	MC-30XN1

Part numbers of pipe kit accessories

Multikit



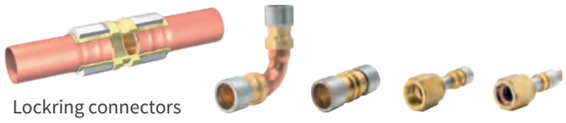
2 pipes	3 pipes
E-102SN4	E-52XN3
E-162SN4	E-102XN3
E-242SN3	E-162XN3
E-302SN3	E-202XN3
MW-NP2682A3	E-242XN3
	E-322XN3

Header



2 pipes	3 pipes
MH-84AN1	MH-108XN
MH-108AN	

Compatible accessories



Lockring connectors


LOVE COFFEE

VRF SET FREE
Sigma High-Efficiency

GENTLE COOL · SEER 8.33 · SCOP 5.06 · 2 PIPES OR · 3 PIPES &

EUROVENT CERTIFIED PERFORMANCE



Highly energy-efficient

Thanks to its seasonal energy efficiency performance (SEER 8.33 and SCOP 5.06), the High-Efficency Sigma range will guarantee running cost savings over standard ranges.

The biggest range

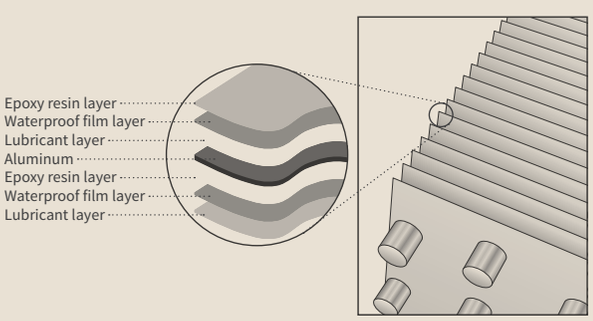
Exclusive to Hitachi with single modules from 5 Hp and a possible combination of up to 54 Hp for 3-pipe and 72 Hp for 2-pipe versions.

Exclusive solution

3-pipe / 2-pipe universal outdoor unit meets the needs of both energy recovery applications and reversible heat pump ones from the same outdoor, allowing for sites to be retrofitted from heat pump to heat recovery or vice versa without having to change the outdoor.

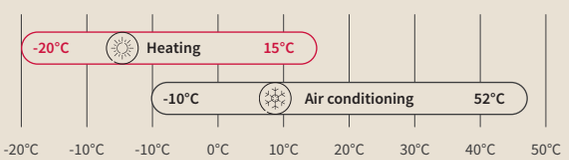
Advanced anti-corrosion treatment

With its triple coating, SIGMA VRF offers the best protection on the market for coastal locations.



Large operating ranges

Outside temperature operating range

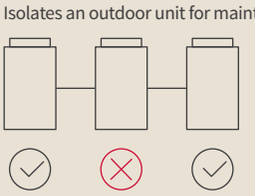


Variable evaporation temperature

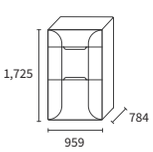
The control logic built into SIGMA VRF units saves more energy and increases user comfort the whole year round. If the thermal requirements of the internal rooms are low then the system will automatically select a high evaporating temperature which will increase seasonal efficiency and reduce cold drafts. If the thermal needs of indoor rooms change, like a meeting room is needed with a high occupancy level, the system will automatically detect this and decrease the evaporating temperature. This will ensure the cooling load of the room can be met quickly and occupants remain comfortable. This smart refrigerant control is complemented by the GENTLE COOL setting, in which users set the minimum air off temperature per fan coil to avoid cold drafts at all times,SIGMA is now the most comfortable VRF on the market.

Backup function

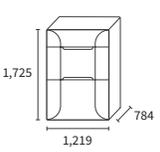
Isolates an outdoor unit for maintenance while other units continue to operate.



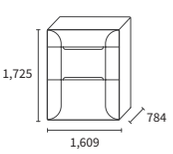
Outdoor units



RAS - 5FSXNPE
RAS - 6FSXNPE



RAS - 8FSXNPE
RAS - 10FSXNPE
RAS - 12FSXNPE
RAS - 14FSXNPE



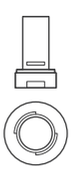
RAS - 16FSXNPE
RAS - 18FSXNPE

VRF SET FREE Sigma High-Performance

Performance, cooling	Unit	RAS-5FSXNPE	RAS-6FSXNPE	RAS-8FSXNPE	RAS-10FSXNPE	RAS-12FSXNPE	RAS-14FSXNPE	RAS-16FSXNPE	RAS-18FSXNPE
Nominal Cooling capacity	kW	14	16	22.4	28	33.5	40	45	50
Rated power input Cooling	kW	2.90	3.37	5.05	6.18	8.44	11.53	11.51	12.79
EER	-	4.82	4.75	4.44	4.53	3.97	3.47	3.91	3.91
SEER	-	8.33	8.00	7.97	8.06	7.91	7.69	7.76	7.60
Working range in Cooling	-	-10°C / 52°C DB							
Performance, heating									
Nominal Heating capacity	kW	16.00	18.00	25.00	31.50	37.5	45	50	56
Rated power input Heating	kW	2.80	3.52	5.08	6.65	8.01	10.84	12.92	14.97
Power at -7°C [1]	kW	13.38	15.04	20.92	25.10	27.78	34.93	40.06	41.46
Power at -15°C (or -20°C) [1]	kW	10.70	12.10	16.80	19.80	21.40	30.20	31.50	31.90
COP	-	5.72	5.12	4.92	4.74	4.68	4.15	3.87	3.74
SCOP	-	5.06	4.58	4.55	4.73	4.81	4.63	4.84	4.81
Working range in Heating	-	-20°C / 15°C WB							
Technical features									
Airflow	m³/h	9000	10200	11100	13140		14580	19560	21720
Adjustable static pressure	Pa	30 / 60 / 80							
Number of fans	-	1		2					
Sound power	dB(A)	75	78	77	82	83	85	85	86
Sound pressure [2] (Night mode)	dB(A)	54 (49)	56 (51)	55 (50)	59 (54)	60 (55)	62 (57)	65 (60)	65 (60)
Dimensions (H x L x D)	mm	1725 x 959 x 784		1725 x 1219 x 784				1725 x 1609 x 784	
Net weight	kg	210		274	278	282	292	369	384
Type of compressor	-	DC Scroll Inverter							
Compressor number	-	1						2	
Max. number of indoor units that can be connected	-	16	19	26	32	39	45	52	58
Connection ratio (min - max) [3]	-	50 - 150%							
Refrigeration characteristics									
Refrigerant	-	R410A							
Refrigerant charge	kg	4.7	5	8.5	8.5	9.3	9.3	10	10.6
Diameter of pipes – Liquid	inches	3/8				1/2			5/8
Diameter of pipes – Low pressure gas	inches	5/8	3/4		7/8	1-1/8			
Diameter of pipes – High pressure gas	inches	1/2	5/8		3/4	7/8			
Electrical features									
Power supply	-	3N - 400V 50Hz							
Max. current	A	11.5	12.0	15.0	19.0	23.0	28.0	33.0	34.5
Recommended fuse size	A	16			20	25	32	40	
Indoor/outdoor connection (shielded) [4]	mm	2 x 0.75							

[1] When set to 20°C with a connection rate of 100%. [2] Anechoic chamber readings taken 1 m from the front of the appliance.
[3] Depending on the application; refer to the technical documentation. [4] Shielding must be renewed every 300 m.

Controls and compatible accessories (see the tab VRF TWIN controls)



Condensate drain kit

DBS-TP10A

Compatible with
FSXNSE and FSXNPE



Multi kit

See page 270

		RAS-20FSXNPE	RAS-22FSXNPE	RAS-24FSXNPE	RAS-26FSXNPE	RAS-28FSXNPE	RAS-30FSXNPE	RAS-32FSXNPE	RAS-34FSXNPE	RAS-36FSXNPE
Unit 1 name		RAS-10FSXNPE	RAS-10FSXNPE	RAS-12FSXNPE	RAS-10FSXNPE	RAS-12FSXNPE	RAS-12FSXNPE	RAS-14FSXNPE	RAS-16FSXNPE	RAS-18FSXNPE
Unit 2 name		RAS-10FSXNPE	RAS-12FSXNPE	RAS-12FSXNPE	RAS-16FSXNPE	RAS-16FSXNPE	RAS-18FSXNPE	RAS-18FSXNPE	RAS-18FSXNPE	RAS-18FSXNPE
Performance, cooling	**Unit**									
Nominal Cooling capacity	kW	56	61.5	67	73	77.5	85	90	95	100
Rated power input Cooling	kW	12.36	14.62	16.88	17.69	19.69	21.61	24.32	24.30	25.58
EER	-	4.53	4.21	3.97	4.13	3.94	3.93	3.70	3.91	3.91
SEER	-	8.06	7.97	7.91	7.92	7.71	7.49	7.62	7.83	7.60
Working range in Cooling	-	-10°C / 52°C B								
Performance, heating										
Nominal Heating capacity	kW	63	69	77.5	82.5	90	95	100	106	112
Rated power input Heating	kW	13.29	14.66	16.56	19.81	21.53	23.35	25.56	27.89	29.95
Power at -7°C [1]	kW	50.2	52.88	57.41	65.96	69.76	70.35	75.64	81.52	82.92
Power at -15°C (or -20°C) [1]	kW	39.6	41.2	44.23	51.93	54.39	54.16	61.49	63.40	63.80
COP	-	4.74	4.71	4.68	4.17	4.18	4.07	3.91	3.80	3.74
SCOP	-	4.76	4.76	4.81	4.78	4.82	4.71	4.63	4.72	4.64
Working range in Heating	-	-20°C / 15°C WB								
Technical features										
Airflow	m^3/h	13140 + 13140			13140 + 19560		13141 + 21720	14580 + 21720	19560 + 21720	21720 + 21720
Adjustable static pressure	Pa	30 / 60 / 80								
Number of fans	-	4								
Sound power	dB(A)	85	86	86	87		88	89		
Sound pressure [2] (Night mode)	dB(A)	62 (57)	62.5 5 (57.5)	63 (58)	66 (61)		66 (61)	67 (62)	68 (63)	
Dimensions (H x L x D)	mm	1725 x 2458 x 784				1725 x 2848 x 784			1725 x 3238 x 784	
Net weight	kg	278 + 278	278 + 282	282 + 282	278 + 369	282 + 369	282 + 384	297 + 384	369 + 384	384 + 384
Type of compressor	-	DC Scroll Inverter								
Compressor number	-	2			3				4	
Max. number of indoor units that can be connected	-	64								
Connection ratio (min - max) [3]	-	50 - 150%								
Refrigeration characteristics										
Refrigerant	-	R410A								
Refrigerant charge	kg	17	17.8	18.6	18.5	19.3	19.9	19.9	20.6	21.2
Diameter of pipes – Liquid	inches	5/8			3/4					
Diameter of pipes – Low pressure gas	inches	1-1/8			1-1/4					1-1/2
Diameter of pipes – High pressure gas	inches	7/8	1			1-1/8				
Electrical features										
Power supply	-	3N - 400V 50Hz								
Max. current	A	38.0	42.0	46.0	51.5	55.5	57.0	62.0	67.0	68.5
Recommended fuse size	A	40	50		63				80	
Indoor/outdoor connection (shielded) [4]	mm	2 x 0.75								

[1] When set to 20°C with a connection rate of 100%. [2] Anechoic chamber readings taken 1 m from the front of the appliance.
[3] Depending on the application; refer to the technical documentation. [4] Shielding must be renewed every 300 m.

		RAS-38FSXNPE	RAS-40FSXNPE	RAS-42FSXNPE	RAS-44FSXNPE	RAS-46FSXNPE	RAS-48FSXNPE	RAS-50FSXNPE	RAS-52FSXNPE	RAS-54FSXNPE
Unit 1 name		RAS-12FSXNPE	RAS-12FSXNPE	RAS-14FSXNPE	RAS-12FSXNPE	RAS-14FSXNPE	RAS-12FSXNPE	RAS-14FSXNPE	RAS-16FSXNPE	RAS-18FSXNPE
Unit 2 name		RAS-12FSXNPE	RAS-14FSXNPE	RAS-14FSXNPE	RAS-14FSXNPE	RAS-14FSXNPE	RAS-18FSXNPE	RAS-18FSXNPE	RAS-18FSXNPE	RAS-18FSXNPE
Unit 3 name		RAS-14FSXNPE	RAS-14FSXNPE	RAS-14FSXNPE	RAS-18FSXNPE	RAS-18FSXNPE	RAS-18FSXNPE	RAS-18FSXNPE	RAS-18FSXNPE	RAS-18FSXNPE
Performance, cooling	**Unit**									
Nominal Cooling capacity	kW	106	112	118	122	128	136	140	145	150
Rated power input Cooling	kW	28.12	31.11	34.01	32.36	35.29	34.65	37.10	37.08	38.36
EER	-	3.77	3.60	3.47	3.77	3.63	3.92	3.77	3.91	
SEER	-	7.67			7.64		7.61		7.75	7.60
Working range in Cooling	-	-10°C / 52°C DB								
Performance, heating										
Nominal Heating capacity	kW	118	125	132	140	145	150	155	160	165
Rated power input Heating	kW	26.40	29.14	31.80	34.2	36.41	38.09	40.27	42.34	44.12
Power at -7°C [1]	kW	88.98	95.73	102.47	105.30	110.57	114.09	116.36	121.47	122.17
Power at -15°C (or -20°C) [1]	kW	71.78	80.19	88.59	84.41	91.67	85.48	92.80	94.12	93.99
COP	-	4.47	4.29	4.15	4.09	3.98	3.94	3.85	3.78	3.74
SCOP	-	4.17	4.68	4.63	4.68	4.63	4.68	4.64	4.70	4.64
Working range in Heating	-	-20°C / 15°C WB								
Technical features										
Airflow	m^3/h	13140 + 13140 + 14580	13140 + 14580 + 14580	14580 + 14580 + 14580	13140 + 14580 + 21720	14580 + 14580 + 21720	13140 + 21720 + 21720	14580 + 21720 + 21720	19560 + 21720 + 21720	21720 + 21720 + 21720
Adjustable static pressure	Pa	30 / 60 / 80								
Number of fans	-	6								
Sound power	dB(A)	89			90					91
Sound pressure [2] (Night mode)	dB(A)	65.5 (60.5)	66 (61)	67 (62)	67.5 (62.5)	68 (63)	68.5 (63.5)	69 (64)	70 (65)	70 (65)
Dimensions (H x L x D)	mm	1725 x 3697 x 784			1725 x 4087 x 784		1725 x 4477 x 784		1725 x 4867 x 784	
Net weight	kg	282 + 282 + 297	282 + 297 + 297	297 + 297 + 297	282 + 297 + 384	297 + 297 + 384	282 + 384 + 384	297 + 384 + 384	369 + 384 + 384	384 + 384 + 384
Type of compressor	-	DC Scroll Inverter								
Compressor number	-	3			4		5		6	
Max. number of indoor units that can be connected	-	64								
Connection ratio (min - max) [3]	-	50 - 150%								
Refrigeration characteristics										
Refrigerant	-	R410A								
Refrigerant charge	kg	27.9			29.2	29.2	30.5		31.2	31.8
Diameter of pipes – Liquid	inches	3/4								
Diameter of pipes – Low pressure gas	inches	1 - 1/2								
Diameter of pipes – High pressure gas	inches	1 - 1/4								
Electrical features										
Power supply	-	3N - 400V 50Hz								
Max. current	A	73.5	78.5	83.0	85.0	89.5	91.0	96.0	101.0	103.0
Recommended fuse size	A	80			100				125	
Indoor/outdoor connection (shielded) [4]	mm	2 x 0.75								

[1] When set to 20°C with a connection rate of 100%. [2] Anechoic chamber readings taken 1 m from the front of the appliance.
[3] Depending on the application; refer to the technical documentation. [4] Shielding must be renewed every 300 m.
To find out the features of 56 Hp to 72 Hp outdoor units, please refer to the technical documentation.

Pipe kits
VRF SET FREE SIGMA High-Performance

Composition of multi-module outdoor units

Outdoor unit	2-pipe combination	Multikit
RAS-5FSXNPE	Single module	-
RAS-6FSXNPE	Single module	-
RAS-8FSXNPE	Single module	-
RAS-10FSXNPE	Single module	-
RAS-12FSXNPE	Single module	-
RAS-14FSXNPE	Single module	-
RAS-16FSXNPE	Single module	-
RAS-18FSXNPE	Single module	-
RAS-20FSXNPE	RAS-10FSXNPE - RAS-10FSXNPE	MC-20AN1
RAS-22FSXNPE	RAS-10FSXNPE - RAS-12FSXNPE	MC-20AN1
RAS-24FSXNPE	RAS-12FSXNPE - RAS-12FSXNPE	MC-20AN1
RAS-26FSXNPE	RAS-16FSXNPE - RAS-10FSXNPE	MC-21AN1
RAS-28FSXNPE	RAS-16FSXNPE - RAS-12FSXNPE	MC-21AN1
RAS-30FSXNPE	RAS-18FSXNPE - RAS-12FSXNPE	MC-21AN1
RAS-32FSXNPE	RAS-18FSXNPE - RAS-14FSXNPE	MC-21AN1
RAS-34FSXNPE	RAS-18FSXNPE - RAS-16FSXNPE	MC-21AN1
RAS-36FSXNPE	RAS-18FSXNPE - RAS-18FSXNPE	MC-21AN1
RAS-38FSXNPE	RAS-14FSXNPE - RAS-12FSXNPE - RAS-12FSXNPE	MC-30AN1
RAS-40FSXNPE	RAS-14FSXNPE - RAS-14FSXNPE - RAS-12FSXNPE	MC-30AN1
RAS-42FSXNPE	RAS-14FSXNPE - RAS-14FSXNPE - RAS-14FSXNPE	MC-30AN1
RAS-44FSXNPE	RAS-18FSXNPE - RAS-14FSXNPE - RAS-12FSXNPE	MC-30AN1
RAS-46FSXNPE	RAS-18FSXNPE - RAS-14FSXNPE - RAS-14FSXNPE	MC-30AN1
RAS-48FSXNPE	RAS-18FSXNPE - RAS-18FSXNPE - RAS-12FSXNPE	MC-30AN1
RAS-50FSXNPE	RAS-18FSXNPE - RAS-18FSXNPE - RAS-14FSXNPE	MC-30AN1
RAS-52FSXNPE	RAS-18FSXNPE - RAS-18FSXNPE - RAS-16FSXNPE	MC-30AN1
RAS-54FSXNPE	RAS-18FSXNPE - RAS-18FSXNPE - RAS-18FSXNPE	MC-30AN1

Outdoor unit	3-pipe combinations.	Multikit
RAS-5FSXNPE-3P	Single module	-
RAS-6FSXNPE-3P	Single module	-
RAS-8FSXNPE-3P	Single module	-
RAS-10FSXNPE-3P	Single module	-
RAS-12FSXNPE-3P	Single module	-
RAS-14FSXNPE-3P	Single module	-
RAS-16FSXNPE-3P	Single module	-
RAS-18FSXNPE-3P	Single module	-
RAS-20FSXNPE-3P	RAS-10FSXNPE - RAS-10FSXNPE	MC-20XN1
RAS-22FSXNPE-3P	RAS-10FSXNPE - RAS-12FSXNPE	MC-20XN1
RAS-24FSXNPE-3P	RAS-12FSXNPE - RAS-12FSXNPE	MC-20XN1
RAS-26FSXNPE-3P	RAS-16FSXNPE - RAS-10FSXNPE	MC-21XN1
RAS-28FSXNPE-3P	RAS-16FSXNPE - RAS-12FSXNPE	MC-21XN1
RAS-30FSXNPE-3P	RAS-18FSXNPE - RAS-12FSXNPE	MC-21XN1
RAS-32FSXNPE-3P	RAS-18FSXNPE - RAS-14FSXNPE	MC-21XN1
RAS-34FSXNPE-3P	RAS-18FSXNPE - RAS-16FSXNPE	MC-21XN1
RAS-36FSXNPE-3P	RAS-18FSXNPE - RAS-18FSXNPE	MC-21XN1
RAS-38FSXNPE-3P	RAS-14FSXNPE - RAS-12FSXNPE - RAS-12FSXNPE	MC-30XN1
RAS-40FSXNPE-3P	RAS-14FSXNPE - RAS-14FSXNPE - RAS-12FSXNPE	MC-30XN1
RAS-42FSXNPE-3P	RAS-14FSXNPE - RAS-14FSXNPE - RAS-14FSXNPE	MC-30XN1
RAS-44FSXNPE-3P	RAS-18FSXNPE - RAS-14FSXNPE - RAS-12FSXNPE	MC-30XN1
RAS-46FSXNPE-3P	RAS-18FSXNPE - RAS-14FSXNPE - RAS-14FSXNPE	MC-30XN1
RAS-48FSXNPE-3P	RAS-18FSXNPE - RAS-18FSXNPE - RAS-12FSXNPE	MC-30XN1
RAS-50FSXNPE-3P	RAS-18FSXNPE - RAS-18FSXNPE - RAS-14FSXNPE	MC-30XN1
RAS-52FSXNPE-3P	RAS-18FSXNPE - RAS-18FSXNPE - RAS-16FSXNPE	MC-30XN1
RAS-54FSXNPE-3P	RAS-18FSXNPE - RAS-18FSXNPE - RAS-18FSXNPE	MC-30XN1

Part numbers of cooler accessories

Multikit



2 pipes	3 pipes
E-102SN4	E-52XN3
E-162SN4	E-102XN3
E-242SN3	E-162XN3
E-302SN3	E-202XN3
MW-NP2682A3	E-242XN3
	E-322XN3

Header



2 pipes	3 pipes
MH-84AN1	MH-108XN
MH-108AN	

Compatible accessories

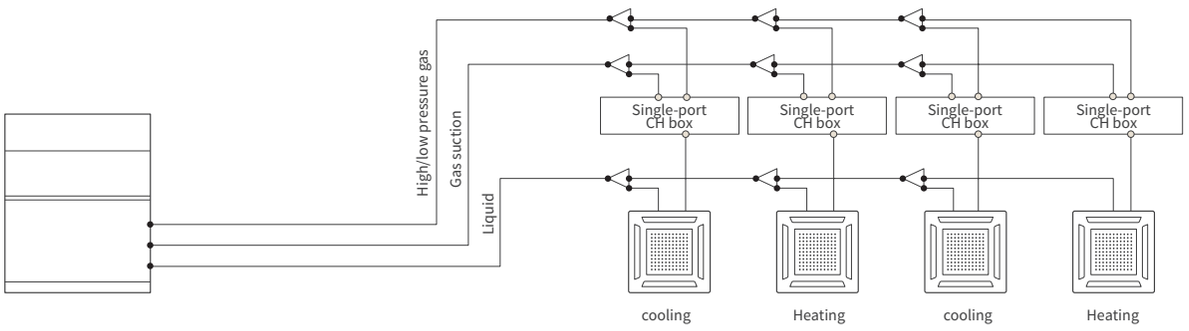


Lockring connectors

VRF SET FREE Single CH boxes

Compatible with Sigma and SET FREE Mini 3-pipe ranges (8 to 12 Hp)





Description

- CH box range with 1 port.
- Up to 8 indoor units per CH box.
- Compact.
- Lightweight.
- Connect 2-pipes only (gas pipes).
- No condensate connection.
- Long pipe lengths possible.
- Very low sound level: 33 dB(A).
- Flare type pipe connections.

Mono CH boxes	Part no.	CH-AP160SSX	CH-AP280SSX
Max. capacity in cooling mode	Hp (kW)	16.0	28.0
Number of indoor units that can be connected*		1 ~ 7	1 ~ 8
Max. pipe length between CH box and Indoor units	m	40	
Difference in height of indoor units connected to the same CH box	m	< 4	
Height difference between each CH box or between a CH box and an indoor unit	m	< 15	
Dimensions (H x L x D)	mm	191 x 301 x 214	
Weight	kg	6	
Diameter of refrigeration pipes – outdoor unit - Gas only	inches	5/8 - 3/4	
Diameter of refrigeration pipes – indoor unit - Gas only	inches	5/8	3/4
Sound pressure level	dBA	33 (46 max**)	

* If connecting multiple indoor units per branch, use the Hitachi multikits referenced P. 270.
** Max. noise means the maximum operating noise level of the CH box emitted when the unit is in simultaneous cooling and heating or in defrost mode.

VRF SET FREE Multi CH boxes

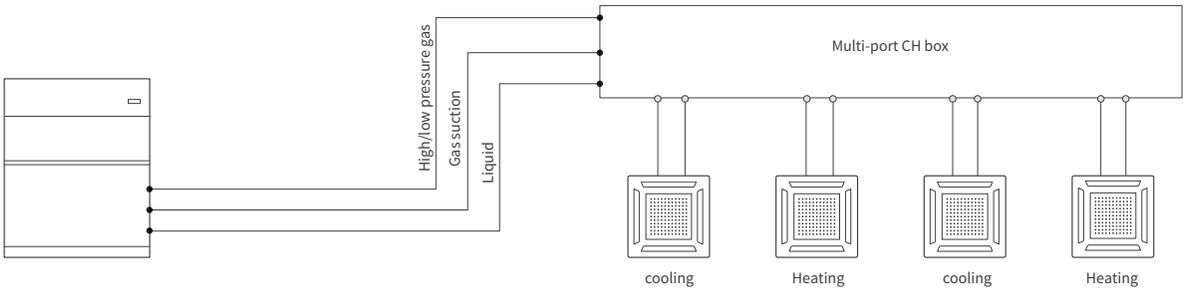
Compatible with Sigma and SET FREE Mini 3-pipe ranges (8 to 12 Hp)











Description

- Range of multi-port CH boxes.
- Up to 96 indoor units per CH box.
- Low-height.
- Low volume.
- No condensate connection.
- Lightweight.
- Very low sound level: 31 dB(A).
- Refrigerant pipe connections brazed (outdoor unit) and flare type (indoor unit).

Multi CH boxes	Part no.	CH-AP04MSSX	CH-AP08MSSX	CH-AP12MSSX	CH-AP16MSSX
Number of branches		4	8	12	16
Number of units per branch*		1 ~ 6	1 ~ 6	1 ~ 6	1 ~ 6
Total max. Cooling capacity per CH box	kW	44.8	85	85	85
Total max. Cooling capacity per branch	kW	16			
Max. pipe length between CH box & indoor units	m	40			
Difference in height of indoor units connected to the same CH box	m	< 4			
Height difference between each CH box or between a CH box and an indoor unit	m	< 15			
Dimensions (H x L x D)	mm	260 x 303 x 352	260 x 543 x 352	260 x 783 x 352	260 x 1023 x 352
Weight	kg	14	25	36	47
Diameters of refrigeration pipes – outdoor unit (Dis - Suc - Liq)	inches	7/8 - 1 1/8 - 1/2	7/8 - 1 1/8 - 1/2	1 - 1 1/8 - 5/8	1 1/8 - 1 1/4 - 3/4
Diameters of refrigeration pipes – indoor unit (Gas - Liq)	inches	5/8 - 3/8			
Sound pressure level	dBA	31 (43 max**)	31 (46 max**)	34 (48 max**)	34 (49 max**)

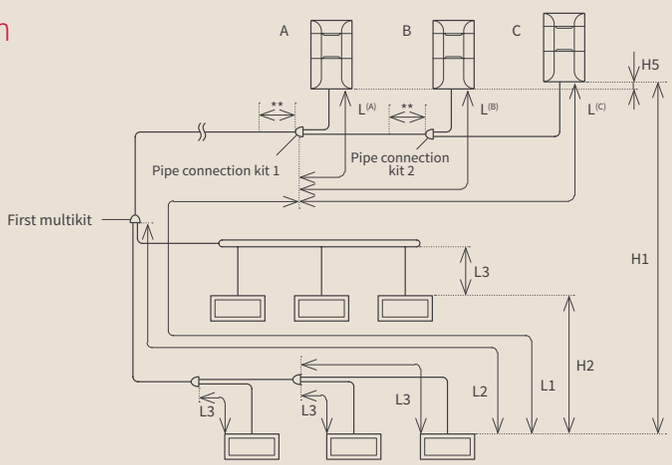
* If connecting multiple indoor units per branch, use the Hitachi multikits referenced P. 270.
** Max. noise means the maximum operating noise level of the CH box emitted when the unit is in simultaneous cooling and heating or in defrost mode.

Design rules for refrigeration piping

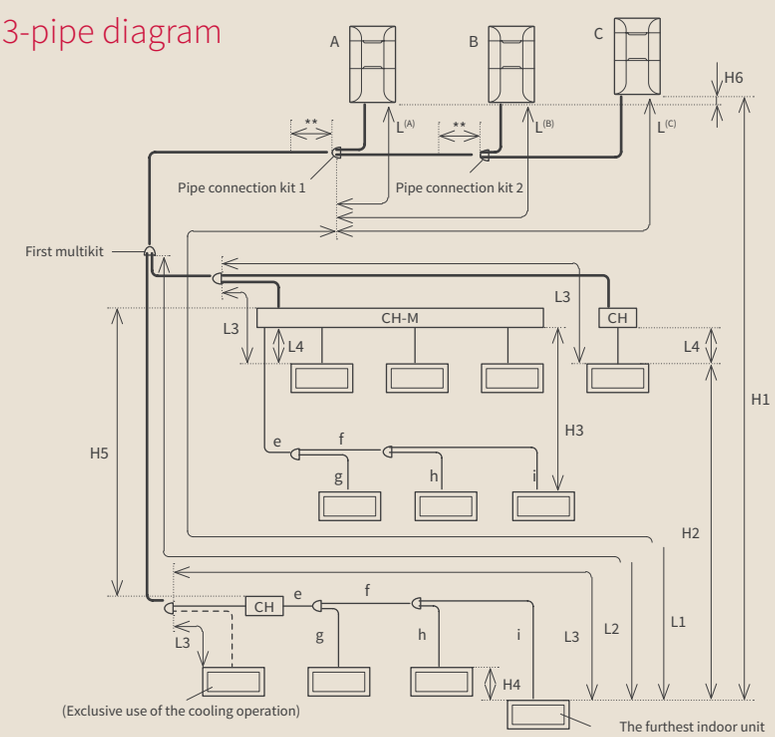
Item		Symbol	Permissible length of pipes: ≤ Number of indoor units recommended*	Permissible length of pipes: ≥ Number of indoor units recommended*
Total length of piping		Actual total length of liquid piping	≤ 1000m(3)	≤ 300m(3)
Max. pipe length	Actual length	L1	≤ 165m	≤ 165m
	Equivalent length		≤ 190m	≤ 190m
Max. length of piping between the multi-kit of the first branch and each indoor unit		L2	≤ 90m	≤ 40m
Max. pipe length between multi-kits and indoor units		L3	≤ 40m	≤ 30m
Total pipe length between the CH-Box and each indoor unit		L4 (e + f + g + h + i)	≤ 40m	≤ 30m
Pipe length between the piping connection kit 1 and each outdoor unit		La, Lb, Lc	≤ 10m	≤ 10m
Height difference between outdoor units and indoor units	Outdoor unit is higher	H1	≤ 50m(1)	≤ 50m(1)
	Outdoor unit is lower		≤ 40m	≤ 40m
Height difference between indoor units		H2	≤ 30m	≤ 30m
Height difference between the CH box and indoor unit		H3	15m(2)	
Difference in height between indoor units connected to the same CH box branch		H4	≤ 4m	≤ 4m
Height difference between CH boxes		H5	≤ 15m	≤ 15m
Difference in height between the outdoor units		H6	≤ 0.1m	≤ 0.1m

(*) See the technical manual for the recommended number of indoor units (TC). (1) Longer piping (up to 110 m) is available for all models. Remember, you must obtain prior approval from Hitachi's Customer Service team if the difference in height is greater than 50 m. Please contact Hitachi's Customer Service department to provide them with the necessary features of the system so that they can carry out a feasibility study. (2) The recommended height difference between the CH box and the indoor unit must be no more than 15 m. If the height difference is greater, it could compromise the operating performance. (3) If following the recommended number of indoor units, the total length of piping must be less than 1,000 m due to the additional coolant load limit. If you exceed the recommended number of indoor units, the restrictions for the total length of the pipes apply.

2-pipe diagram



3-pipe diagram



High/low pressure gas pipes, low pressure gas pipes, liquid pipe.

Gas pipes, liquid pipe.

Low pressure gas pipes, liquid pipe.

CH CH-Box (1 output).

CH-M CH-M (multi-outputs).

* These maximum values may vary depending on the maximum number of indoor units connected. Refer to current technical documentation.
** Keep a straight distance of 500 mm or more downstream of the connection kit.

VRF IVX Centrifugal

SEER 5.60 SCOP 3.98



Ideal solution for city centers

Installed in suspended ceilings, units are invisible from the outside. Perfect for retail units and buildings in areas with restrictive local planning regulations such as listed buildings.

Easy to position

Suspended single-block system: less footprint. Air intake and air outlet can be adjusted to suit the site's needs (same side or at right angle). Available static pressure up to 120 Pa. The air intake and outlet grilles are also interchangeable, increasing your installation options in any part of the building. No need to obtain permits to shut the road for a crane lift.

More comfort

The IVX Centrifugal VRF can provide air-conditioning for up to 6 different zones, all of which can be individually controlled depending on the needs of the occupants.The premium compressor installed on these units provides smart defrosting. This lengthens the heating period and ensures a more comfortable environment.

Silent

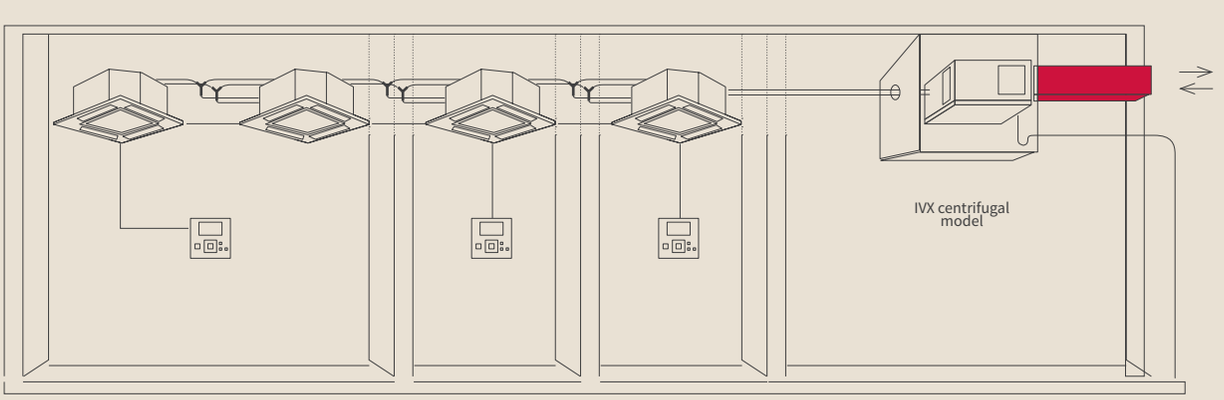
Fans are equipped with a variable frequency driver, which achieves sound levels unmatched on the market.

Compatible with all SYSTEM FREE indoors and controls:

From individual hard wired controls to central controls and communication interfaces for direct integration into a BMS.

Installation

You can opt for 2 branches with up to 4 indoor units or up to 6 indoor units on one single line. Connect up to a maximum of 5 different indoor units for RASC-(4-6)HNPE or 6 indoor units for RASC-(8/10) HNPE. Also compatible with DX KIT.



Outdoor units



RASC-4HNPE
RASC-5HNPE
RASC-6HNPE



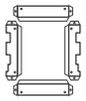
RASC-8HNPE
RASC-10HNPE

VRF IVX Centrifugal

Performance, cooling	Unit	RASC-4HNPE	RASC-5HNPE	RASC-6HNPE	RASC-8HNPE	RASC-10HNPE
Nominal Cooling capacity	kW	10.00	12.50	14.00	20.00	24.00
Rated power input cooling	kW	2.99	3.98	5.09	7.41	9.02
EER	-	3.35	3.14	2.75	2.7	2.66
SEER (average climate) *	-	5.6	5.43	5.22	5.39	5.48
Seasonal energy class	-	A	-			
Working range in Cooling mode	°C	-5°C / +46°C (DB)				
Performance, heating						
Nominal Heating capacity	kW	11.20	14.00	15.50	22.40	26.00
Rated power input heating	kW	2.95	4.12	5.74	7.00	8.52
COP	-	3.8	3.4	2.7	3.2	3.05
SCOP (average climate) *	-	3.98	3.74	3.66	3.51	3.71
Seasonal energy class	-	A	-			
Working range in Heating mode	°C	-15°C / +15.5°C (WB)				
Technical features						
Airflow (cooling)	m^3/h	3300	3600		6900	
Available static pressure (rated / max.)	Pa	56 / 90	72 / 100	100 / 100	84 / 120	102 / 120
Sound power	dB(A)	70	71	72	74	75
Sound pressure in Cooling mode (night mode)	dB(A)	52 (48)		53 (49)	55 (51)	56 (52)
Net weight	kg	192			300	303
Dimensions (H x L x D)	mm	555 x 1415 x 1015			620 x 1850 x 1360	
Diameter of pipes (Liq / Gas)	inches	3/8 - 5/8			3/8 - 1 1/8	1/2 - 1 1/8
Compressor	-	SCROLL				
Grille dimension (air intake)	-	444 x 642			509 x 925	
Grille dimension (air outlet)	-	288 x 334			337 x 398	
Min. power of indoor unit	Hp	0.8				
Number of connectible units (min - max)	-	1 - 5			1 - 6	
Refrigeration characteristics						
Refrigerant	-	R410A				
Initial refrigerant charge	kg	4.1	4.2		5.7	6.2
Max. length / Additional charge	m/g/m	75 / see technical documentation			100 / see technical documentation	
Pre-charged for	m	30				
Max. level difference (outdoor unit above)	m	30 / 20				
Electrical features						
Power supply	-	400V / 3 Ph + N / 50Hz				
Max. current	A	14.1		16.0	24.7	
Recommended fuse size	A	20			32	
Cable width (EN 60 335-1) [1]	mm^2	5 x 4.00			5 x 6.00	
Indoor/outdoor connection (shielded)	mm^2	2 x 0.75				

[1] Data shown is for indication purposes only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.
* The RASC-4HNPE, follows EcoDesign ErP Lot10. Its seasonal performance follows standard EN14825 (2013). HITACHI Centrifugal units are VRF-certified, so the specified performance applies for units only.

Controls and compatible accessories (see the tab VRF TWIN controls)



Fan duct accessory for optional air outlet position

FD-RASC46
FD-RASC810



Multi kit

See next page

Installation rules
VRF IVX Centrifugal

Quantity of indoor units

External unit	Hp	4	5	6	8	10
Max. number of indoor units			5		6	
Min. power of indoor unit				0.8		

Permitted connection ratio

External unit	Hp	4	5	6	8	10
Max. number of indoor units	1 to 4			75~120%		
		3 to 4.8 Hp	3.8 to 6 Hp	4.5 to 7.2	6 to 9.6 Hp	7.5 to 12 Hp
	5			75~100%		
		3 to 4 Hp	3.8 to 5 Hp	4.5 to 6 Hp	6 to 8 Hp	7.5 to 10 Hp
	6		-		75~100%	
			-		6 to 8 Hp	7.5 to 10 Hp

* If more than 4 indoor units are connected, the power of the indoor units must be balanced out according to the table below.

Authorized combinations of indoor units for all outdoor units

The most powerful unit in the combination	0.80	1.00	1.30	1.50	1.80	2.00	2.30	2.50	3.00	4.00	5.00	6.00
The least powerful unit in the combination	0.80				1.00			1.30		1.50	1.80	2.00

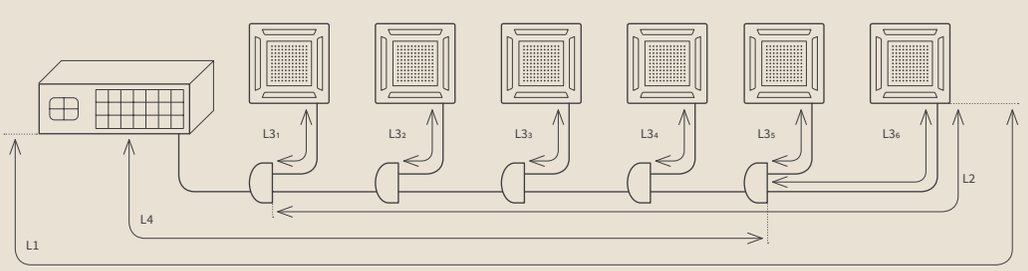
RASC-10HNPE: Special combinations allowed for the outdoor unit

	Power combinations of authorized indoor units (Hp)					
Max. number of indoor units	2	8 + 3	8 + 2	10 + 3	10 + 2	-
	3	8 + 2 + 2	8 + 1.5 + 1.5	8 + 1 + 1	10 + 1.5 + 1.5	10 + 1 + 1

4 to 10 Hp units:
Permitted installation (1 to 6 indoor units)

- Line branch installation.
- 1 or 2 lines with a constant diameter.
- Installation with more than 4 indoor units: branch connections off one main permitted line (2 branches not allowed).


Multikit



Design rules for refrigeration piping

External unit		Hp	4	5	6	8	10
Max. length between outdoor unit and the furthest indoor unit	Actual length	m	75			100	
	Equivalent length	m	95			125	
Max. level difference from outdoor unit to indoor unit (H) (outdoor unit above/ below)		m	30/20				
Max. level difference from indoor unit to indoor unit		m	10				
Max. level difference from Multikit to indoor unit / Multikit to Multikit		m	3				
Total length of the pipe		m	95			100	145
Max. length of indoor unit to Multikit		m	10			15	
Max. length of first Multikit to furthest indoor unit		m	30			40	

Multikit part numbers		Hp	E-102SN4	E-162SN4	
Diameter of the main line			-	Constant diameter	
Diameter of outdoor unit - first multikit	Liq/Gas	inches	3/8 - 5/8	3/8* - 1 1/8	1/2 - 1 1/8

**If the pipe is longer than 70m, use a 1/2" liquid line instead of 3/8".

Power of indoor unit		Hp	< 1.5	1.8 to 2	2.3 to 6	8	10
Diameter of multikit - indoor unit	Liq/Gas	inches	1/4 - 1/2	1/4 - 5/8	3/8 - 5/8	3/8 - 3/4	3/8 - 7/8



Renewing the indoor air in buildings is essential to create a healthy environment. Hitachi's fresh air range ensures excellent indoor air quality and saves energy.



Air treatment and ventilation

SYSTEM FREE



Air treatment

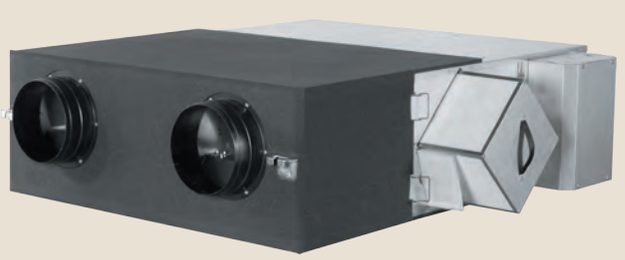
DX air curtains



DX FRICO air curtains.
Thermodynamic heating air curtain for door entrance areas of any size.

Heat recovery units

240 Pa · M1



With energy recovery.
Ventilation system with energy recovery.
KPI-252~2002E4E / KPI-502~2002E4E

Heat recovery units with DX coils

200 Pa · 13 KW · M1



With energy recovery.
Ventilation system with energy recovery and built-in DX coil.
KPI-502~1002X4E



DX kit

11 TO 28 KW

10 TO 25 KW



Control system for DX coil.
Example of use:
air handling unit with DX coil.

EVX.2.0-10E2

Free cooling kit for ducted units

PLUG & PLAY



Fresh air solution for ducted units.

EF-456N1E

DX air curtains



Hitachi / Frico

- Hitachi and Frico have come together to offer DX air curtains compatible with the Hitachi units in the Prime/IVX range.
- The factory assembly of the expansion valves, control box and a lift pump allows for ultra-fast installation.
- Frico's Linea DXH and AZR DXH air curtain ranges combine with a Hitachi split heat pump for 3.5m high installations.

Functions

- The DX air curtain creates a thermal barrier all year round and provides comfort in both summer and winter with minimal energy expenditure.
- No need for a filter, with the microperforated intake grille.
- Max. air off temperature: 35°C.

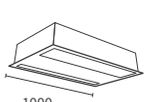
Advantages

- Quick return on investment.
- Energy efficiency, reduced operating costs.
- Low CO_2 emissions.
- 2 versions available: recessed and surface mounted models.
- Model available in all RAL colors.
- Reversible range (heating or cooling operation).
- Also compatible with outdoor unit X-Premium.

Air curtains

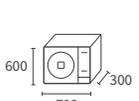


Surface mounted curtain

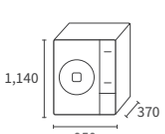


Recessed curtain

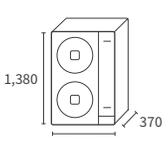
Outdoor units



RAS-3HVNC1



RAS-4H(V)NC2E
RAS-6H(V)NC2E



RAS-8HNCE
RAS-10HNCE

DX air curtains

Surface mounted curtain

Linea M DXH compatible with Hitachi, height of up to 3 m, 230V~

Part number	Power	Air flow rate	Voltage	Weight
	kW	m^3/h	(V)	kg
LINEAM1000DXH3	9	1560	230	52
LINEAM1500DXH4	12	2170	230	83
LINEAM2000DXH6	18	3100	230	113
LINEAM2500DXH8	22	4400	230	145

Linea G DXH compatible with Hitachi, height of up to 3.5 m, 230V~

Part number	Power	Air flow rate	Voltage	Weight
	kW	m^3/h	(V)	kg
LINEAG1000DXH4	12	2170	230	55
LINEAG1500DXH6	15	3100	230	85
LINEAG2000DXH8	22	4400	230	115
LINEAG2500DXH10	26	5450	230	147

Part number	Height	Length	Depth
LINEA1000DXH	140+260	1000	480
LINEA1500DXH	140+260	1500	480
LINEA2000DXH	140+260	2000	480
LINEA2500DXH	140+260	2500	480

Recessed curtain

AZR M DXH compatible with Hitachi, height of up to 3 m, 230V~

Part number	Power	Air flow rate	Voltage	Weight
	kW	m^3/h	(V)	kg
AZRM1000DXH3	9	1560	230	52
AZRM1500DXH4	12	2170	230	83
AZRM2000DXH6	18	3100	230	113
AZRM2500DXH8	22	4400	230	145

AZR M DXH compatible with Hitachi, height of up to 3.5 m, 230V~

Part number	Power	Air flow rate	Voltage	Weight
	kW	m^3/h	(V)	kg
AZRG1000DXH4	12	2170	230	55
AZRG1500DXH6	15	3100	230	85
AZRG2000DXH8	22	4400	230	115
AZRG2500DXH10	26	5450	230	147

Part number	Height	Length	Depth
AZR1000DXH	130+260	1000	700
AZR1500DXH	130+260	1500	700
AZR2000DXH	130+260	2000	700
AZR2500DXH	130+260	2500	700

Hitachi-compatible outdoor units

Split installation: Compatible outdoor units (requires the remote control PC-ARFP1E)

Utopia Prime / IVX
Model Ref
RAS-3HVNC1
RAS-4H(V)NC2E
RAS-6H(V)NC2E
RAS-8HNCE

Utopia Prime / IVX
Model Ref
RAS-4H(V)NC2E
RAS-6H(V)NC2E
RAS-8HNCE
RAS-10HNCE





Ventilation units

With energy recovery



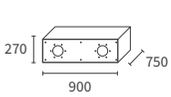
Functions and features

- Suitable for a wide variety of buildings applications.
- Option to connect a CO_2 sensor (not supplied) and automatically regulate air quality based on a pre-set maximum CO_2 concentration.
- High-efficiency F7 filters are available (optional).
- The Hitachi heat recovery ventilation system adjusts the temperature and humidity of incoming fresh air to match the indoor environment.
- Automatic ventilation mode where the KPI controls which mode to operate within to ensure maximum energy efficiency.
- Forced bypass mode where 100% fresh air is supplied for free cooling
- KPI units can alter a room's pressurisation level if required to either help keep air in or extract air depending on the requirement.

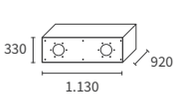
Advantages

- Temperature exchange efficiency up to 83%.
- Low-consumption electronic fan motors.
- Sound pressure from 25 dB(A).
- All insulation with these KPIs is M1-certified (NF-P92-501).
- Up to 240 Pa available static pressure.

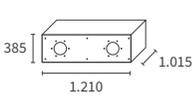
KPI



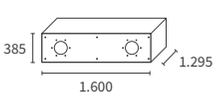
KPI-252E4E



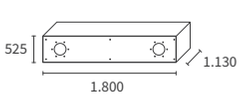
KPI-502E4E



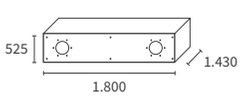
KPI-802E4E



KPI-1002E4E



KPI-1502E4E



KPI-2002E4E

KPI

Celluloid paper heat exchanger	Unit	KPI-252E4E	KPI-502E4E	KPI-802E4E	KPI-1002E4E	KPI-1502E4E	KPI-2002E4E
Nominal air flow	m^3/h	250	500	800	1000	1500	2000
Exchange efficiency (H / M / L)	%	74 / 77 / 79	74 / 77 / 78	75 / 76 / 78	78 / 81 / 83	73 / 76 / 80	76 / 78 / 80
Airflow rate (H / M / L)	m^3/h	250 / 208 / 180	500 / 420 / 360	800 / 650 / 540	1000 / 800 / 620	1500 / 1250 / 950	2000 / 1450 / 1200
Sound pressure level (H / M / L)	dB(A)	28 / 27 / 25	33 / 31 / 30	35 / 34 / 33	37 / 34 / 32	39 / 37 / 35	40 / 39 / 36
Available static pressure (H / M / L)	Pa	55 / 35 / 30	80 / 50 / 37	90 / 60 / 40	95 / 65 / 40	100 / 70 / 45	120 / 65 / 40
Maximum external pressure (nominal)	Pa	240	210	120	190	200	170
Dimensions (H x W x D)	mm	270 x 900 x 750	330 x 1130 x 920	385 x 1210 x 1015	385 x 1600 x 1295	525 x 1800 x 1130	525 x 1800 x 1430
Weight	kg	34	46	51	79	97	106
Power supply	-	1~230V 50Hz					
Recommended fuse size	A	5			**10**		

Controls and compatible accessories (see the tab VRF TWIN controls)



Wired remote control weekly timer

PC-ARFP1E



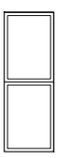
Noise attenuator

SLT-30-200-L600:
Compatible with KPI-502E4E

SLT-30-250-L600:
Compatible with KPI-802E4E

SLT-30-300-L600:
Compatible with KPI-1002E4E

SLT-30-355-L600:
compatible with KPI-1502-2002E4E



High-efficiency filter

HEF-252:
Compatible with KPI-252E4E

HEF-502:
Compatible with KPI-502E4E

HEF-802:
Compatible with KPI-802E4E

HEF-1002:
Compatible with KPI-1002E4E

HEF-1502:
Compatible with KPI-1502E4E

HEF-2002:
Compatible with KPI-2002E4E

Ventilation with DX coil

200 Pa | 13 KW | M1

With energy recovery



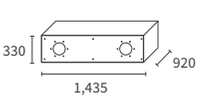
Functions and features

- System dedicated to the handling of fresh air.
- Suitable for a wide range of building applications, especially in areas with lower outside temperatures.
- Option to connect a CO_2 sensor (not supplied) and automatically regulate air quality based on a pre-set maximum CO_2 concentration.
- High-efficiency F7 filters are available (optional).
- The Hitachi heat recovery ventilation system adjusts the temperature and humidity of incoming fresh air to match the indoor environment.
- Automatic ventilation mode where the KPI controls which mode to operate within to ensure maximum energy efficiency.
- Forced bypass mode where 100% fresh air is supplied for free cooling
- KPI units can alter a room's pressurisation level if required to either help keep air in or extract air depending on the requirement.

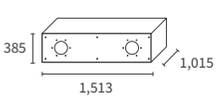
Advantages

- Temperature exchange efficiency up to 83%.
- Low-consumption electronic fan motors.
- All insulation in these KPIs is M1 certified (NF-P92-501).
- Compatible with Utopia IVX, Set Free Mini, Centrifugal, or VRF SIGMA.
- Sound pressure from 29 dB(A).
- Up to 200 Pa available static pressure.
- Heating capacity up to 13 kW.

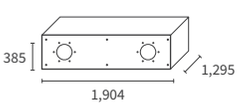
KPI active



KPI-502X4E



KPI-802X4E



KPI-1002X4E

KPI active

Celluloid paper heat Exchanger with DX coil	Unit	KPI-502X4E	KPI-802X4E	KPI-1002X4E
Nominal cooling capacity (recovery)	kW	5,32 (of which is recovered: 1.81)	7,96 (of which is recovered: 2.94)	10,83 (of which is recovered: 3.73)
Nominal heating capacity (recovery)	kW	6,92 (of which is recovered: 2.12)	9,79 (of which is recovered: 3.49)	12,93 (of which is recovered: 4.43)
Exchange efficiency (H / M / L)	%	74 / 77 / 78	75 / 76 / 78	78 / 81 / 83
Sound pressure level (H / M / L)	dB(A)	32 / 30 / 29	34 / 33 / 32	36 / 33 / 31
Airflow rate (H / M / L)	m^3/h	500 / 430 / 380	800 / 700 / 590	1000 / 820 / 740
Available static pressure (H / M / L)	Pa	90 / 82 / 60	110 / 80 / 57	170 / 105 / 80
Maximum external pressure (nominal)	Pa	200	110	170
Dimensions (H x W x L)	mm	330 x 1435 x 920	385 x 1513 x 1015	385 x 1904 x 1295
Weight	kg	62	69	100
Power supply	-	1~230V 50Hz		
Recommended fuse size	A	5		10

Controls and compatible accessories (see the tab VRF TWIN controls)



Wired remote control weekly timer

PC-ARFP1E



Noise attenuator

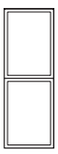
SLT-30-200-L600:

SLT-30-250-L600:

SLT-30-300-L600:

SLT-30-355-L600:

SLT-30-450-L600



High-efficiency filter

HEF-252: HEF-1002

HEF-502: HEF-1502

HEF-802: HEF-2002

DX kit

Air-handling unit.

11 TO 28 KW

10 TO 25 KW





The kit includes:

- 4 temperature sensors with extensions (THM1: air inlet sensor and THM2: air outlet sensor. THM3 and THM4: sensors at liquid and gas lines).
- 1 electronic expansion valve box.
- 1 electrical box.
- 1 harness jumper.

Not included:

- Remote control PCARFP1E.
- PCC-1A connectors.

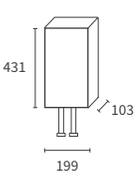
Functions and features

- An “expansion valve / control box” kit that connects an Hitachi unit to a 3rd party system with a DX heat exchanger coil (AHU, ventilation, air curtain, etc.) and manages it like an Hitachi indoor unit.
- Modular operation: Combine up to 5 DX interfaces to works as a group on the same DX coil (up to 50HP with outdoor unit IVX PREMIUM only). The Master unit has 4 temperature sensors. Slave units have only gas and liquid sensors (heat exchanger pipes).
- Synchronized defrosting between the units.
- Precise temperature: the combination of the DX kit with RAS-XH(V)NP1E guarantees the highest levels of precision on the market in terms of maintaining the target temperature.
- The control of capacity demand can be done by inlet air temperature, outlet air temperature, incremental reference duty control and absolute reference duty control, depending on the needs of the installation

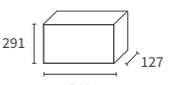
Important

- Do not stop the air flow through the DX coil while defrosting the outdoor units. You can add an electrical heater battery to avoid blowing cold air (not managed or sold by Hitachi). A 12Vdc relay (not sold by Hitachi) to serve the heater battery must be provided.
- 12Vdc relay must be used for heating/cooling mode selection if the AHU has inputs to select heating/cooling mode.
- If the AHU has outputs for managing the mode (heating/cooling), these must connect to the inputs (dry contact) of the outdoor unit.

DX kit

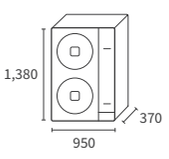


Expansion valve box



Control box

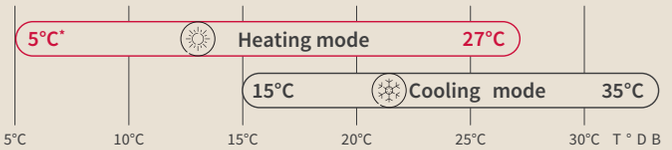
Outdoor units



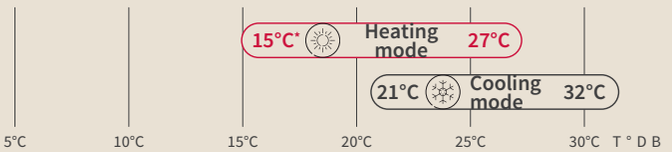
RAS-4XH(V)NP1E
RAS-5XH(V)NP1E
RAS-6XH(V)NP1E
RAS-8XHNPE
RAS-10XHNPE

Extended DX coil operating range

T° of DX coil air inlet
(Installation with X PREMIUM unit)



T° of DX coil air inlet
(Installation IVX Prime, IVX Comfort, SET FREE MINI and SIGMA).

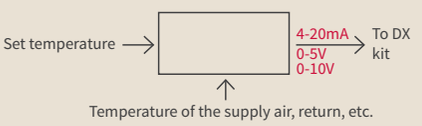


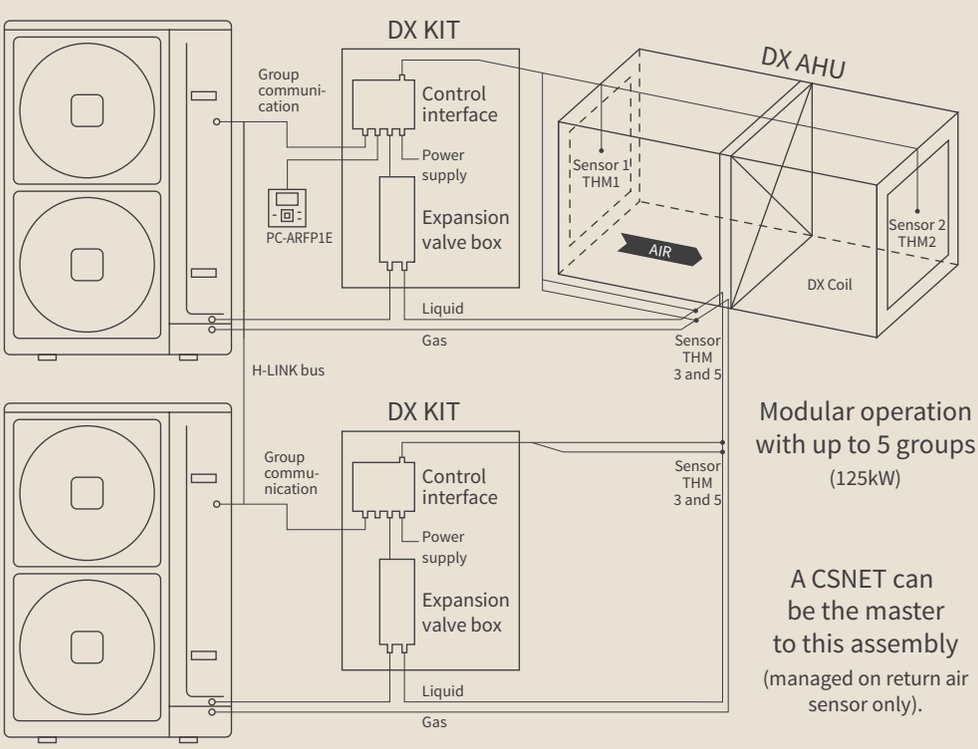
Below these values, provide an electrical heater battery or a heat recovery system upstream of the DX coil.

Ultimate control

• Compatible with X PREMIUM units RAS-4~10XH(V)NP1E only.
- A 0-10V, 0-5V/4-20mA input for external control can be utilised.
- Capacity control possible on the return or supply air temperature.
- External control with a 0-10V signal to precisely control the frequency of the compressor.

• Compatible with units IVX Prime, IVX Comfort and FREE Mini and SIGMA units.
- Control based on return air only.





Modular operation with up to 5 groups
(125kW)

A CSNET can be the master to this assembly
(managed on return air sensor only).

Optimal defrosting

- Installation with 3 units: only one unit in defrosting mode.
- Installation with 5 units: 2 units in defrosting mode and 3 units operating.

DX kit

Part number of DX KIT		EXV-2.0E2	EXV-2.5E2	EXV-3.0E2	EXV-4.0E2	EXV-5.0E2	EXV-6.0E2	EXV-8.0E2	EXV-10.0E2
Nominal Cooling capacity	kW	5.0	6.0	7.1	10.00	12.50	14.00	20.00	25.00
Nominal Heating capacity	kW	5.6	7.0	8.0	11.20	14.00	16.00	22.40	28.00
Control box									
Colour	-	Natural Gray (Munsell 1.0Y8.5/0.5)							
Dimensions (H x W x D)	mm	291 x 341 x 127							
Weight	kg	3							
Power supply	-	1~230 V 50hz							
Max. fan current	A	3.5							
Expansion valve box									
Dimensions (H x W x D)	mm	431 x 199 x 103							
Weight	kg	2.0	2.7					4.5	
Pipe diameter (Liq.)	inches	1/4	3/8						
Remote control (not included)	-	PC-ARFP1E							
Outdoor unit	**Hp**	**2**	**2.5**	**3**	**4.0**	**5.0**	**6.0**	**8.0**	**10.0**
		Ask technical for details	Ask technical for details	RAS-3XHVNP1E	RAS-4XH(V)NP1E	RAS-5XH(V)NP1E	RAS-6XH(V)NP1E	RAS-8XHNPE	RAS-10XHNPE

COMPATIBILITY TABLE FOR DX KITS WITH OUTDOOR UNITS

DX kit part no.	Mode	Allowed Heat exchanger capacity (kW)			Heat Exchanger inner volume (L)			Recommended Airflow (m³/h)	
		Min	Nominal	Max	Min	Max	Max Outdoor unit X-Premium only	Min	Max
EXV-2.0E2	Cooling Heating	4.0 4.5	5.0 5.6	5.6 7.1	0.57	1.16	-	480	1260
EXV-2.5E2	Cooling Heating	4.8 5.6	6.0 7.0	6.3 7.1	0.89	1.35	-	690	1560
EXV-3.0E2	Cooling Heating	5.7 6.4	7.1 8.0	9.0 11.2	1.03	1.57	2.89	750	1800
EXV-4.0E2	Cooling Heating	8 9	10 11.2	11.2 12.5	1.51	2.37	4.56	1200	2160
EXV-5.0E2	Cooling Heating	10 11.2	12.5 14	14 16	1.92	2.37	4.56	1380	2490
EXV-6.0E2	Cooling Heating	11.2 12.8	14 16	16 18	1.92	2.92	5.11	1500	2550
EXV-8.0E2	Cooling Heating	16 17.9	20 22.4	22.4 25	2.92	3.89	6.93	3540	4680
EXV-10.0E2	Cooling Heating	20 22.4	25 28	28 31.5	3.89	4.76	10.73	4080	5340

The capacity of the heat exchanger must match the specified rated capacity of each DX KIT under the following temperature conditions. Failure to comply with the heat exchanger's capacity can result in a system malfunction. Data applies under the following conditions:

Nominal conditions	Heating mode	Nominal conditions	Cooling mode
Indoor air inlet temperature	20°C(DB)	Indoor air inlet temperature	27°C(DB)/19°C(WB)
Outdoor temperature	7°C(DB)/6°C(WB)	Outdoor temperature	35°C(DB)
Condensing temperature	40°C ~ 45°C	Evaporation temperature	6°C
Subcooling temperature	3°C	Superheating temperature	5°C

(DB): dry bulb - (WB): wet bulb

Combination with VRF:
Control based on return air only.
Installing the VRF SIGMA as a single-split unit + DX KIT is not allowed.
It is possible to install several DX KITs (DX KIT only) with a SIGMA unit. But the maximum connection rate allowed is 100%.
With a combined installation of a DX KIT + Air/Air indoor units with VRF SIGMA, the connection rate is: 30% DX KIT and 70% Air/Air.

Outdoor units specific to DX Kit

	Unit	RAS-4XH(V)NP1E	RAS-5XH(V)NP1E	RAS-6XH(V)NP1E	RAS-8XHNPE	RAS-10XHNPE
Performance, cooling						
Nominal cooling capacity (min-max)	kW	10.0 (4.5-11.2)	12.5 (5.7-14.0)	14.0 (6.0-16.0)	20.0 (8.0-22.4)	25.0 (10.0-28.0)
Rated power input cooling	kW	2.14	3.28	4.11	5.62	8.14
EER	-	4.68	3.81	3.41	3.56	3.07
Working range in Cooling outdoor unit	°C	-5 /+46				
Performance, heating						
Nominal heating capacity (min-max)	kW	11.2 (5.0-14.0)	14.0 (5.0-18.0)	16.0 (5.0-20.0)	22.4 (6.3-28.0)	28.0 (8.0-35.0)
Rated power input heating	kW	2.17	3.08	3.78	5.32	7.29
COP	-	5.16	4.55	4.23	4.21	3.84
Working range in Heating outdoor unit	-	-20 /+15				
Technical features						
Airflow (cooling)	m^3/h	4,800	5,400	6,000	7,620	8,040
Sound pressure in Cooling mode (night mode)	dB(A)	47 (43)	48 (44)	48 (45)	57 (55)	58 (56)
Sound pressure in Heating mode	dB(A)	49	50		59	60
Sound power	dB(A)	63	64	65	76	
Net weight	kg	103			136	138
Dimensions (H x L x D)	mm	1380 x 950 x 370				
Diameter of pipes (Liq / Gas)	inches	3/8 - 5/8			3/8 - 1 1/8	1/2 - 1 1/8
Compressor	-	Scroll Inverter				
Refrigeration characteristics						
Min. pipe length	m	5				
Pre-charged for	m	30				
Initial refrigerant charge	kg	4.1	4.2	4.2	5.3	6
Additional charge	Kg	calculate based on the method indicated in the installation technical documentation [1]				
Max. pipe length	m	75			100	
Expansion valve box installation	-	Within 5 m MAX of DX Coil				
Max. level difference (outdoor unit above / below)	m	30 / 20				
Refrigerant	-	R410A				
Technical features						
Power supply	-	3N ~ 400V 50Hz (1 ~ 230V 50Hz)			3N ~ 400V 50Hz	
Max. current	A	14.0 (30.5)		16.0 (30.5)	24	
Recommended fuse size	A	16 (32)		20 (32)	32	
Cable width (EN 60 335-1) [2]	mm^2	5 x 2.5 (3 x 6.00)			5 x 6.00	

(1) The values of "Additional charge needed" are determined on a case by case basis. To find out these values, see the "DX interface coolant refill and max. pipe lengths" section listed in the Technical Catalogue.
(2) Data shown is for indication purpose only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility and current standards.



Controls and compatible accessories (see the tab VRF TWIN controls)

Wired remote control weekly timer

PC-ARFP1E

Adjustable input/output contact connections

PCC-1A

PLUG & PLAY

Econofresh
Free cooling for ducted units

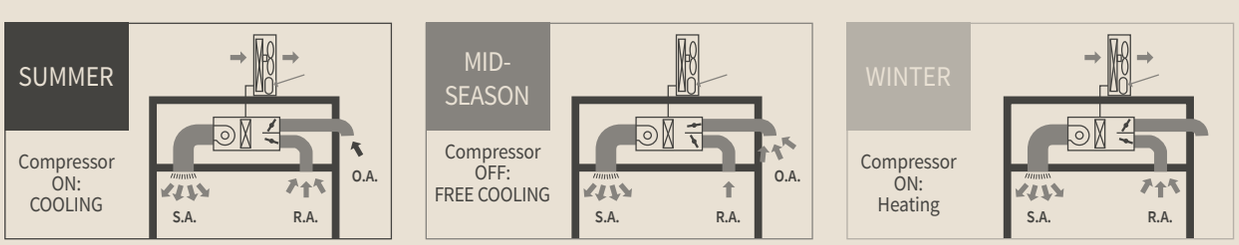


Functions and features

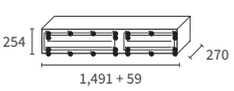
- The EconoFresh is a module that is added to the return air of a RPI unit (sizes 4-6 HP only). It can supply up to 100% fresh air and is able to provide natural 'free cooling' through a set of dampers when the outdoor air temperature is lower than the set indoor temperature.
- It can operate in conjunction with a CO2 sensor or an enthalpy sensor (taking into account latent heat) to ensure air quality in a room.
- The intelligent EconoFresh continuously modifies the damper opening to ensure the set point is always maintained, and where possible shut the compressor down to save on running costs and energy use.

Advantages

- Compatible with Utopia Prime, IVX Comfort / Set Free Mini / VRF Sigma / VRF Centrifugal.
- 3 standard speeds.
- 3 adjustable levels of static pressure.
- Easily accessible filters.
- Automatic regulation (damper position and compressor speed).
- Free-cooling mode in mid-season.
- Potential 100% fresh air mid-season.
- 40% energy savings possible with use of EconoFresh compared to standard installations.



Econofresh kit



EF-456N1E

Medium-pressure ducted unit 150 Pa compatible with Econofresh

150Pa ducted indoor units	Unit	RPI-4.0FSN6E-EF	RPI-5.0FSN6E-EF	RPI-6.0FSN6E-EF
Power	Hp	4.00	5.00	6.00
Nominal Cooling capacity UTOPIA	kW	10.00	12.50	14.00
Nominal Heating capacity UTOPIA	kW	11.20	14.00	16.00
Nominal Cooling capacity SET FREE	kW	11.20	14.00	16.00
Nominal Heating capacity SET FREE	kW	12.50	16.00	18.00
Sound pressure (L / M / H) [1][3]	dB(A)	35 / 38 / 39	36 / 38 / 40	36 / 36 / 40
Sound power	dB(A)	62	64	64
Airflow (L/M/H)	m^3/h	1680 / 2070 / 2160	1920 / 2100 / 2220	1950 / 2130 / 2250
Rated static pressure (min-max)	Pa	37 (0~150)	50 (0~150)	50 (0~150)
Condensate pump		Yes		
Max. elevation	mm	850		
Diameter of pipes (Liq/Gas)	inches	3/8 - 5/8		
Condensate outlet diameter (ext)	mm	32		
Dimensions (H x L x D)	mm	240 x 1474 x 600		
Weight	kg	42		
Power supply	-	1~ 230V 50Hz		
Cable width (EN 60 335-1)[2]	mm^2	3 x 0.75		
Max. current	A	3.2	3.5	
Recommended fuse size	A	5		
Remote control	-	PC-ARFP1E		

[1] Sound levels (pressure) are measured in an anechoic chamber at 1.50 m below the unit (no ceiling under the unit), with an extraction duct at 1 m and a discharge duct at 2 m.
[2] Data shown is for indication purposes only. It is the installer's responsibility to ensure that these cable widths meet the needs of the facility.
[3] Ultra high-speed access is possible with remote controls PC-ARFP1E (or PC-ARFG-E available second half of 2021) and PC-ARH1E.

Econofresh kit	Unit	EF-456N1E
Dimensions (H x L x D)	mm	254 x (1491 + 59) x 270
Weight	kg	13.7
Power supply	-	via the board of the indoor unit

controls and compatible accessories (see the tab VRF TWIN controls)



Wired remote control
weekly timer

PC-ARFP1E

No two rooms are the same.
Your customers face different challenges every day.
Our wide Samurai range of chillers and heat pumps
have everything you need for your projects.



Samurai



Samurai S

Heat pump unit
Air cooled



Samurai M

Heat pump unit
Air cooled



Samurai L

Chiller and heat pump unit
Air cooled



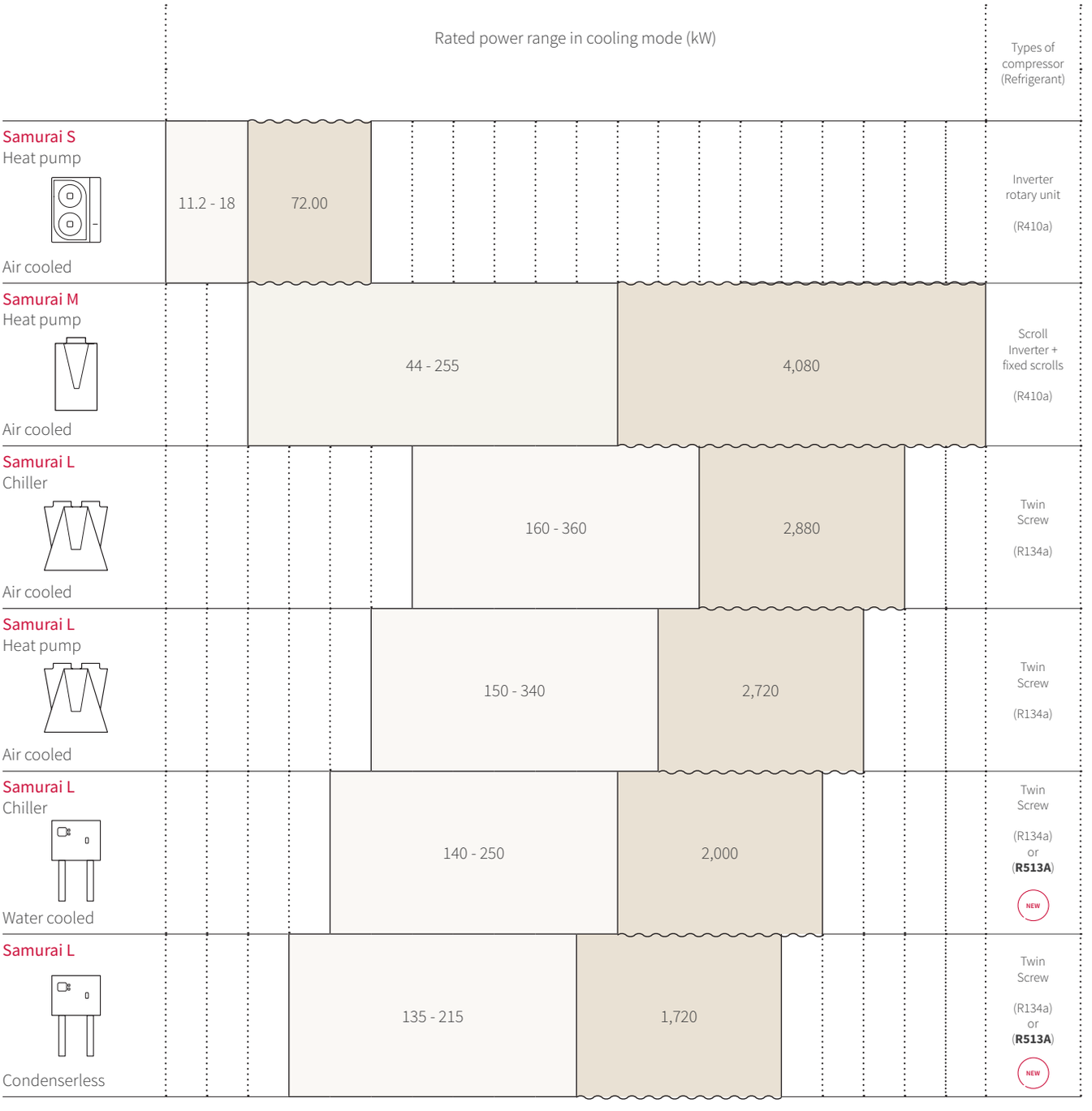
Samurai L

Chiller and heat pump unit
Water cooled and condenserless

* JOHNSON CONTROLS - HITACHI AIR CONDITIONING EUROPE SAS participates in the Eurovent Certification Program for AC / VRF / LCP-HP categories; data from certified models are listed in the Eurovent Annual Report (www.eurovent-certification.com).

Selection guide

Chilled water and heat pump units



☐ One unit ☐ Modular concept: multiple units with a cascading connection

Heat pump models

Separate wired controller

Compatible Samurai M and Samurai S ranges

Controls and accessories included

MODBUS

BACNET

Compatible Samurai L and Samurai M ranges

Benefits

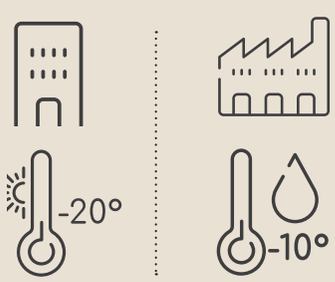
Chilled water and heat pump units

1 Modular design that adapts to the demands of each space

Thanks to their modular design, Hitachi chillers are ideal for quick, compact installations where the machines must adapt to the space available. The high-efficiency units must be adpatable to reach the required power, thereby guaranteeing continued operation in the event of partial failure.



2 Operating ranges adapted to PROCESS and COMFORT applications



Samurai S/M/L ranges are perfectly suited to the process market. As standard, their extensive operating range of water supply temperatures means they can suit many applications. Complete with a Brine option, the Samurai L can produce cold water down to -10°C with outside temperatures of -15°C. The heat pump versions provide hot water to 55c and can still heat down to -15°C / -20°C ambient dependent on the model.

3 Modular solution for excellent energy performance

ERP 2021

SEER 5.52

Samurai ranges incorporate cutting-edge power modulation technologies, to anticipate ERP 2021's energy performance thresholds in cooling mode.

- Samurai S range: Inverter rotary compressor.
- Samurai M: Inverter scroll and ec motor fans.
- Samurai L: modular screw and ec motor fans.

4 Ranges to cater for small and large projects

The Samurai L range, specifically dedicated to larger projects, has a number of options that can ensure a bespoke design will match building needs. Samurai S/M ranges for smaller projects are ready-to-go out of the box with most accessories included as standard.

Samurai S Heat pump

Air cooled – Rotary Inverter compressor



Plug & play design

The Samurai S range for small projects is ready to install straight out of the box with the built-in hydraulic kits including a flow switch, water filter, safety valve and built in pump.

Flexible installation

Modular design: onboard controls to operate up to 4 units in a cascading system. (Fig. 1)

Static pressure available: Each unit has 30 Pa of static pressure available as standard.

Large operating ranges (Fig. 2)

Excellent energy performance

Our Inverter technology promises excellent seasonal energy performance in both heat and cooling mode.

SEER 4.52 SCOP 4.02

Fig. 1

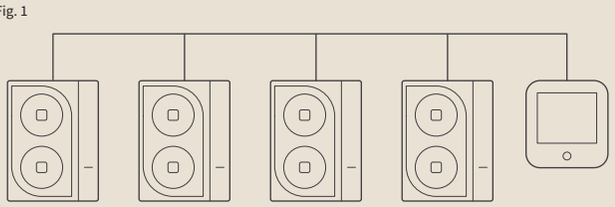
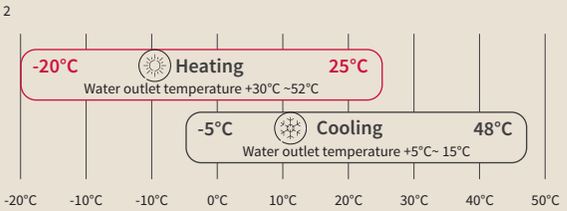
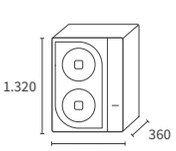


Fig. 2



Heat pump models



RHMA-4AVN
RHMA-5AVN
RHMA-6AVN
RHMA-7AVN

Controls and accessories included



Separate wired remote control

Samurai S – heat pump

	Unit	RHMA-4AVN	RHMA-5AVN	RHMA-6AVN	RHMA-7AVN
Performance					
Nominal Cooling capacity	kW	11.2	14.3	16	17.8
Rated power input Cooling	kW	4.01	5.28	5.74	6.95
EER	-	2.8	2.7	2.8	2.56
SEER	-	4.05	4.32	4.52	4.42
Ƞs, c	%	159	170	178	174
Nominal Heating capacity	kW	10.9	13.1	15.4	18.5
Rated power input Heating	kW	3.7	4.3	4.7	6.3
Heating capacity at -7°C (water outlet 50°C)	kW	7.15	7.89	10.36	12.35
Heating capacity at -15°C (water outlet 45°C)	kW	5.82	4.99	8.63	10.63
COP	-	3	3.06	3.29	2.94
SCOP	-	3.5	3.6	4.02	3.9
Ƞs, h	%	136	139	158	153
Sound power level Cooling Standard / Low	dB(A)	68 / 64	70 / 65		74 / 69
Sound power level Heating Standard / Low	dB(A)	69 / 66	71 / 67		74 / 70
Sound pressure level 1m Cooling Standard/Low	dB(A)	54 / 52	55 / 53		59 / 54
Sound pressure level 1m Heating Standard/Low	dB(A)	55 / 54	56 / 55		59 / 55
Sound pressure level 10m Cooling Standard/Low	dB(A)	40 / 38	42 / 40		46 / 42
Sound pressure level 10m Heating Standard/Low	dB(A)	41 / 39	43 / 42		46 / 43
Operating ranges at outside Temp°. - Cooling mode	°C		-5~48		
Operating ranges at outside Temp°. - Heating mode	°C		-20~25		
T° at water outlet – Cooling mode	°C		+5~15		
T° at water outlet – Heating mode	°C		30~52		
Dimensions and weight					
Overall dimensions (height x length x width)	mm		1320 x 995 x 360		
Net weight	kg	126	128	141	
Compressor					
Type of compressor	-		Hitachi Inverter DC rotary unit		
R410A pre-charged on delivery	kg	2.8	3.3	3.9	4
Fans					
Number of fans (BLDC/54)	-		2		
Airflow	m^3/h		2500~6600		
Total power of fans	kW		0.18		0.22
External static pressure	Pa		0 / 30Pa		
Hydraulic data					
Type of exchanger	-		Brazed plate exchanger		
Rated water flow Heating/Cooling	l/s	0.52 / 0.56	0.66 / 0.67	0.75 / 0.79	0.82 / 1.03
Min./max. flow	l/s	1.2 / 2.7	1.2 / 3.4	1.6 / 3.8	1.6 / 4.3
Min. water capacity of the installation – Comfort (Cooling mode)	l	37	48	53	59
Min. water capacity of the installation – Process (Cooling mode)	l	73	93	104	116
Diameter and type of hydraulic connection	inches		1”		
Expansion vessel – not included, to be provided by the installer	L		To be sized by facility		
Pump – HP	kW		0.37		
Electrical data					
Supply voltage	V/Ph/Hz		230 / 1 / 50		
Max. current	A	24	33		36

Note: The power and performance are specified without the pump. Rated cooling conditions: water cycle: 7/12°C – outside temperature: 35°C. Rated heating conditions: water cycle:: 40/45°C – outside temperature: 6°C WB. Seasonal energy performance is specified according to European standard EN-14825.

Optional controls and accessories available



Modular kit: Remote temperature sensor for modular concept (available as an option)

Samurai M Chiller and heat pump unit

Air cooled Scroll Inverter compressor



Ultra compact

With its very small footprint, the Samurai M is the perfect product for the replacement market. Only a 2.7m² footprint for 130 kW of heating.

Very low noise level

The use of Inverter technology (compressor and fans), coupled with the use of acoustic lower panels as standard, brings you the quietest range on the market. A low noise option is also available with an average lower sound level of 6 dB(A).

Excellent energy performance

with optional low noise level SEER 4.71

Our chiller and heat pump units are designed to meet tomorrow's energy efficiency requirements today in line with the latest European ecodesign regulations.

The 'all included' design as standard

Samurai M models are fully equipped with a range of components included as standard. Components include: low leaving water temperature kit, master/slave mode, MODBUS/BACNET interfaces, anti-corrosion protection of fins, flow switch and water filter etc.This range is very easy to select and install, with the ALL INCLUDED design and easy-to-use onboard touch control.

Wide operating ranges

(Fig. 1)

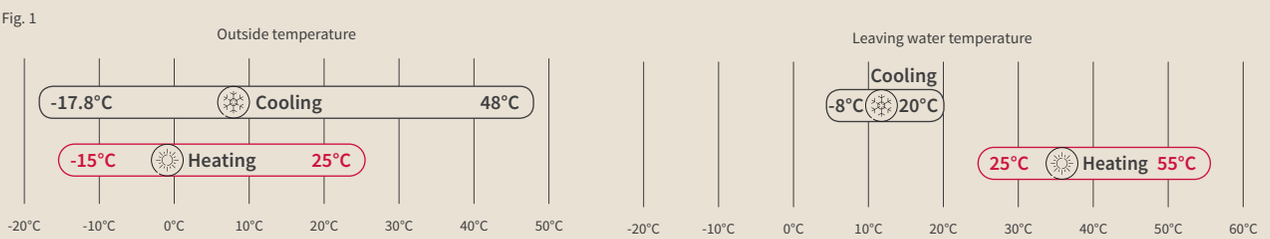
Versatile

Configurable in cooling only mode by changing the dip switches. Modular design: onboard controls to operate up to 16 units in a cascade system.

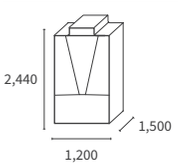
Operational safety

Samurai M chillers feature two to four independent refrigeration circuits from 80 kW cooling, providing operational safety for the user. The automatic distribution of operating hours for the compressors, increases component durability. The modular design ensures continuous operation in the event of one unit failing, and limits site redundancy investment. In addition the multi circuit modular design considerably reduces the potential F-Gas impact in the event of a leak.

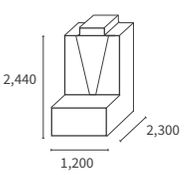
Fig. 1



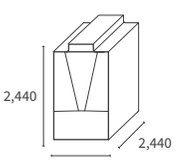
Heat pump models



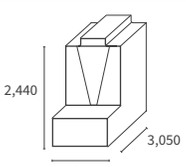
RCMA 18AN
RCMA 24AN
(Version with constant speed pump kit or without pump kit)



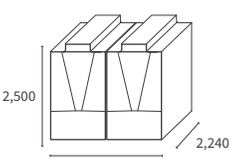
RCMA 18AN
RCMA 24AN
(Version with variable speed pump kit)



RCMA 30AN
RCMA 40AN
RCMA 50AN
(Version with constant speed pump kit or without pump kit)



RCMA 30AN
RCMA 40AN
RCMA 50AN
(Version with variable speed pump kit)



RCMA 60AN RCMA 75AN
RCMA 90AN RCMA 100AN
(Version with variable speed pump kit or without pump kit)

Samurai M – heat pump

		Unit	RHMA-18AN	RHMA-24AN	RHMA-30AN	RHMA-40AN	RHMA-50AN	RHMA-60AN	RHMA-75AN	RHMA-90AN	RHMA-100AN
Performance											
Nominal Cooling capacity		kW	44	60	78	99	122	159	188	221	254
Rated power input Cooling		kW	15.49	21.51	25.08	33.0	41.36	50.96	61.84	71.75	83.01
EER		-	2.84	2.79	3.11	3.0	2.95	3.12	3.04	3.08	3.06
SEER		-	4.38	4.50	4.43	4.24	4.42	4.24	4.28	4.17	4.34
ηs, c		%	172.2	177.0	174.2	166.6	173.8	166.6	168.2	163.8	170.6
SEPR MT		-	3.76	3.77	3.91	3.53	3.58	2.79	2.70	3.78	3.70
SEPR HT		-	5.70	5.96	5.58	5.69	5.84	5.97	5.81	5.99	6.02
Nominal Heating capacity		kW	50	61	87	99	132	161	191	231	254
Rated power input Heating		kW	16.39	19.87	26.93	31.73	44.44	49.39	59.32	71.74	83.01
Heating capacity at -7°C (water outlet 45°C)		kW	29.35	35.8	50.4	56.26	73.94	95.97	111.39	133.95	148.62
Heating capacity at -15°C (water outlet 40°C)		kW	25.53	31.59	42.4	48.85	64.26	81.4	94.32	118.39	128.91
COP		-	3.05	3.07	3.23	3.12	2.97	3.26	3.22	3.22	3.06
SCOP		-	3.45	3.44	3.4	3.41	3.54	3.32	3.36	3.47	3.3
ηs, h		%	135	134.6	133	133.4	138.6	129.8	131.4	135.8	129
Sound power level Cooling Standard / Low		dB(A)	80 / 75	82 / 77	81 / 77	83 / 79	84 / 80	86 / 82	87 / 82	88 / 83	89 / 84
Sound power level Heating Standard / Low		dB(A)	82 / 72	84 / 76	84 / 76	85 / 80	89 / 81	87 / 82	88 / 82	89 / 83	90 / 84
Sound pressure level 1m Cooling Standard/Low		dB(A)	66 / 61	68 / 63	66 / 62	68 / 64	69 / 65	70 / 66	71 / 66	72 / 67	73 / 68
Sound pressure level 1m Heating Standard/Low		dB(A)	68 / 63	70 / 65	69 / 65	70 / 65	74 / 68	71 / 66	72 / 67	73 / 68	74 / 68
Sound pressure level 10m Cooling Standard/Low		dB(A)	51 / 46	53 / 48	52 / 48	54 / 50	55 / 51	57 / 53	58 / 53	59 / 54	60 / 55
Sound pressure level 10m Heating Standard/Low		dB(A)	53 / 48	55 / 50	55 / 51	56 / 51	60 / 55	58 / 53	59 / 54	60 / 54	61 / 55
Operating ranges at outside Temp°. - Cooling mode		°C	-17.8~48								
Operating ranges at outside Temp°. - Heating mode		°C	-15~25								
T° at water outlet – Cooling mode		°C	-8~20								
T° at water outlet – Heating mode		°C	25~55								
Dimensions and weight											
Height		mm	2440					2500			
Width		mm	1200					3050			
Length		mm	1500		2240			2240			
Length (constant pump)		mm	1500		2240			-	-	-	-
Length (variable flow pump)		mm	2300		3050			2240			
Net weight (without pump / with pump)		kg	587 / 782	610 / 805	893 / 1105	920 / 1132	999 / 1211	1922 / 2115	2003 / 2196	2235 / 2428	2316 / 2509
Compressor											
Type of compressor		-	Scroll DC Inverter + Scroll								
Compressor number		-	2		3		4	5	6	7	8
Adjustment range		%	33~100	25~100	20~100	15~100	12~100	10~100	8~100	7~100	6~100
R410A prefilled on delivery	Circuit 1	kg	9.5	12.3	8.5	9.5	11.4	9.5	11	9.5	11.4
	Circuit 2	kg	-	-	9.1	11	11.4	10	10.5	11	11.4
	Circuit 3	kg	-	-		-	-	10	10.5	11.4	
	Circuit 4	kg	-	-	-	-	-	-	-	11.4	
Fans / Air exchangers											
Air heat exchanger		-	Cu/Al fin exchanger								
Number of fans (type EC)		-	1		2			3		4	
Airflow		m^3/min	324.4	349.4	541.1	604.9	702.5	1024.5	1132.4	1370.1	1510
Total power of fans		kW	0.87	1.06	0.95	1.17	1.61	2.41	2.97	3.27	3.95
Hydraulic data											
Water heat exchanger		-	Brazed plate exchanger								
Rated water flow		l/s	2.1	2.9	3.7	4.7	5.8	7.6	9.0	10.6	12.1
Min./max. flow		l/s	1.1 ~ 2.8	1.4 ~ 3.7	1.9 ~ 5.0	2.4 ~ 6.2	3.0 ~ 7.8	3.7 ~ 11.1	4.5 ~13.6	5.3 ~ 15.8	6.0 ~ 17.9
Min. water capacity (without pump kit)		l	7	10	14	16	16	27	29	32	34
Min. water capacity of the installation – Comfort (Cooling mode)		l	148	199	259	327	406	527	622	734	842
Min. water capacity of the installation – Process (Cooling mode)		l	291	392	509	644	799	1038	1224	1445	1658
Pressure drop in the exchanger		kPa	32	25	27	30	36	25	32	41	38
Pump type		-	Constant or variable flow pump (depending on the model)								
Diameter and type of hydraulic connection		inches	2" Victaulic		2 ½" Victaulic			4" Victaulic			
Electrical data											
Supply voltage		V/Ph/Hz	400 / 3 / 50								
Max. current		A	35	38	61	72	85	119	133	166	180

Note: The power and performance are specified without the pump. Rated cooling conditions: water cycle: 7/12°C – outside temperature: 35°C. Rated heating conditions: water cycle: 40/45°C – outside temperature: 6°C WB. Seasonal energy performance is specified according to European standard EN-14825.

Order optional accessories separately



Separate wired remote control



Condenser coil guard



Anti-vibration spring type



Anti-vibration neoprene pad



Modular kit:
Remote temperature sensor

Optional configurations possible



Single constant pump kit configuration
(factory-mounted)



Single variable pump kit configuration
(factory-mounted)



Low noise level (-6dB (A))
(factory-mounted)

Samurai L cooling only chiller

Air cooled
Twin modulating screw



New Twin screw modulating compressor

HITACHI's Samurai L range features a new TWIN screw compressor optimized for R134a refrigerant, with a 25% to 100% continuous capacity control system. With this modulating design, the chiller always meets the demand, and the temperature of the leaving water is accurately maintained without the need for expensive additional accessories.
- This compressor is equipped with a cyclonic oil separator, which does not require maintenance.
- Equipped with new bearings, the overhaul period is extended to 40,000 hours of operation. (Fig. 1)

Precise temperature control

Combining the continuous capacity control compressor with "HITACHI's unique electronic controls" allows the precise control of the leaving water temperature, regardless of the cooling load. This control is a benefit for both comfort applications (commercial buildings) and process applications (industry). (Fig. 2)

Modular design

Combine as many as 8 modules for unparalleled installation flexibility and make use of the chiller's small footprint to fit it into whatever space is available for the project. (Fig. 3)

Two operating modes

Two operating modes are available as standard for perfect adaptability to both the comfort and process markets:
- Standard mode > constant leaving water temperature> all compressors are running at the same load.
- High-energy efficiency mode > intelligent control of the compressor's start/stop function to optimize the system's energy performance.

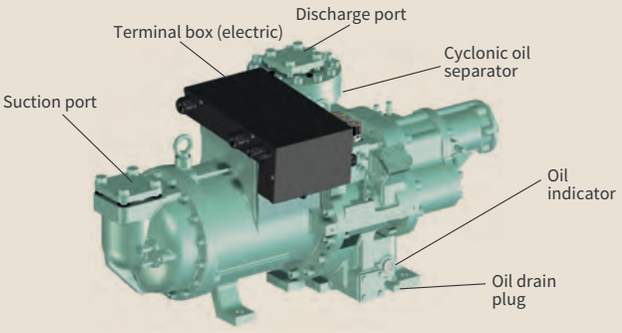
Partial heat recovery

As an option, you can equip the Samurai L unit with an additional heat exchanger for partial heat recovery, which can be used for the preheating of a DHW circuit or for space heating.

Large operating ranges

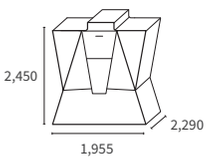
With the Samurai L units you can match the needs of multiple cooling applications. Optionally, the leaving water temperature can reach down to -10°C in cooling mode. (Fig. 4)

Fig. 1



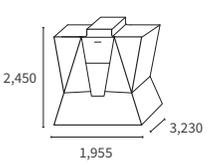
Single cooling models

2 fans



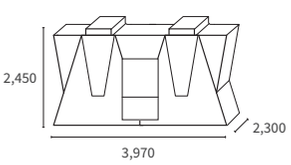
RCME-60AH2
RCME-70AH2

3 fans



RCME-80AH2
RCME-90AH2

4 fans



RCME-120AH2
RCME-140AH2

Samurai L - air cooled chiller

	Unit	RCME-60AH2	RCME-70AH2	RCME-80AH2	RCME-90AH2	RCME-120AH2	RCME-140AH2
Performance							
Nominal Cooling capacity	kW	160	180	205	255	320	360
Rated power input in Cooling mode	kW	51.00	57.30	64.90	70.30	101.90	114.60
EER	-	3.14	3.14	3.16	3.20	3.14	3.14
SEER	-	4.11	4.13	4.12	4.12	4.18	4.19
SEPR MT	-	3.24	3.24	3.26	3.30	3.25	3.25
SEPR HT	-	5.11	5.11	5.15	5.20	5.13	5.13
Sound pressure level**	dB(A)	83	84	85	86	86	87
Sound power	dB(A)	96	97	98	99	99	100
Operating ranges at outside Temp°. - Cooling mode	°C	-15~46					
T° at water outlet – Cooling mode	°C	+5~15 (standard) / -10~5 (low temperature option) / +15~30 (high temperature option)					
Dimensions and weight							
Dimensions (height x width x length)	mm	2450 x 1955 x 2290		2450 x 1955 x 3230		2450 x 3970 x 2300	
Net weight	kg	1300	1340	1590	1680	2640	2720
Compressor							
Type of compressor	-	Twin semi-hermetic screw					
Compressor number	-	1				2	
Number of circuits	-	1				2	
Capacity range	%	25~100					
Refrigerant	-	R134A					
Refrigerant charge	kg	29	36	47	47	58	72
Fans / Air exchangers							
Air heat exchanger	-	Cu/Al blade exchanger					
Number of fans (type EC)	-	4		6		8	
Hydraulic data							
Water heat exchanger	-	Brazed plate exchanger					
Water flow min/rated/max	m^3/h	17.2 / 27.5 / 39.3	19.4 / 31.0 / 44.2	22.0 / 35.3 / 50.4	24.2 / 38.7 / 55.3	34.4 / 55.0 / 78.6	38.7 / 61.9 / 88.5
Min. water volume	m^3	0.77	0.76	0.98	0.95	1.54	1.52
Pressure drop	kPa	16.6	15.9	20.1	23.8	16.6	15.9
Diameter and type of hydraulic connection	inches	2 1/2" victaulic					
Quantity of hydraulic connections	-	1x input, 1x output				2x input, 2x output	
Electrical data							
Supply voltage	V/Ph/Hz	400 / 3 / 50 + N					
Max. current / starting current	A	118 / 240	132 / 240	140 / 240	143 / 240	237 / 259	264 / 262

Note: The power and performance are specified without the pump. Rated cooling conditions: water cycle: 7/12°C – outside temperature: 35°C. Rated heating conditions: water cycle: 40/45°C – outside temperature: 6°C WB. Seasonal energy performance is specified according to European standard EN-14825. *Preliminary data **Acoustic levels are specified at 10m, facing the unit.

Fig. 2

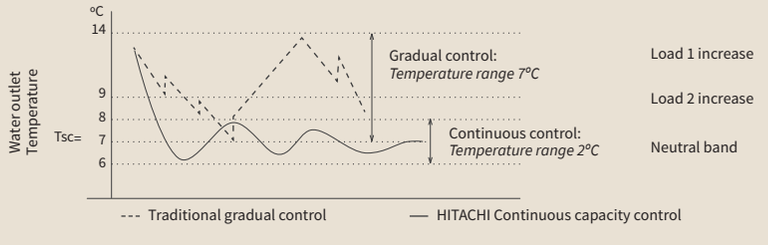


Fig. 3

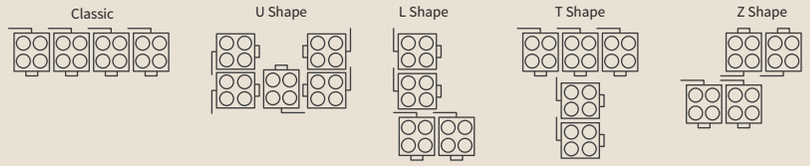
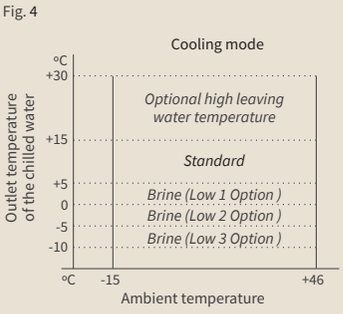


Fig. 4



Options and accessories (see pages 310-311)

Samurai L
Heat pump

Air cooled
Twin modulating screw



New Twin screw modulating compressor

HITACHI's Samurai L range features a new TWIN screw compressor optimized for R134a refrigerant, with a 25% to 100% continuous capacity control system. With this modulating design, the chiller always meets the demand, and the temperature of the leaving water is accurately maintained without the need for expensive additional accessories.

- This compressor is equipped with a cyclonic oil separator, which does not require maintenance.
- Equipped with new bearings, the overhaul period is extended to 40,000 hours of operation. (Fig. 1)

Precise temperature control

Combining the continuous capacity control compressor with "HITACHI's unique electronic controls" allows the precise control of the leaving water temperature, regardless of the cooling load. This control is a benefit for both comfort applications (commercial buildings) and process applications (industry). (Fig. 2)

Modular design

Combine as many as 8 modules for unparalleled installation flexibility and make use of the heat pump's small footprint to fit it into whatever space is available for the project. (Fig. 3)

Two installation options

Two operating modes are available as standard for perfect adaptability to both the comfort and process markets:

- Standard mode > constant leaving water temperature > all the compressors are running at the same load.
- High-energy efficiency mode > intelligent control of the compressor's start/stop function to optimize the system's energy performance.

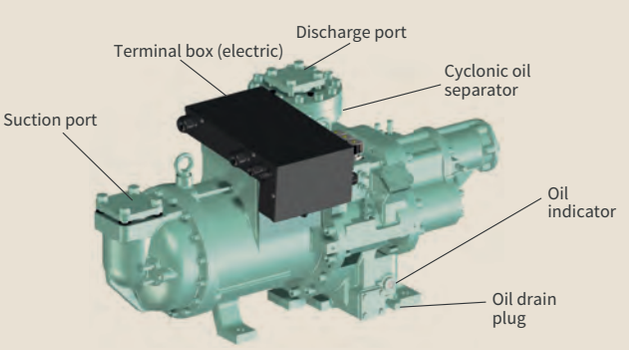
Partial heat recovery

As an option, you can equip the Samurai L unit with an additional heat exchanger for partial heat recovery, which can be used for the preheating of a DHW circuit or for space heating.

Large operating ranges

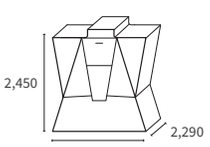
With the Samurai L units you can match the needs of multiple cooling applications.. Optionally, the leaving water temperature can reach down to -10°C in cooling mode and up to 55°C in heating mode. (Fig. 4)

Fig. 1



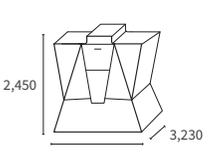
Single heat pump models

2 fans



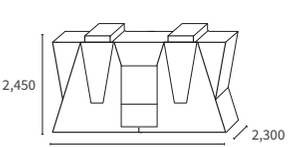
RHME-60AH2
RHME-70AH2

3 fans



RHME-80AH2
RHME-90AH2

4 fans



RHME-120AH2
RHME-140AH2

Samurai L air cooled heat pump

	Unit	RHME-60AH2	RHME-70AH2	RHME-80AH2	RHME-90AH2	RHME-120AH2	RHME-140AH2
Performance							
Nominal Cooling capacity	kW	150	170	195	210	300	340
Rated power input in Cooling mode	kW	50.8	57.6	65.7	69.8	101.7	115.3
EER	-	2.95		2.97	3.01	2.95	
SEER	-	3.88		3.92	3.96	3.94	3.93
Nominal Heating capacity	kW	145		185		290	
Rated power input in Heating mode	kW	51.2		64.9		102.5	
Heating capacity at -5°C (water outlet 55°C)	kW	84	84	107.2	107.2	168	168
Heating capacity at -10°C (water outlet 50°C)	kW	74	74	95.4	95.4	148.1	148.1
COP	-	2.83		2.85		2.83	
SCOP LT	-	3.22		3.25		3.22	
Sound pressure level**	dB(A)	83	84	85	86	86	87
Sound power	dB(A)	96	97	98	99	99	100
Operating ranges at outside Temp°. - Cooling mode	°C	-15~46					
Operating ranges at outside Temp°. - Heating mode	°C	-9.5~21 (dry bulb) / -10~15.5 (wet bulb)					
T° at water outlet – Cooling mode	°C	5~15 (standard) / -10~5 (low temperature option) / 15~30 (high temperature option)					
T° at water outlet – Heating mode	°C	35~55					
Dimensions and weight							
Dimensions (height x width x length)	mm	2450 x 1955 x 2290		2450 x 1955 x 3230		2450 x 3970 x 2300	
Net weight	kg	1400	1420	1680	1760	2820	2880
Compressor							
Type of compressor	-	Twin semi-hermetic screw					
Compressor number	-	1				2	
Number of circuits	-	1				2	
Capacity range	%	25~100					
Refrigerant	-	R134A					
Refrigerant charge	kg	37	39	58	60	74	78
Fans / Air exchangers							
Air heat exchanger	-	Cu/Al fin exchanger					
Number of fans (type EC)	-	4		6		8	
Hydraulic data							
Water heat exchanger	-	Brazed plate exchanger					
Water flow min/rated/max	m^3/h	16.1 / 24.9 / 36.9	18.3 / 24.9 / 41.8	21.0 / 31.8 / 47.9	22.6 / 31.8 / 51.6	32.3 / 49.9 / 73.7	36.6 / 49.9 / 83.5
Min. water volume	m^3	0.72		0.94	0.89	1.44	
Pressure drop	kPa	10.7		13.7		10.7	
Diameter and type of hydraulic connection	inches	2 1/2" victaulic					
Quantity of hydraulic connections	-	1x input, 1x output				2x input, 2x output	
Electrical data							
Supply voltage	V/Ph/Hz	400/3/50 + N					
Max. current / starting current	A	119/240	133/240	140/240	143/240	238/259	266/262

Note: The power and performance are specified without the pump. Rated cooling conditions: water cycle: 7/12°C – outside temperature: 35°C. Rated heating conditions: water cycle: 40/45°C – outside temperature: 6°C WB. Seasonal energy performance is specified according to European standard EN-14825. *Preliminary data **Acoustic levels are specified at 10m, facing the unit.

Fig. 2

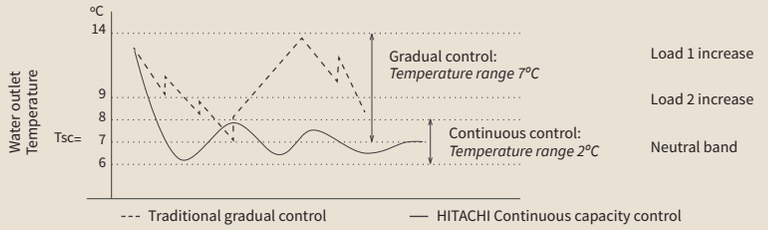


Fig. 3

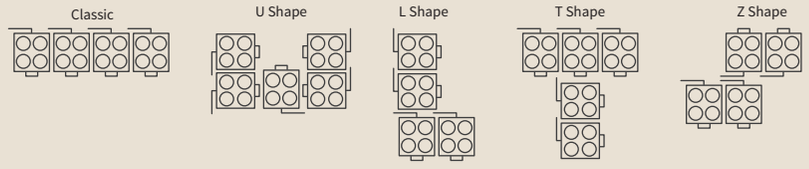
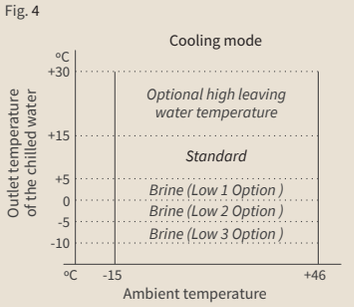
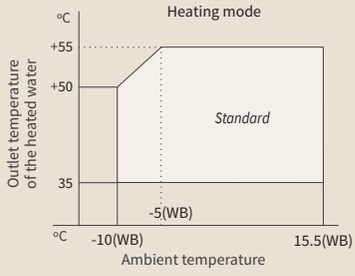


Fig. 4





Options and accessories (see pages 310-311)

Samurai L Chiller

Water cooled unit
Twin modulating screw



Ultra compact

With a footprint equivalent to 1m² for every 250 kW of cooling provided, the Samurai L water cooled unit is the most compact unit on the market.

New Twin screw modulating compressor

HITACHI's Samurai L range features a new TWIN screw compressor optimized for R134a and R513A refrigerants, with a 25% to 100% continuous capacity control system. With this modulating design, the chiller always meets the demand, and the temperature of the leaving water is accurately maintained without the need for expensive additional accessories.

- This compressor is equipped with a cyclonic oil separator, which does not require maintenance.
- Equipped with new bearings, the overhaul period is extended to 40,000 hours of operation. (Fig. 1).

New R513A refrigerant models

HITACHI's new units have the same capacity performance as the R134a range but with a lower GWP refrigerant for more environmentally friendly operation.

Precise temperature control

Combining the continuous capacity control compressor with "HITACHI's unique electronic controls" allows the precise control of the leaving water temperature, regardless of the cooling load. This control is a benefit for both comfort applications (commercial buildings) and process applications (industry). (Fig. 2)

Modular design

Combine as many as 8 modules for unparalleled installation options and make use of the chiller unit's small footprint to fit it into whatever space is available for the project. The unit will fit in lifts and will even go through a standard door making even the tightest plant rooms accessible.

Two operation modes

Two operating modes are available as standard for perfect adaptability to both the comfort and process markets:

- Standard mode > constant leaving water temperature > all the compressors are running at the same load.
- High-energy efficiency mode > intelligent control of the compressor's start/stop function to optimize the system's energy performance.

Cooling only unit with heat pump option

The System can also work as a heat pump by moving control from the evaporator side to the condenser side. (Fig. 3)

Fig. 2

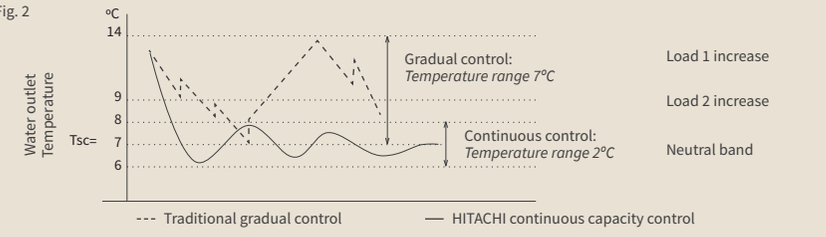


Fig. 1

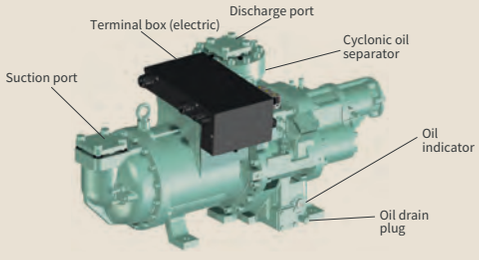
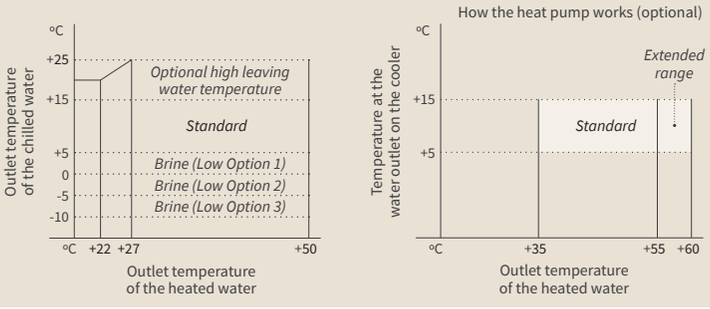
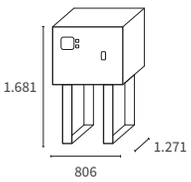


Fig. 3



Single cooling models



RCME-40WH1 RCME-50WH1
RCME-60WH1 RCME-70WH1

Samurai L – water cooled unit

		R134A REFRIGERANT				R513A REFRIGERANT			
	Unit	RCME-40WH1	RCME-50WH1	RCME-60WH1	RCME-70WH1	RCME-40WH1	RCME-50WH1	RCME-60WH1	RCME-70WH1
Performance									
Nominal Cooling capacity	kW	140	180	220	250	140	180	220	250
Rated power input Cooling	kW	28	37	45	51	29.4	38.1	47.7	53.9
EER	-	5.00	4.96	4.85	4.87	4.76	4.72	4.61	4.64
SEER	-	5.27	5.46	5.51	5.52	5.10	5.25	5.28	5.30
SEPR MT	-	4.88	4.85	4.89	4.90	4.65	4.62	4.65	4.67
SEPR HT	-	7.58	7.51	7.57	7.59	7.22	7.17	7.20	7.24
Nominal Heating capacity (option)	kW	160	205	252	287	162	209	256	291
Rated power input in Heating mode (optional)	kW	33.40	43.30	54.10	61.20	35.4	45.9	57.4	64.9
COP (optional)	-	4.79	4.76	4.67	4.69	4.57	4.54	4.46	4.48
SCOP LT (optional)	-	5.90	5.86	5.75	5.78	5.70	5.66	5.55	5.58
SCOP MT (optional)	-	4.42	4.39	4.32	4.33	4.24	4.21	4.14	4.15
Sound pressure level*	dB(A)	60	61	62	63	60	61	62	63
Sound power	dB(A)	88	89	90	91	88	89	90	91
Temp° at water outlet – Cooling mode (evaporator)	°C	5~15 standard / -10~5 (low temperature option) / 15~25 (high temperature option)				5~15 standard / -10~5 (low temperature option) / 15~25 (high temperature option)			
Temp° at water outlet – Cooling mode (condenser)	°C	22~50				22~47			
Temp° at water outlet – Heating mode (condenser)	°C	35~60 (heat pump option)				35~57 (heat pump option)			
Dimensions and weight									
Dimensions (height x width x length)	mm	1681 x 806 x 1271				1681 x 806 x 1271			
Net weight	kg	860	950	1040	1075	860	950	1040	1075
Compressor									
Type of compressor	-	Twin semi-hermetic screw				Twin semi-hermetic screw			
Compressor number	-	1				1			
Circuit number	-	1				1			
Capacity range	%	25~100				25~100			
Refrigerant	-	R134A				R513A			
Quantity of refrigerant	kg	19	20	24	29	15	17.5	22.5	28
Hydraulic data									
Type of exchanger (condenser)	-	Brazed plate exchanger				Brazed plate exchanger			
Type of exchanger (evaporator)	-	Brazed plate exchanger				Brazed plate exchanger			
Rated water flow (evaporator / condenser)	m^3/h	24.1 / 28.9	31 / 37.2	37.8 / 45.6	43 / 51.8	24.1 / 28.9	31 / 37.2	37.8 / 45.6	43 / 51.8
Min. water flow (evaporator)	m^3/h	15.1	19.4	23.7	26.9	15.1	19.4	23.7	26.9
Max. flow (evaporator / condenser)	m^3/h	52.3 / 62.8	67.3 / 80.9	82.3 / 83.8	83.8 / 83.8	52.3 / 62.8	67.3 / 80.9	82.3 / 83.8	83.8 / 83.8
Min. water volume	m^3	0.51	0.65	0.8	0.9	0.51	0.65	0.8	0.9
Water pressure drop (evaporator / condenser)	kPa	20 / 21.3	21.5 / 23.8	19.7 / 26.4	25 / 27.8	20 / 21.3	21.5 / 23.8	19.7 / 26.4	25 / 27.8
Diameter and type of hydraulic connection	-	2 1/2" victaulic				2 1/2" victaulic			
Quantity of hydraulic connections	-	1x input, 1x output per exchanger				1x input, 1x output per exchanger			
Electrical data									
Supply voltage	V/Ph/Hz	400 / 3 / 50 + N				400 / 3 / 50 + N			
Max. current / starting current	A	66.2 / 179	84.6 / 240	105 / 240	118 / 240	66.2 / 179	84.6 / 240	105 / 240	118 / 240

Note: The power and performance are specified without the pump. Rated cooling conditions: water cycle: 7/12°C – outside temperature: 35°C. Rated heating conditions: water cycle: 40/45°C – outside temperature: 6°C WB. Seasonal energy performance is specified according to the European standard EN-14825.**Acoustic levels are specified at 10m, facing the unit.

Options and accessories (see pages 310-311)

Samurai L

Condenserless
Twin modulating screw



Ultra compact

With a footprint equivalent to 1m2 for every 250 kW of cooling provided, the Samurai L condenserless unit is the most compact unit on the market.

New Twin screw modulating compressor

HITACHI's Samurai L range features a new TWIN screw compressor optimized for R134a and R513A refrigerants, with a 25% to 100% continuous capacity control system. With this modulating design, the chiller always meets the demand, and the temperature of the leaving water is accurately maintained without the need for expensive additional accessories.

- This compressor is equipped with a cyclonic oil separator, which does not require maintenance.
- Equipped with new bearings, the overhaul period is extended to 40,000 hours of operation. (Fig. 1)

Precise temperature control

Combining the continuous capacity control compressor with "HITACHI's unique electronic controls" allows the precise control of the leaving water temperature, regardless of the cooling load. This control is a benefit for both comfort applications (commercial buildings) and process applications (industry). (Fig. 2)

New R513A refrigerant models

HITACHI's new units have the same capacity performance as the R134a range but with a lower GWP refrigerant for more environmentally friendly operation.

Two operation modes

Two operating modes are available as standard for perfect adaptability to both the comfort and process markets:

- Standard mode > constant leaving water temperature > all the compressors are running at the same load.
- High-energy efficiency mode > intelligent control of the compressor's start/stop function to optimize the system's energy performance.

Flexible installation

Samurai L condenserless models offer flexible installation options: the unit is compact and the condenser can be up to 30 m away.
The wide operating ranges provide flexibility when it comes to sizing the condenser. (Fig. 3)

Modular design

Combine as many as 8 modules for unparalleled installation options and make use of the chiller unit's small footprint to fit it into whatever space is available for the project. The unit will fit in lifts and will even go through a standard door making even the tightest plant rooms accessible.

Fig. 2

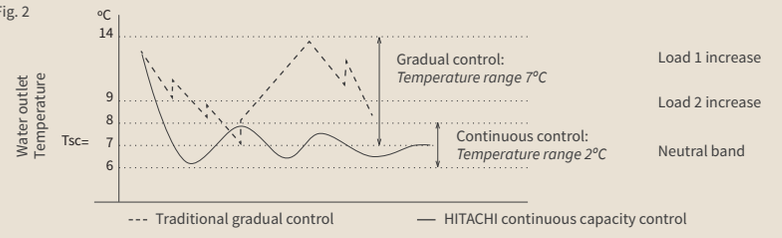


Fig. 1

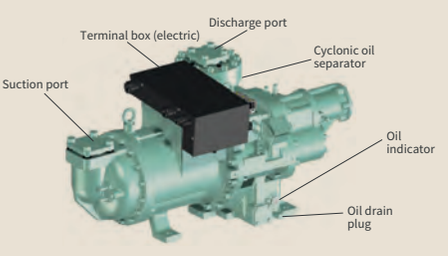
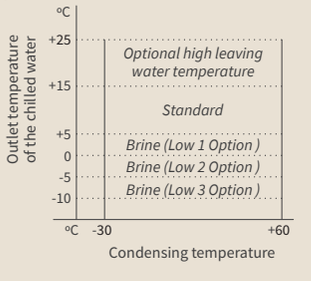
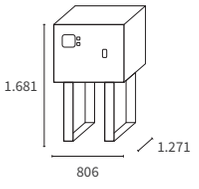


Fig. 3



Single cooling models



RCME-40CLH1
RCME-50CLH1
RCME-60CLH1

Samurai L – cooling only condenserless chiller

		R134A REFRIGERANT			R513A REFRIGERANT		
	Unit	RCME-40CLH1	RCME-50CLH1	RCME-60CLH1	RCME-40CLH1	RCME-50CLH1	RCME-60CLH1
Performance							
Nominal Cooling capacity	kW	135	175	215	135	175	215
Rated power input Cooling	kW	32	42	52	32	42	52
EER	-	4.22	4.19	4.10	4.22	4.19	4.10
Sound pressure level*	dB(A)	60	61	62	60	61	62
Sound power	dB(A)	88	89	90	88	89	90
Temp° at water outlet – Cooling mode (evaporator)	°C	5~15 standard / -5~5 (low temperature option) / 15~25 (high temperature option)			5~15 standard / -5~5 (low temperature option) / 15~25 (high temperature option)		
Condensing temperature – Cooling mode (condenser)	°C	30~60			30~57		
Dimensions and weight							
Dimensions (height x width x length)	mm	1681 x 806 x 1271			1681 x 806 x 1271		
Net weight	kg	765	835	900	765	835	900
Compressor							
Type of compressor	-	Twin semi-hermetic screw			Twin semi-hermetic screw		
Compressor number	-	1			1		
Circuit number	-	1			1		
Capacity range	%	25~100			25~100		
Refrigerant	-	R134A			R513A		
Air exchanger							
Type of exchanger	-	Remote (provided on site)			Remote (provided on site)		
Diameter of pipes (Liq / Gas)	inches	1 1/8 ~ 2 1/8			1 1/8 ~ 2 1/8		
Hydraulic data							
Type of exchanger	-	Brazed plate exchanger			Brazed plate exchanger		
Rated water flow	m^3/h	23.2	30.1	37.0	23.2	30.1	37.0
Min. water flow	m^3/h	14.5	18.8	23.1	14.5	18.8	23.1
Max. flow	m^3/h	50.5	65.4	80.4	50.5	65.4	80.4
Min. water volume	m^3	0.49	0.63	0.78	0.49	0.63	0.78
Pressure drop	kPa	18.7	20.4	18.9	18.7	20.4	18.9
Diameter and type of hydraulic connection	-	2 1/2" victaulic			2 1/2" victaulic		
Quantity of hydraulic connections	-	1x input, 1x output			1x input, 1x output		
Electrical data							
Supply voltage	V/Ph/Hz	400 / 3 / 50 + N			400 / 3 / 50 + N		
Max. current / starting current	A	72.7 / 179	92.7 / 240	116 / 240	72.7 / 179	92.7 / 240	116 / 240

Note: The power and performance are specified without the pump. Rated cooling conditions: water cycle: 7/12°C – outside temperature: 35°C. Rated heating conditions: water cycle: 40/45°C – outside temperature: 6°C WB. Seasonal energy performance is specified according to the European standard EN-14825.** Acoustic levels are specified at 10m, facing the unit.

Options and accessories (see pages 310-311)

Options and accessories

Samurai L options

		RCME-(60-90)AH2	RCME-(120-140)AH2	RHME-(60-90)AH2	RHME-(120-140)AH2	RCME-WH1	RCME-CLH1
Unit options	Wooden base	●		●		Standard	Standard
	Wooden skid	●		●			
	Crate packaging					●	●
	Lower safety cover on the electric box	●	●	●	●		
	Lower aesthetic panels on the unit – ST	●	●	●	●		
	Lower aesthetic panels on the unit – LN	● (80-90AH2)		● (80-90AH2)			
	Coil guard	●	●	●	●		
	Air heat exchangers heavy corrosion protection	●	●	●	●		
	Power cable routing					●	●
	Power cable routing W	●		●			
	Power cable routing WO	●		●			
	Low noise level	●	●	●	●	●	●
	Very low noise level	●	●	●	●	●	●
	Extra low noise level	●	●	●	●		
	Factory performance tests	●	●	●	●	●	
Cooling circuit options	Dual safety valve	●	●	●	●	●	●
	Suction safety valve					●	●
	Discharge valve	●	●	●	●	●	Standard
	Suction valve	●	●			●	●
	Differential water pressure switch	●	●	●	●	●	●
	Partial heat recovery	●	●	●	●	●	
Hydraulic options	Water cooler heater	●	●	●	●	●	●
	High water outlet temperature	●	●	●	●	●	●
	Common water pipe		●		●		
	Stainless steel water pipe	●	●	●	●	●	●
	Water pressure port	●	●	●	●	●	●
	Single pump kit – standard pressure (constant or variable speed)	●	●	●	●		
	Standard pump kit – high pressure (constant or variable speed)	●	●	●	●		
	Twin pump kit – standard pressure (constant or variable speed)	●	●	●	●		
	Twin pump kit – high pressure (constant or variable speed)	●	●	●	●		
	Brine (low 1): 5 to 0°C	●	●	●	●	●	●
	Brine (low 2): 0 to -5°C	●	●	●	●	●	●
	Brine (low 3): -5 to -10°C	●	●	●	●	●	●
	High water pressure PN16 16 bars	●	●	●	●	●	●
Control options	Magnetic circuit breaker	●	●	●	●	●	●
	Energy meter	●	●	●	●	●	●
	LCD in multiple languages	●	●	●	●	●	●
	Heat pump operation					●	

Samurai L accessories

Name	Code
Flow switch	CHL-WFS-01
2,1/2” water filter	CHL-WST-01
5” RC/HM1E-AH2 and RCME-CLH1 water filter	CHL-WST-04
6” RCME-WH1 and RCME-CLH1 water filter	CHL-WST-05
Water flange connection 2,1/2” (PN16)	CHL-FLA-01
Common water pipe RCME-WH1 and RCME-CLH1	CHL-CWP-05 / CHL-CWP-06
Common water pipe RC/HM1E-AH2	CHL-CWP-07 / CHL-CWP-08
Anti-vibration rubber mats	CHL-AVR-02
Anti-vibration spring system RCME-CLH1	CHL-AVS-04
Anti-vibration spring system RCME-WH1	CHL-AVS-05
Anti-vibration spring system RC/HM1E-AH2	CHL-AVS-06 (60-70AH2) / CHL-AVS-07 (80-90AH2) / CHL-AVS-08 (120-140AH2)
Modbus	CHL-MSB-02
Bacnet	CHL-BAC-01
Energy meter (200A)	CHL-PMM-04
Energy meter (400A)	CHL-PMM-05
Energy meter (1000A)	CHL-PMM-06



MODBUS interface

CHL-MBS-02



BACnet interface

CHL-BAC-01



Energy meter

CLH-PMM (04-05-06)

Hi-Toolkit
for industry

Samurai sizing tool

Exclusive to Hitachi: all of our Katana indoor units are compatible with the Samurai ranges of chillers and heat pumps as well as the Yutaki air/water heat pump range.

They can be operated by a wide range of remote controls, from the simplest to the most sophisticated, to meet any requirement. The option to adjust the power of these indoor units brings a unique flexibility to the market, responding to the scalability of buildings at a lower cost.



Chillers
Katana range
Indoor units

Available 2022



NEW

For more information, please contact your sales representative.

Katana indoor units

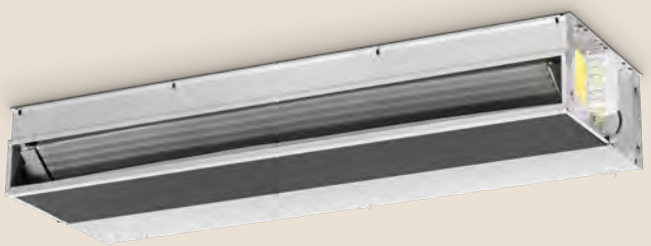
NEW FOR 2022

Console fan coil with AC motor



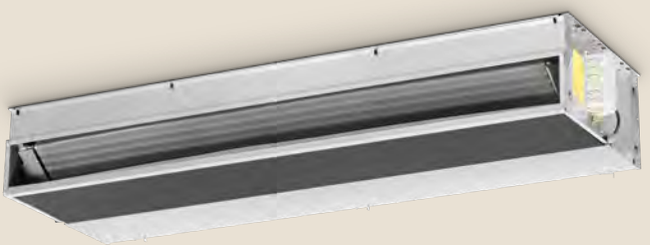
- Available from 1.2kw to 7.42kw.
- Floor-mounted, vertical wall-mounted, horizontal wall-mounted, or mount in suspended ceilings.
- Remote control built-in or wall-mounted.

Ducted fan coil with AC motor



- Available from 2.2kw to 8.62kw.
- Static pressure up to 80 Pa.
- Airflow up to 2100m³/h.
- Horizontal or vertical installation.

Ducted fan coil with AC motor - high static



- Available from 5.8kw to 16.7kw.
- Static pressure up to 160 Pa.
- Airflow up to 3850m³/h.
- Low noise.

Cassette with AC motor



- Available from 2.3 to 9.7 kW.
- Available as 600x600 and 800x800.
- Remote controls can be wired or infrared.

Cassette with EC motor



- **EC motor.**
- Available from 2.7 to 13.6 kW.
- Available as 600x600, 800x800, or 900x900.
- Remote controls can be wired or infrared.

Selection guide:

	**Console**	**Power kW**	**1.2**	**1.8**	**2.5**	**3.1**	**3.5**	**4.7**	**5.5**	**6.3**	**7.4**
	RPFCW (CB-CFV-CFH-UCD)	9 models	•	•	•	•	•	•	•	•	•
	**Duct**	**Power kW**	**2.2**	**4.3**	**5.4**	**5.9**	**6.2**	**7.8**	**8.6**		
	RPIW-M (up to 80Pa)	7 models	•	•	•	•	•	•	•		
	**Duct**	**Power kW**	**5.8**	**8.0**	**10.5**	**13.5**	**16.7**				
	RPIMW-H (up to 160Pa)	5 models	•	•	•	•	•				
	**Cassette unit**	**Power kW**	**2.3**	**2.7**	**3.8**	**4.4**	**6.3**	**8.6**	**9.7**		
	RCI(M)W	7 models	•	•	•	•	•	•	•		
	**EC cassette**	**Power kW**	**2.7**	**3.9**	**4.5**	**6.5**	**9.7**	**11.6**	**13.6**		
	RCI(M)-ECM	7 models	•	•	•	•	•	•	•		

Technical tables additional notes

Notes

Yutaki air source heat pumps

The nominal heating and cooling capacities are based on Standard EN 14511:

- Cooling: water input temperature 12ºC, output temperature 7ºC and outside temperature 35ºC DB.
- Heating: water input temperature 30ºC, output at 35ºC and outside temperature 7ºC DB, 6ºC WB.
- Pipe length: 7.5 metres; Height of pipes: 0 metres.

The heating capacity and performance are shown with integrated values (with defrost correction factor included).

The acoustic data are based on the following conditions:

- Outdoor ambient temperature (DB/WB): 7/6 ºC.
- Water input/output temperature: 30/35 ºC.
- Unit distance from measuring point: 1 metre from the front surface of the unit and 1.5 metres above ground level.

The acoustic pressure level has been measured in an anechoic chamber, meaning reflected sound must be taken into account when installing the unit.

The acoustic power level has been measured in a reverberant room in accordance with Standard EN12102. The environmental conditions used are those specified in Standard EN14511 for performance testing.

The SCOP heating seasonal performance values are calculated in accordance with ERP Directive 2009/125/CE, and more specifically with Standard 813/2013 (LOT 1) according to UNE EN 14825.

The seasonal performance value in domestic hot water production is calculated in compliance with ERP Directive 2009/125/CE, and more specifically with Regulation 814/2013 (LOT2) according to Standard UNE EN 16147.

All energy efficiency documents and the energy label (LOT 1 AND LOT 2) can be downloaded from the website: **https://www.hitachi-hvac.co.uk/apps**

Domestic 1x1 range units

(cooling power < 12kW)

The nominal heating and cooling capacity is the combined capacity of HITACHI's standard Split system, and is based on Standard ISO 5151:

- Cooling: indoor temperature 27ºC DB, 19ºC WB, outside temperature 35ºC DB.
- Heating: indoor temperature 20ºC DB, outside temperature 7ºC DB, 6ºC WB.
- Pipe length: 5 metres; Height of pipes: 0 metres.

The acoustic pressure level in indoor units is based on the following conditions:

- Wall-mounted units: 0.8 metres below the height centre of the indoor unit and 1 metre from discharge grille.
- Console units: half the height of the unit and 1 metre from the discharge grille
- Ducts: 0.8 metres below the height centre of the indoor unit and 1.5 metres from the discharge grille.
- Cassette: 0.8 metres below the height centre of the indoor unit and 1.5 metres from the discharge grille.

This data has been measured in an anechoic chamber and takes into account the reflected sound of the location.

The acoustic pressure level in outdoor units is based on the following conditions:

- 1 metre from the front surface of the unit and 1 metre above ground level

The SEER/SCOP seasonal cooling and heating values are calculated in compliance with Directive ERP 2009/125/CE, and more specifically with Standard 206/2012 (LOT 10), according to UNE EN 14825.

All energy efficiency documents and the energy label (LOT 10) can be downloaded from the website: https://www.hitachi-hvac.co.uk/apps

Commercial 1x1 range and VRF Systems units

(cooling capacity > 12kW)

The nominal cooling and heating capacity is the combined capacity of the outdoor unit and the indoor units, and is based on Standard EN14511, under the following operating conditions:

- Cooling: indoor temperature 27ºC DB, 19ºC WB, outside temperature 35ºC DB.
- Heating: indoor temperature 20ºC DB, outside temperature 7ºC DB, 6ºC WB.
- Pipe length: 7.5 metres; Height of pipes: 0 metres.

The acoustic pressure level in indoor units is based on the following conditions:

- Wall-mounted units: 1 m below the unit and 1.5 m from the discharge grille.
- Console units: 1 m above ground level and 1 m from the front of the unit.
- Ducts: 1.5 m below the unit (without a ceiling below it) with the suction duct at 1 m and the discharge duct at 2 m.
- Cassette: 1.5 m below the unit
- Ceiling: 1 m below the unit and 1 m from the discharge grille.

The acoustic pressure level has been measured in an anechoic chamber, meaning reflected sound must be taken into account when installing the unit.

The acoustic pressure level in outdoor units is based on the following conditions:

- The measurement point is 1.5 metres above the ground and 1 m from the front surface of the unit.
- Units operating at their rated voltage.

The acoustic pressure level has been measured in an anechoic chamber, meaning reflected sound must be taken into account when installing the unit.

The acoustic power level has been measured in a reverberant room in accordance with Standard EN12102. The environmental conditions used are those specified in Standard EN14511 for performance testing.

The SEER/SCOP seasonal cooling and heating performance values are calculated in compliance with ERP Directive 2009/125/CE, and more specifically with Standard 2281/2016 (LOT 21), in accordance with Standard UNE EN 14825 and calculated with RCI-FSN4 model cassette units.

All the energy efficiency documents (LOT 21) can be downloaded from the website: **https://www.hitachi-hvac.co.uk/apps**

The energy label (LOT 10) can be downloaded from the website: **https://www.hitachi-hvac.co.uk/apps**

System Free Indoor units

The nominal cooling and heating capacity is the combined capacity of the outdoor unit and the indoor units, and is based on Standard EN14511, under the following operating conditions:

- Cooling: indoor temperature 27ºC DB, 19ºC WB, outside temperature 35ºC DB.
- Heating: indoor temperature 20ºC DB, outside temperature 7ºC DB, 6ºC WB.
- Pipe length: 7.5 metres; Height of pipes: 0 metres.

The indoor units have different cooling and heating capacities in the Utopia Prime & IVX and VRF Set Free systems dependent on which outdoor unit they are installed with.

The acoustic pressure level has been measured in an anechoic chamber under the following conditions:

- Indoor units RCI (M), RCD: 1.5 m below the unit.
- RPI indoor units (M): 1.5 metres below the unit (no ceiling below the unit), with the suction duct at 1 m and the discharge duct at 2 m.
- RPC and RPK indoor units: 1 m below the unit, 1 m from the discharge grille.
- RPF indoor units (I): 1 m above ground level, 1 m from the front of the unit.

The acoustic power level has been measured in a reverberant room in accordance with Standard EN12102. The environmental conditions used are those specified in Standard EN14511 for performance testing.

Dx-Kit

The nominal cooling and heating capacity is the combined capacity of the outdoor unit and the associated DX interface (EXV-0E2), and is based on Standard EN14511, under the following operating conditions:

- Cooling: indoor temperature 27ºC DB, 19ºC WB, outside temperature 35ºC DB.
- Heating: indoor temperature 20ºC DB, outside temperature 7ºC DB, 6ºC WB.
- Pipe length: 7.5 metres; Height of pipes: 0 metres.

The acoustic pressure level in outdoor units is based on the following conditions:

- The measurement point is 1.5 metres above the ground and 1 m from the front surface of the unit.
- Units operating at their rated voltage.

The acoustic pressure level has been measured in an anechoic chamber, meaning reflected sound must be taken into account when installing the unit.

The acoustic power level has been measured in a reverberant room in accordance with Standard EN12102. The environmental conditions used are those specified in Standard EN14511 for performance testing.

The outdoor units of the "RAS-XH (V)NP(1)E" series have been designed for specific applications that require the combination of a Series 2 DX Interface and are not Eurovent certified. They may vary depending on each particular application.

UK Cooling conditions

- For RAC products:
  Indoor temperature = 22ºC DB, 16ºC WB, outside temperature = 27ºC DB
- For Primairy products:
  Indoor temperature = 22ºC DB, 18ºC WB, outside temperature = 27ºC DB
- For Utopia Prime products:
  Indoor temperature = 23ºC DB, 16ºC WB, outside temperature = 30ºC DB

Hydraulic module

The heating and cooling nominal capacities are based on Standard EN 14511 and show the data in integrated values (with defrost correction factor included).

The acoustic data are based on the following conditions:

- Outdoor ambient temperature (DB/WB): 7/6 ºC.
- Water input/output temperature: 30/35 ºC.
- Unit distance from the measuring point: 1 metre from the front of the unit and 1.5 metres above ground level.

The measurements were made in a reverberant room in accordance with Standard EN12102. The environmental conditions used are those specified in Standard EN14511 for performance testing.

Units in the air renewal range – KPI and KPI Active

The sound pressure level has been measured in an anechoic chamber, with the measuring point located 1.5 m below the unit, without a ceiling over it and using a soundproof duct. Suction duct at 1 m and discharge duct at 2 m.

Reflected sound should be considered when installing the unit. The sound pressure level measured in the installation may be higher than specified.

In the case of KPI-X4E units with direct expansion coil, the nominal cooling and heating capacity is the combined capacity of the outdoor and indoor units of the system and is based on Standard EN14511, under the following operating conditions:

- Cooling: indoor temperature 27ºC DB, 19ºC WB, outside temperature 35ºC DB.
- Heating: indoor temperature 20ºC DB, outside temperature 7ºC DB, 6ºC WB.
- Pipe length: 7.5 metres; Height of pipes: 0 metres.
- Active KPI unit operating at its nominal air flow.

Chiller range units

The capacity data are based on European standard EN14511 under the following conditions:

In cooling mode:

- Cold water input/output temperature: 12/7 ºC.
- Condenser input air temperature: 35 ºC.

In heating mode:

- Hot water input/output temperature 40/45ºC.
- Condenser input air temperature: 6ºC (WB).

All sound pressure level data are measured at a height of 1.5 m, at 1 m from the front panel of the unit.

The low water temperature option requires brine (ethylene glycol or propylene glycol-type antifreeze mixture).

For more information, please see the technical manuals for each range at https://www.hitachi-hvac.co.uk/resources

Terms and Conditions of Sale

Johnson Controls - Hitachi Air Conditioning Europe SAS

1. DEFINITIONS

In these conditions;

(1) "HITACHI" means: Johnson Controls Hitachi Air Conditioning Europe SAS, UK Branch, (registration no. BR015653), with registered office located at Building 7, Foundation Park, Roxborough Way, Maidenhead, SL6 3UD, United Kingdom.

(2) "Buyer" means: the person, firm or company specified overleaf, to whom HITACHI's Quotation, Sales Confirmation or Invoice is addressed.

(3) "Goods" means: the goods to be sold by HITACHI to the Buyer under the Contract.

(4) "Contract" means: the contract of sale hereby formed between HITACHI and Buyer.

2. CONSTRUCTION OF CONTRACT

(1) The terms of the Contract shall consist of the particulars overleaf and these conditions. Any term overleaf which is at variance with these conditions shall prevail over these conditions, which shall be construed accordingly, except with regard to price in respect of which provisions of sub clause 6 (2) shall prevail.

(2) No other terms (whether contained in any documentissued by the Buyer or in any written or oral communication between the parties) shall apply to the Contract nor shall these conditions or the particulars overleaf be modified without HITACHI's written agreement.

3. QUOTATIONS AND ORDERS

(1) Unless accepted before lapse or withdrawal, or renewed in writing by HITACHI, quotations shall lapse automatically after 30 days, but may be withdrawn earlier by HITACHI.

(2) Quotations are for information only and are not firm offers. There shall be no binding contract until HITACHI has accepted the buyer's order by dispatching HITACHI's official sales confirmation.

4. DELIVERY

(1) The scope of supply by HITACHI under the Contract shall be strictly limited to those specified overleaf, and no other goods or services are included.

(2) HITACHI will use all reasonable endeavours to deliver the Goods on or before the delivery date specified overleaf, however, HITACHI does not undertake,guarantee or warrant that delivery will be made on the delivery date specified.

(3) Any such delivery date specified shall be extended by any period or periods during which the manufacture or delivery of the Goods or other work by HITACHI in connection with this Contract is prevented, hindered,delayed or rendered uneconomic by reason of a *Force Majeure Event* (as defined in clause 18 below).

(4) The Buyer acknowledges that, in the case of semiconductor products, optoelectronic products and other electronic components, due to the advanced technology in the Goods and the specialist nature of the manufacturing process, manufacture of the Goods by HITACHI's normal means may result in a loss of yield. In the event of such a loss of yield HITACHI shall notify the Buyer and shall use its reasonable endeavours to supply the Goods in accordance with this Contract. If due to a *Force Majeure Event* or due to loss of yield HITACHI has insufficient stocks to meet all its commitments HITACHI may apportion stock between its customers at its sole discretion.

(5) If any delivery time specified overleaf is so extended by more than 90 days then the Buyer shall be entitled to give written notice to HITACHI requiring the Goods to be delivered within 30 days of the date of such notice, failing which the Buyer shall have the right to give further written notice determining the Contract forthwith.

(6) HITACHI shall be entitled to deliver the Goods in one or more instalments. Where delivery is effected by instalment each instalment shall be treated as a separate contract. Delay in delivery or other default of any instalment shall not relieve the Buyer of its obligations to accept and pay for the remaining deliveries.

(7) In the case of the Buyer residing in the United Kingdom, unless otherwise stated, HITACHI will at its own expense deliver to the Buyer's premises. In the case of exports, unless otherwise stated, delivery will be FOB (Incoterms 2010) at a UK port designated by HITACHI.

(8) The delivery by HITACHI of a greater or lesser quantity of the Goods than the quantity provided for in the Contract, the delivery of other goods not provided for in the Contract, or the delivery of the Goods only some of which are defective, shall not entitle the Buyer to reject all of the Goods delivered. In order that HITACHI can comply with its carrier's conditions any claim in respect of error in quantity or type of Goods or in respect of damage to the Goods in transit must be made in writing to HITACHI and the carrier notified in both cases within 3 days of receipt of the Goods. Failure to make such claim shall constitute unqualified acceptance of the Goods and waiver by the Buyer of all claims relating to error in quantity or type of goods delivered or relating to the condition of Goods delivered. Similarly, if any Goods invoiced by HITACHI are not delivered, in order that HITACHI can claim against its carriers where appropriate the Buyer must notify HITACHI within 10 days of the date of invoice,failing which the Buyer will be liable to pay for the Goods in full. Where liability for error in quantity, or type of Goods or in respect of damage to the Goods in transit is accepted by HITACHI, HITACHI's only obligation shall be, at its option, to make good any shortage or non-delivery and/or as appropriate to replace or repair any Goods found to be damaged or defective and/or to refund the cost of such Goods to the Buyer.

(9) If the Buyer refuses or fails to take delivery of Goods tendered in accordance with this Contract HITACHI shall be entitled to terminate this Contract with immediate effect, to dispose of the Goods as HITACHI may determine, and to recover from the Buyer any loss and expenses incurred as a result of such refusal or failure.

(10) Section 32 (2) of the Sale of Goods Act 1979 shall not apply. HITACHI shall not be required to give the Buyer the notice specified in Section 32 (3) of the Act.

(11) Unless expressly agreed in writing by HITACHI, all Goods shall be packed in accordance with HITACHI's standard practice. The Buyer shall meet the costs of any special packaging requested by the Buyer or any packaging rendered necessary by delivery by any means other than HITACHI's normal means of delivery.

5. RISK AND TITLE

(1) NOTWITHSTANDING DELIVERY, PROPERTY IN THE GOODS SUPPLIED SHALL REMAIN WITH HITACHI UNTIL THOSE GOODS HAVE BEEN PAID FOR IN FULL (TOGETHER WITH ANY ACCRUED INTEREST).

(a) RISK IN THE GOODS SHALL PASS ON DELIVERY. The Buyer shall store the Goods separately or in such a way as will show clearly that they are HITACHI's property and the Buyer will ensure that they are kept in good condition and insured against loss or damage for HITACHI's benefit. Until property in the Goods passes to the Buyer, the Buyer shall hold the proceeds of any claim on the insurance policy on trust for HITACHI and shall immediately account to HITACHI with the proceeds.

(b) THE BUYER SHALL HOLD THE GOODS IN A FIDUCIARY CAPACITY AND AS BAILEE FOR HITACHI WHO MAY WITHOUT PREJUDICE TO ANY OTHER OF ITS RIGHTS REPOSSESS THE GOODS TO WHICH IT HAS RETAINED TITLE AS AFORESAID and thereafter re-sell the same and for this purpose the Buyer hereby grants an irrevocable right and license to HITACHI's servants and agents to enter upon all or any of its premises with or without vehicles during normal business hours for the purpose of inspecting and/or repossessing Goods to which it has retained title. This right shall continue to subsist notwithstanding the termination of this Contract for any reason and is without prejudice to any accrued rights of HITACHI hereunder or otherwise.

(c) The Buyer agrees to provide HITACHI, within twenty-four hours of a written request made by HITACHI, a certificate stating (i) the Goods that the Buyer still holds and that the Buyer has its custody, directly or through a third party depositary; and (ii) the names and contact information (address, telephone number and email) of any subsequent purchasers of the Goods, and the amounts owed by such purchasers to the Buyer.

(d) HITACHI may at any time detach or separate any of its Goods which may have been incorporated in or attached to goods belonging to the Buyer or any third party.

(2) HITACHI reserve the right, exercisable at its option by notice in writing to the Buyer, to waive the provisions of sub clause 5 (1) above at any time before payment has been made for the Goods supplied by the Buyer and to declare that property in the Goods shall have passed to the Buyer.

(3) Notwithstanding that property in the Goods shall not have passed to the Buyer, HITACHI, without prejudice to any other of its rights, may sue for the price of the Goods supplied in the event that payment is not made on the due date.

(4) Any return of Goods wholly or partly by the Buyer to HITACHI, except in the case of defective Goods pursuant to Clause 8, shall be subject to HITACHI's prior written consent and Buyers payment to HITACHI of interest charges for the period from the date of HITACHI's shipment of such Goods to the Buyer to the date of HITACHI's receipt of such Goods. Freight,insurance and any other expenses incurred in connection with such return shall be borne by the Buyer.

6. PRICES

(1) Unless otherwise stated overleaf, prices of the Goods shall be exclusive of VAT, export

duty and foreign import duty and any other import or other taxes, which shall where applicable be paid by the Buyer.

(2) Prices stated in any quotation or in HITACHI's Sales Confirmation are provisional only and subject to adjustment to take account of increases in HITACHI's costs and overheads, including, without limitation,costs of carriage and labour costs. The Contract price shall be HITACHI's price ruling at the date of dispatch. All quotations/sales confirmations and invoices are issued subject to the unconditional reservation of HITACHI's right to adjust prices in respect of the following:-

(a) Changes in the prevailing exchange rate between the currency in which the price is to be paid and the Japanese Yen;

(b) Changes in the current EU or UK's import duty.

7. PAYMENT

(1) If HITACHI has granted the Buyer credit facilities, the payment of the price must be made in full within 30 days of the date of invoice, unless otherwise specified overleaf or agreed to by HITACHI. Any extension of credit allowed for the Buyer may be changed or withdrawn at any time. Where no credit has been granted, payment must be made in full in cash prior to delivery. Payment shall be made in full direct to HITACHI in the currency invoiced. The Buyer shall not be entitled to exercise any right of set-off, counter claim, abatement or analogous deduction against payment due to HITACHI. Time of payment is of the essence of a Contract. HITACHI reserves the right to suspend the provision of Goods to the Buyer where any amounts are overdue under any Contract with the Buyer until all such amounts have been paid.

(2) HITACHI is authorized to invoice daily interest (penalties for late payment) on any amount unpaid at the rate stipulated by the Late Payment of Commercial Debt Regulations 2013 (as amended) from the due date until the date of actual payment of all unpaid amounts (including interest) (after, as before,judgment). Costs in excess may also be claimed if justified.

(3) If, in the opinion of HITACHI, the creditworthiness of the Buyer shall have deteriorated prior to the delivery, HITACHI may require full or partial payment of the price prior to delivery or the provision of security for payment in full (including any accrued interest) by the Buyer in a form acceptable to HITACHI notwithstanding any credit terms that may have been agreed between HITACHI and the Buyer.

(4) Not withstanding any purported contrary appropriation by the Buyer, all payments made by the Buyer to HITACHI shall be appropriated first to Goods which have been resold by the Buyer and then to Goods which remain in the possession or under the control of the Buyer.

(5) HITACHI is entitled to offset any amount owing to it from the Buyer against any amount owed to the Buyer by HITACHI.

8. WARRANTIES

(1) If the Goods are defective on delivery, and the defects arise from faulty materials or workmanship and are not caused by fair wear and tear, abnormal or unsuitable conditions of storage, transportation or use, or the combination of the Goods with any goods not supplied by HITACHI or any act, neglect or default of the Buyer or any third party and HITACHI is given written notice of the defects promptly upon discovery by the Buyer and at any rate within six months (or such other period of time as may specifically be agreed to by HITACHI for certain types of Goods) after delivery then, unless otherwise specified overleaf, HITACHI's sole obligation shall be (at its option) to repair or replace the defective item or allow the Buyer the price thereof and to pay or reimburse the reasonable carriage charges for the return of defective Goods to the Buyer and for delivery of the replaced or repaired item.

(2) Unless otherwise agreed between HITACHI and the Buyer, if any of the Goods are not HITACHI made, the provisions of sub clause 8 (1) above shall apply only to the extent covered by any warranty made by the supplier of such Goods to HITACHI.

(3) The Buyer shall retain the Goods at its premises until instructed by HITACHI to return them. Goods alleged to be defective shall be subject to inspection and testing by HITACHI at its own or (if HITACHI so chooses) at the Buyer's premises and the Buyer shall allow HITACHI adequate facilities at the Buyer's premises to investigate the complaint.

(4) Subject to sub clause 8 (1) above, HITACHI gives no representation or warranty and there is not incorporated in the Contract any condition whether express or implied, statutory or otherwise, as to the Goods other than the statutory warranty of title, and any such representations, conditions or warranties are hereby expressly excluded and HITACHI shall be under no liability to the Buyer for any loss, damage or injury (including special, direct, indirect or consequential loss and loss of profit) resulting from defective materials, faulty workmanship or otherwise howsoever arising and whether or not caused by the negligence of HITACHI, its employees or agents SAVE THAT HITACHI shall accept liability for death or personal injury caused by the negligence of HITACHI.

(5) Subject to sub clause 8 (1), the warranty for RAC products shall be 36 months after delivery of the Goods or from the date of invoice ,whichever is earlier.

(6) Subject to sub clause 8 (1), the warranty for Utopia, IVX, Yutaki and Set Free Systems shall be 60 months from delivery of Goods or from the date of invoice, whichever is earlier.

(7) For further information on UK warranty terms, please visit the following website https://warranty-eu.jci-hitachi.com/warranty/

9. INSOLVENCY AND DEFAULT

If the Buyer fails to pay HITACHI in accordance with these conditions, breaches any other of these conditions or is the subject of collective insolvency proceedings, HITACHI may, without prejudice to its other rights, postpone delivery or manufacture of the Goods until such payment has been made or other breach rectified and/or (at its option) to terminate the Contract (and/or any other such contracts) and to recover payment for all deliveries already made and for the cost of materials and labour already expended for the purpose of future deliveries (less any allowance of the value thereof as utilized by HITACHI for other purposes) and also to recover from the Buyer a sum equivalent to HITACHI's loss of profit arising out of such termination. The exercise of HITACHI's option to postpone delivery or manufacture shall not prevent the subsequent exercise of HITACHI's option to terminate the Contract and/or any other such contracts.

10. THIRD PARTY RIGHTS

(1) In this clause 10 "Third Party Rights" shall mean any rights under letters patent, registered or unregistered designs, trademarks, copyright or any other intellectual property rights and rights in know-how whether or not capable of being protected by statute, which are owned or controlled by any third party.

(2) Where any of the Goods are produced to the Buyer's specification or where the Buyer's use of the Goods infringes any Third Party Rights notwithstanding that the Goods themselves do not constitute such an infringement, the Buyer shall indemnify HITACHI against all actions, claims, costs, damages or losses arising from any infringement of such rights in respect of the Goods so produced or the use to which the Buyer has put the Goods as the case may be.

(3) Any reference by HITACHI to patents, copyright,registered designs, trademarks and analogous forms of protection shall not constitute a warranty of the validity thereof.

(4) HITACHI does not warrant that the Goods do not infringe any Third Party Rights, and all warranties to that effect whether express or implied, statutory or otherwise are hereby excluded. If at any time it is alleged that the Goods infringe any Third Party Rights,or if in HITACHI's reasonable opinion such an allegation is likely to be made, HITACHI may at its option and at its own expense:

(a) modify or replace the Goods without detracting from the overall performance of the Goods,so as to avoid the infringement; or

(b) procure for the Buyer the right to continue to use the Goods; or (c) repurchase the Goods at the price paid by the Buyer.

(5) HITACHI shall have no liability to the Buyer in the event of Goods infringing or being alleged to infringe any Third Party Rights. In the event that the Goods are or may be the subject of Third Party Rights, HITACHI shall be obliged to transfer to the Buyer only such right, title or interest as HITACHI may have.

(6) The Buyer shall notify HITACHI forthwith of any claim made or action brought or threatened alleging infringement of any Third Party Rights. HITACHI shall have control over and conduct any such proceeding sin such manner as it shall determine. The Buyer shall provide all such reasonable assistance in connection therewith as HITACHI may request.

11. SPECIFICATIONS AND INFORMATION

(1) Unless expressly agreed in writing by HITACHI, all drawings, designs, specifications and particulars of dimensions and weights and other such information submitted by HITACHI are approximate only and HITACHI shall have no liability in respect of any deviation there from.

(2) HITACHI accepts no responsibility for any errors, omissions or other defects in any drawings, designs or specifications prepared by, or on behalf of, the Buyer or the Buyer's agents, sub-contractors or employees,and HITACHI shall be indemnified by the Buyer against any and all liabilities and expenses incurred by HITACHI arising there from.

(3) All drawings, designs, specifications and information submitted by HITACHI are confidential and shall not be disclosed to any third party without HITACHI's written consent.

12. LIMITATION OF LIABILITY

(1) HITACHI shall not be liable for any indirect

or intangible loss, such as: loss of revenue, loss of goodwill, loss of data, operating loss and/or loss of anticipated savings in each case howsoever caused.

(2) Without prejudice to sub clause 12(1) HITACHI shall not be liable to the Buyer for any loss or damage whether for negligence, breach of contract, misrepresentation or otherwise, for a sum greater, in aggregate, than the amount actually paid by the Buyer to HITACHI under the Contract.

(3) The limitation of liability in sub clauses 12(1) and 12(2)above shall not operate to exclude or restrict HITACHI's liability for fraud or deceit or for death or personal injury caused by its negligence.

(4) For the avoidance of doubt HITACHI will have no liability to the Buyer for any delays in deliveries due to circumstances described in sub clauses 4(3) and 4(4)of these conditions.

13. ASSIGNMENT

Neither party shall without the prior written consent of the other party (which shall not be unreasonably withheld) assign or sub-contract any of its rights or duties under the Contract and upon such consent being given shall furnish copies of any such assignments to the other party.

14. LICENSES AND CONSENTS

(1) If any license or consent of any government or other authority shall be required for the acquisition, carriage or use of the Goods by the Buyer, the Buyer shall obtain the same at its own expense and if necessary produce evidence of the same to HITACHI on demand. Failure to do so shall not entitle the Buyer to withhold or delay payment of the price. Any additional expenses or charges incurred by HITACHI resulting from such failure shall be for the Buyer's account.

(2) If HITACHI needs to obtain an export license from the competent authorities of any country, the Buyer shall furnish HITACHI with all information required by HITACHI for such purpose, including, but not limited to, the country of ultimate destination and the name and address of the end-user and any consignee(s), and shall warrant that such information is true, accurate and sufficiently detailed. The Buyer further agrees to take all necessary procedures to act in full compliance with all applicable governmental requirements, including but not limited to applicable economic sanctions and constraints administered by the U.S. Department of the Treasury and applicable export control measures administered by the U.S. Departments of Commerce and State, any other U.S. government agencies, and measures administered by the European Union or the government agencies of any other countries. This includes the acquisition of international import certificates, licenses, permits and delivery verifications, as applicable. In the event that any of the Goods, or any materials, parts or components incorporated in them, or relevant technical data supplied by HITACHI are of United States origin,the Buyer agrees to comply with the U.S. Export Administration regulations.

(3) The Buyer shall not directly or indirectly sell, transfer, export, re-export or make available the Goods, (wholly or partly), any relevant technical data (including software), technology or services to Cuba, Iran, North Korea, Sudan, Syria and Crimea or any other destination, person or organization subject to U.S, United Nations, EU and/or national sanctions or restrictions, including any entities or persons in those countries, representing those countries, or who ever held citizenship in those countries, either directly or indirectly.

(4) The Buyer shall not sell, transfer, export, re-export or make available the Goods, (wholly or partly), any relevant technical data (including software), technology or services to a person or entity subject to governmental restrictions or prohibitions.

(5) The Buyer confirms that the Goods or any relevant technical data will not be used:

(a) For purposes related to any weapons of mass destruction, nuclear, rocket system, unmanned air vehicle, missile, chemical and biological, military (if destined for China, Russia or Venezuela), maritime nuclear propulsion end-uses;

(b) For end-use on a vessel or aircraft, unless the country of location, country of registration, and the country in control (including leasing or chartering) are all authorized.

(6) The Buyer shall keep documentation from the date of HITACHI's shipments and at least for the minimum legal retention period consistent with the local laws, as evidence that all Goods supplied to the Buyer have been received in the destination permitted under the laws of the government issuing the export license, and the Buyer will produce such evidence upon HITACHI's request.

(7) HITACHI's obligations under any Contract shall be conditional upon all necessary licenses or consents being obtained from the relevant authorities and the ability of HITACHI to supply such the Goods consistent with the laws and regulations of the U.S. and other governments.

(8) The Buyer shall separately confirm to HITACHI the strict observation hereof of this clause 14 (Notice of Confirmation).

15. WAIVER

Failure by HITACHI to exercise or enforce any rights hereunder shall not be deemed to be a waiver of any such right nor operate so as to bar the exercise or enforcement thereof at any time or times thereafter.

16. NOTICES

(1) Any notice hereunder shall be deemed to have been duly given if sent by pre-paid normal post, telex, or telefax to the party concerned as its last known address. Notices sent by normal post shall be deemed to have been given seven days after dispatch and notices sent by telex or telefax shall be deemed to have been given on the date of dispatch.

(2) Buyer must promptly notify Hitachi in writing of any: (i) criminal conviction; (ii) debarment; (iii) indictment or other charge of violating criminal statues or regulations; (iv) ineligibility to contract with or to receive a license or other form of authorization for a government agency; or (v) denial, suspension, or revocation of eligibility to be involved in exports, imports, or conduct business.

17. CANCELLATION

The contract may be cancelled or rescheduled by the Buyer only with HITACHI's written consent. In the event of such cancellation the Buyer shall pay to HITACHI a cancellation charge, equal to HITACHI's cost incurred up to the date of cancellation plus HITACHI's loss of profit. The amount of such charge shall be notified to the Buyer upon HITACHI's written acknowledgement of cancellation and shall be paid within 30 days of such notification.

18. FORCE MAJEURE

(1) If HITACHI is prevented, hindered or delayed from or in supplying the Goods in accordance with these conditions by a *Force Majeure Event* HITACHI may, at its option:

(a) suspend deliveries while the *Force Majeure Event* continues;

(b) if HITACHI has insufficient stocks to meet its commitments, apportion available stocks between its customers as it decides; or

(c) terminate any contract so affected with immediate effect by written notice to the Buyer; and HITACHI shall not be liable for any loss or damage suffered by the Buyer as a result.

(2) In this clause "*Force Majeure Event*" means an event beyond the reasonable control of HITACHI including, without limitation, strike, lock-out, labour dispute or shortage of labour, act of God, war, riot, civil commotion, malicious damage, compliance with a law or governmental order, rule, regulation or direction, accident, breakdown of plant or machinery, fire, flood, storm, earthquake, shortage of utilities, materials or other circumstances affecting the supply of materials from HITACHI's normal source of supply for materials for the Goods.

19. ENVIRONMENTAL

The Buyer shall be responsible for all obligations, financial or otherwise, imposed in respect of the Goods, on either of the parties, under any environmental legislation applicable to the parties, including but not limited to Directive 2012/19/UE on waste of electrical and electronic equipment and any legislation enacted pursuant to it.

20. LAW AND JURISDICTION

The law of the Contract shall be English law and the parties hereby submit to the jurisdiction of the English Courts save that HITACHI shall be entitled to bring proceedings against the Buyer in the courts of any jurisdiction where the Buyer resides or carries on business.

21. INTELLECTUAL PROPERTY RIGHTS

The Buyer agrees that it shall not obtain any right, title or interest in or to any intellectual property (including, without limitation, patents, trademarks, registered or unregistered designs, copyrights and rights in designs or inventions) in the Goods and that it shall not do or permit anything to be done in its use of such intellectual property in the Goods which would or could jeopardize their validity.

22. GENERAL

(1) Headings herein are for easy reference purpose only, and shall not be construed as defining the scope or meaning of any provisions.

(2) The invalidity, illegality or unenforceability of the whole or part of a condition does not affect or impair the continuation in force of the remainder of these conditions.

(3) A person who is not a party to this contract has no right under the Contracts (Rights of Third Parties) Act 1999 to enforce any of its terms but this does not affect any right or remedy of a third party which exists or is available apart from that Act.

(4) A reference to a statutory provision includes a reference to the statutory provision as modified or re-enacted or both from time to time and any subordinate legislation made under the statutory provision.

Notes

Commercial warranty terms

- Every precaution has been taken during the design and manufacture of Hitachi Air Conditioning equipment to ensure our products conform to the highest standards.

- In the event of a warranty fault the owner should advise their installer. The following sets out the current Hitachi Air Conditioning warranty policy:

RAC products

For all RAC products the warranty period shall be for 36 months (3 years) from date of invoice.

- S-Premium
- Shirokuma
- Summit
- Performance
- Standard
- Multi-split*
- Console
- Light Commercial

Yutaki, Utopia, IVX and Set Free products

For all Yutaki, Utopia, IVX and Set Free products the warranty period shall be 60 months (5 years) from date of invoice.

- System Free indoor units
- Set Free outdoor units*
- Changeover boxes
- Branch kits
- Primairy Systems*
- Utopia Prime
- IVX Prime*
- IVX Centrifugal outdoor units*
- Total Heat Exchanger
- Econofresh
- Yutaki-M
- Yutaki-S
- Yutaki-SCombi
- Yutaki-S80

Samurai Chillers

For all Samurai L Chillers the warranty period shall be 36 months (3 Years) from the date of invoice. For Samurai M & S chillers the warranty shall be 18 months from the date of invoice.

- Hi Efficiency Air Cooled Samurai L
- Hi Efficiency Water Cooled Samurai L
- Hi Efficiency Condenserless Samurai L
- Air Cooled Samurai M
- Air Cooled Samurai S

Central Control Systems

For all Central Control Systems the warranty period shall be 36 months (3 years) from the date of invoice.

- CS Net Web / Manager
- Modbus
- I-O
- BACNet
- KNX
- HARC LonWorks®
- Wired / Wireless controller
- Hikumo / aircloud.

- For all spare parts, the warranty period shall be 12 months (component replacement only no labour allowance included).

- Within the above specified time periods, all products are guaranteed against manufacturing faults in workmanship and material. The faulty component will be replaced free of charge provided the correct procedures are complied with and a labour contribution can be claimed during the first 3 years**(Details can be found on next page).

- The warranty policies are subject to the following conditions.
  The Hitachi Air Conditioning equipment is installed using the correct working practices, and installed within the parameters set out in the technical manuals for each unit, and maintained regularly (minimum of every 6 months, site dependant, by a qualified installer. Yutaki requires a minimum of an Annual service in accordance with the manufacturer's recommendations.

TO SUBMIT A WARRANTY CLAIM: HITACHI OFFERS AN ONLINE WARRANTY CLAIMS SERVICE.

- Contact your HITACHI representative and ask for your account to be opened on the JCH WARRANTY website: https://warranty-eu.jci-hitachi.com/

- You can then track the progress of your claim "live" online, and gain access to tracking and dispatch details*** and receive email notification of your warranty progression.

- If any of the information is not available at the time of claim, then the part can be ordered via an official purchase order and a credit arranged retrospectively, when all the information is available. (This must be within 60 days of the original date of failure).

- All warranty claims must be made within 60 days of failure. Any claim submitted after the 60 day period WILL NOT be considered for approval.

- Parts should be held by the customer for a period of 30 days during which time if required, Hitachi Air Conditioning can request the return of the parts at our cost for inspection and an RMA number will be issued. If it is deemed to have failed "out of warranty" the part will be invoiced to the customer at our standard spare parts rate.

- All components requested to be returned should be sent to Hitachi Air Conditioning (Warranty Department), Unit 7, Foundation Park, Roxborough Way, Maidenhead. SL6 3UD. Clearly marked with the Warranty number. Components returned without a valid Warranty number will not be accepted.

- Repeat warranty requests will be subject to Hitachi Air Conditioning investigation and possible site visit. An official purchase order will be required to purchase the part, pending a decision on the validity of the claim. All parts will be inspected within 14 days, and a credit issued if the warranty is accepted. For warranty claims rejected following inspection, the part will be returned and invoiced to the customer at our standard spare parts rate and, if applicable, a site visit charged.

- Normal wear and tear is excluded.

- Any claim not submitted in accordance with Hitachi Air Conditioning procedures WILL NOT be considered for credit.

* Approved combinations only.
** Except spares which are parts only.
*** HiParts Access is required

Labour Contribution

RAC, Utopia, IVX, Centrifugal, Primairy, Yutaki Heating range and System Free component replacements	Price
Repair of Refrigerant Leak	£95.00
Replacement of Refrigeration Circuit Component(s)	£110.00
Replacement of Outdoor Unit/Evaporator Fan Motor(s)	£40.00
Replacement of Outdoor Unit/Evaporator Fan Blade(s)	£30.00
Replacement of Electrical Component(s)	£40.00
Replacement of Panel(s)	£40.00
Replacement of Swing Louvre Motor(s)	£35.00
Replacement of In-Built Water Lift Pump	£55.00
Replacement of Complete Unit	£130.00
Compressors – up to 2.5HP	£130.00
Compressors – 3.0 to 4.0HP	£160.00
Compressors – 5.0 to 6.0HP	£180.00
Compressors – 8.0 to 12HP	£220.00

All warranty claimants will also be entitled to a site attendance fee of £50.00 to cover the cost of travelling time and mileage.***

Set Free VRF compressor replacement	Price
Set Free 3.0HP to 6.0HP	£180.00
Set Free 8.0HP to 20HP	£220.00
Set Free 22HP to 32HP	£240.00
Set Free 34HP to 54HP	£300.00

Set Free VRF component replacement	Price
Replacement of Refrigeration Circuit Component	£180.00
Replacement of Outdoor Unit Fan Motor	£50.00
Replacement of Outdoor Unit Fan Blade	£35.00
Replacement of Electrical Component	£50.00
Repair of Refrigerant Leak	£140.00
Replacement of CH Box	£180.00
Replacement of Panels	£40.00

Samurai Chiller component replacement	Price
Replacement Compressor	£550.00
Replacement of Fan Motor	£70.00
Replacement of Fan Blade	£50.00
Replacement of Refrigeration Component	£300.00
Replacement of Electrical Component	£70.00
Repair of Refrigerant Leak (brazed joint)	£400.00
Repair of Refrigerant Leak (mechanical joint)	£200.00
Replacement of Covers/Panels	£70.00

All warranty claimants will also be entitled to a site attendance fee of £50.00 to cover the cost of travelling time and mileage.****

e.g., a fan motor and louvre motor replacement on Utopia outdoor unit would be:

1 x Attendance @ £50.00 attendance fee
1 x Fan Motor @ £40.00 labour allowance
1 x Swing Louvre Motor @ £35.00 labour allowance giving a total allowance of £125.00 for the claim.

This will be credited to your account upon request.
All requests must be made within 60 days of the original failure date.

If two components fail in the same category i.e., PCB and Transformer or fan motor and blade, then the labour allowance would only be applicable once.

****One attendance fee per serial number or site, per month will be accepted. Hitachi Air Conditioning reserves the right to amend the warranty policy procedure without notice.

Johnson Controls

HITACHI
Air conditioning solutions

air

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Johnson Controls
Hitachi Air Conditioning Europe S.A.S

Building 7, Foundation Park,
Roxborough Way,
Maidenhead,
SL6 3UD

HITACHI. CERTIFIED QUALITY

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