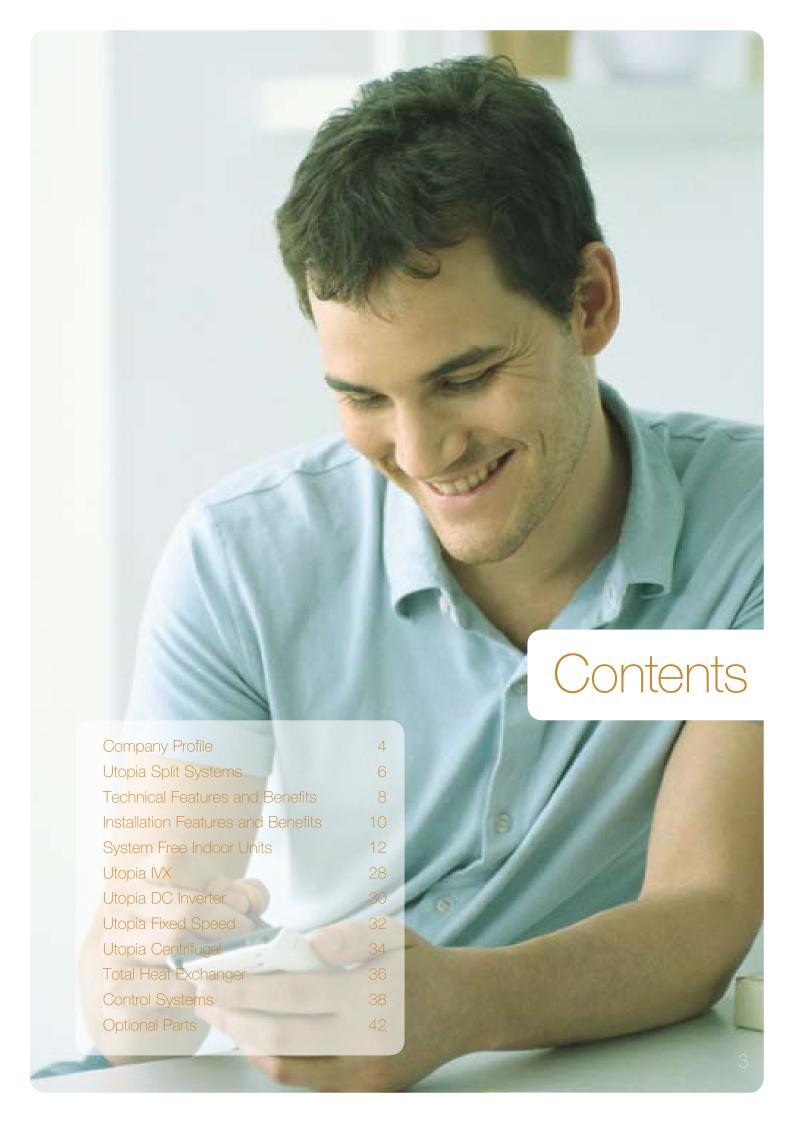
Models
Utopia IVX
20-30 kW
Utopia DC Inverter
5-14 kW
Utopia Fixed Speed
6.3-12.5 kW



Utopia Centrifugal 12.5-25 kW





Air conditioning from Hitachi can justifiably be described as the art of exploiting the latest ideas and developments in technology to create a range of innovative products which provide a more comfortable and more productive environment in which people can happily live and work. It is also an art executed with a responsible concern for protecting the environment. Ecological thinking begins at the very first stages of new product design and continues throughout production, installation procedures, equipment and operation.

Specifiers and users alike can always be assured that performance and costs are not the only parameters by which Hitachi products can be judged.

To achieve success with such objectives on a global scale requires not only enormous resources but also a commitment to the future. As one of the largest companies in the world, Hitachi is well positioned to undertake this commitment with confidence that comes from successfully responding to the changing needs of people for over 90 years.

In 1993 HITACHI invested in a new purpose built, state of the art factory (HAPE) in Barcelona, Spain. The site of the factory was carefully chosen to accommodate further building on its 40,000 square meter site. The creation of a European manufacturing facility and customer training centre helps reduce production costs, speed up delivery times and enables full support to be given to all customers.

Hitachi's advanced air conditioning products are specified all over the world, wherever there is a requirement for ultimate performance and cost effective, long term reliability. A wide range of units coupled with a choice of advanced control systems mean Hitachi can provide solutions to meet every possible air conditioning application or specification. Authorised distributors all over the world contribute their own specialised technical support and practical assistance to provide individual system designs, commissioning and after sales service.

Hitachi Authorised Distributors are committed to providing an unrivalled support from a combination of experienced engineers, local



Hitachi Air Conditioning Products Europe HAPE works, Spain



Hitachi Appliances, Inc. Shimizu works. Japan

# Company profile

In Japanese, Hitachi means sunrise – we are the forefront of research and development turning new ideas and innovations into new products. Of its \$80.9 billion sales worldwide in 2005, close to 4.3% was invested in research and development programs. This vast amount of money has given HITACHI the opportunity to conceive many 'world firsts' – examples of which include the technologically advanced and acclaimed scroll and semi-hermetic Screw compressors.

These have been incorporated in Hitachi's air conditioning systems and water chillers which have revolutionised air conditioning worldwide.

product and spare parts stock, supported in turn by on-going technical support from Hitachi.

From the initial product concept at Hitachi's research and development facility in Japan, product development is dedicated to providing the products the customer requires. Product design and development is continuous with priority being given to the use of ecologically friendly refrigerant.

To satisfy your cooling and heating requirements and to ensure the optimum indoor environment, consider Hitachi the first and last word in air conditioning.



Hitachi Air Conditioning Products (M)

HAPM works, Malaysia







### **Hitachi Air Conditioning Products Europe**

(HAPE works, Spain) has acquired International Standard Quality Management System ISO9001 & ISO 14001 authorisation. HAPE performs thorough product quality control using various environmental tests. Hitachi Set Free Series Indoor units and panels are manufactured according to this ISO certification system.





### Hitachi Air Appliances Inc.

(Shimizu works, Japan) has acquired International Standard Quality Management System ISO9001 and ISO14001 authorisation. Shimizu works perform thorough product quality control using various environmental tests, severe heating testing for compressors, and many others. Hitachi Set Free Series Outdoor units are manufactured according to this ISO certification system.



### Hitachi Air Conditioning Products (M) Sdn.Bhd

(HAPM works, Malaysia) has acquired International Standard Quality Management System ISO9001 and ISO14001 authorisation. HAPM perform thorough product quality control using various environmental tests. Hitachi Set Free Series RPK Indoor units are manufactured according to this ISO certification system.

# Quality control



### **Indoor Units** Capacity Range [HP] 1.5 2.0 2.5 3.0 4.0 5.0 6.0 8.0 10.0 4-Way Cassette Mini 4-Way Cassette 2-Way Cassette Mini Wall Wall In the Ceiling Ceiling **Floor-Standing Floor-Concealed DC Inverter Utopia IVX** Capacity Range [HP] 8.0 10.0 12.0 **RAS-HRNM Series DC Inverter Utopia** Capacity Range [HP] 2.0 2.5 3.0 4.0 5.0 6.0 **RAS-HVRNE RAS-HRNE Utopia N** Capacity Range [HP] 5.0 10.0 2.5 3.0 4.0 **RAS-HNVE RAS-HNE RASC-HNE**

### **Compressor Technology**

Performance is greatly improved by the high efficiency high pressure inverter driven scroll compressor.



Features of the compressor:

- Optimised bearing
- Asymmetric scroll lap
- Oil return circuit
- Improved lubrication system
- High pressure shell
- Protection to allow for liquid return
- Reduced noise and vibration

### Improved lubrication system

The compressors use a pressure differential system for lubrication based on the difference between the intake and discharge pressure. Lubrication is very accurate and highly reliable throughout the operating range – even at low frequencies.

### High pressure shell

The high pressure shell acts as an oil separator reducing the amount of oil circulating in the refrigeration system giving better heat exchanger efficiency. This also prevents the oil entering the shell during the off cycle; this prevents oil dilution and oil foaming at start up.

In addition, the compressor intake gas does not circulate around the motor and therefore the heat of the motor is not added to the gas prior to compression. This is particularly important at low temperatures.

### Protection to allow for liquid return

When the compressor is not operating, the moving Scroll rests on the casing. When the compressor starts to run, the pressure in the chamber under the Scroll builds up and forces the Scroll up against the housing and seals the compression chamber. If liquid returns to the compressor, the resulting increase in pressure forces the Scroll downwards breaking the seal to allow the liquid to pass back into the compressor.

### **Reduced noise and vibration**

The compression points are evenly spread over compression stroke reducing sound and vibration levels. This is further enhanced by the minimal number of components used and the fact that the high pressure shell acts as a silencer.

# Technical features & benefits

### **Utopia Range EER and COP**

EER	
Utopia Fixed Speed (RAS-4HNE)	3.14
Utopia DC Inverter (RAS-4HVRNE)	3.85
Utopia IVX (RAS-8HRNM)	3.36

COP	
Utopia Fixed Speed (RAS-4HNE)	3.53
Utopia DC Inverter (RAS 4HVRNE)	4.39
Utopia IVX (RAS-8HRNM)	4.24

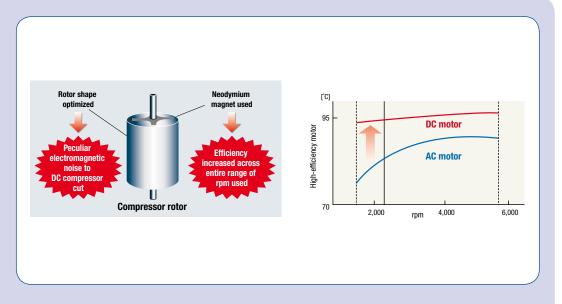
Values shown for connection to RCI 4-way Cassette

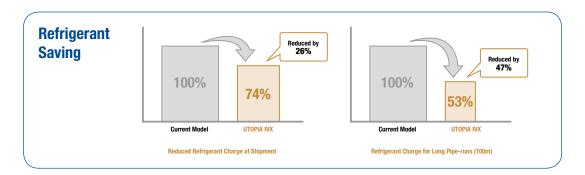
### **DC Compressor**

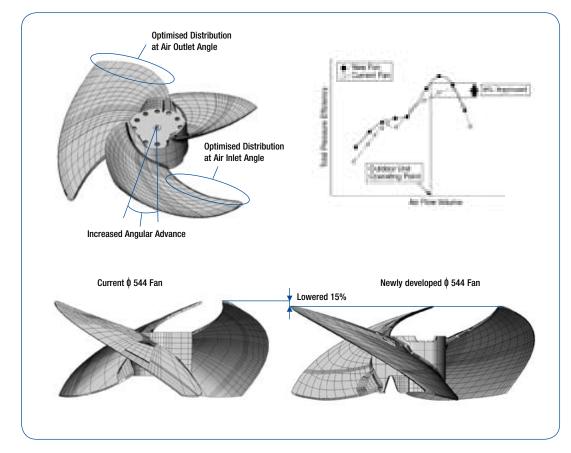
A DC compressor has improved performance around the 30 to 40 Hz range where compressor operation time is longest. Also to suppress electromagnetic noise and achieve low noise the compressor has a split rotor with displaced electrical poles.

Most of the operation time of the compressor is in the 30 to 40Hz range

- Rotor split and electric pole displaced to suppress electromagnetic noise.
- Characteristics at low speeds have also been improved making significant differences to the annual running costs.







### **NEW Super High-Stream Fan**

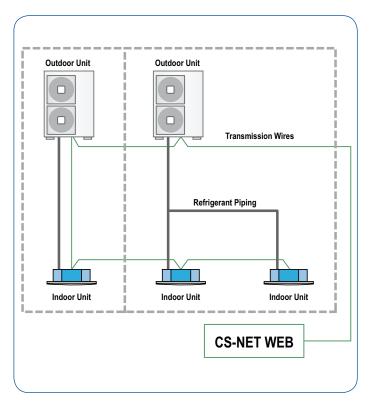
Developments in fan technology have led to the production of the New Super Hi Stream Fan. The height of the fan has been reduced by 15% but advancements in the blade design and optimisation of the inlet and outlet angles have lead to a 9% increase in efficiency while still maintaining low operating noise.

### **H Link Control System**

H-Link requires only two transmission wires connecting each outdoor unit for up to 16 refrigerant cycles and connecting wires for all indoor units and outdoor units in the series.

The advantages of this system are:

- Flexible installation options
- No polarity requirements
- CS Net Connection via indoor or outdoor unit
- Can connect up to 128 indoor units
- Possible to have cable lengths of up to 1000m (5000m with H-link Relay)

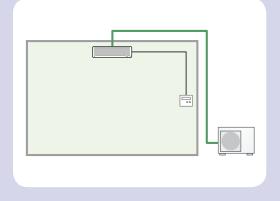


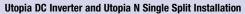
# Installation features & benefits

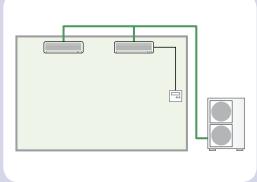
### **Combination Flexibility**

The complete Utopia range uses the system free series of indoor units and provides a totally flexible air conditioning solution.

The Utopia Fixed Speed and Utopia DC Inverter models are available in single, twin and triple split systems. The Utopia Centrifugal is available in single, twin and quad systems and the Utopia IVX is available in twin, triple and quad VRF split systems.



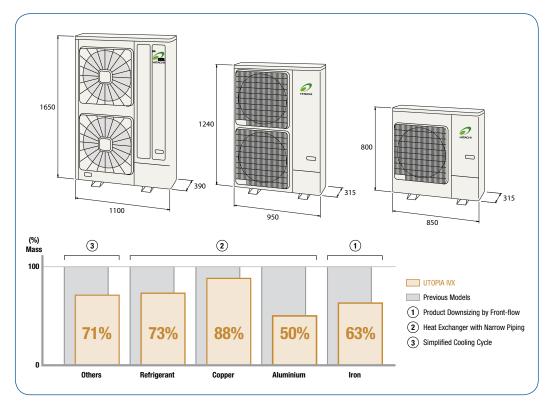




Utopia DC Inverter and Utopia N Twin Split Installation

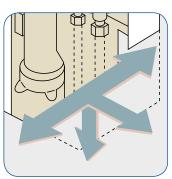
### **Compact and Light**

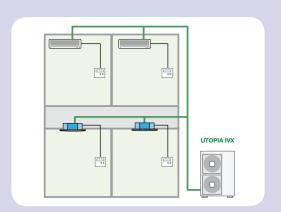
All outdoor units in the Utopia Range are now horizontal discharge type. The units have an extremely compact design allowing for easy installation and more effective use of plant space. This effective design and downsizing has led to a 40% reduction in the footprint of the Utopia IVX compared with previous models and a reduction in the amount of natural resources used.

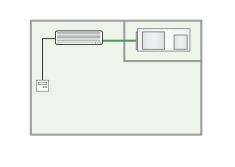


### Flexible installation options

Piping connectors pivot in four directions (forwards, to the rear, laterally and downwards) to allow easier positioning of units. This greatly enhanced flexibility reduces problems during installation and allows for the alignment of multiple outdoor units in small areas.







### Utopia Centrifugal Unit Single Split Installation

The Utopia Centrifugal unit can be installed indoors with ducted systems and is therefore ideal for situations where installations have to be hidden or where circumstances do not allow for the use of outdoor units.

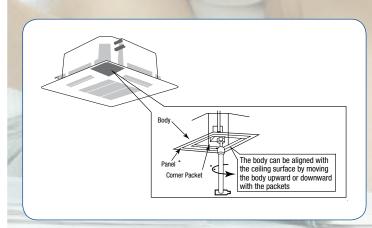
**Utopia IVX VRF Quad Split Installation** 

### **RCIM-FSN Technical Description**

- Quiet Operation
- Compact and Lightweight
- Easy Installation and Maintenance
- Improved Piping



# Mini 4-way cassette



The RCIM, Mini 4-way cassette indoor unit is extremely quiet, compact and has a range of features that benefit installation. Such as an adjustable mounting height, it is compact and lightweight and also it has a uniform panel size and uniform mounting positions allowing for easier piping connections.

### **Quiet operation**

The following table lists air flow rates for RCIM.

	Air Flow Rates and Noise levels dB(A)						
Model	Hi	Me	Lo				
RCIM-1.5FSN	38	35	33				
RCIM-2.0FSN	42	39	37				

### **DC Motor with Reduced Input and Noise**

The DC fan motor greatly improves efficiency and reduces electromagnetic noise compared to conventional products that use AC motors. Air blasts are also reduced by controlling the rotation speed of the fan. In addition, the motor input is reduced by employing a ferrite magnetic surface-mounted rotor, centralized winding system and split core system. The motor efficiency is improved in all aspects, and is 50% smaller and lighter than conventional machines.

### **Easy Installation and Maintenance**

The units are just 295mm in height and weight is 17Kg, so they can be easily installed in the reduced space of a false ceiling. Also the panel sizes are standardised to a 700mm square to facilitate the installation in a standard grid ceiling (European standard module is 600mm).

The pitch size of the suspending bolts is 530mm, positioned at each corner of the square body. Thus, the orientation of the body can be changed easily to match the pipe connections without changing the bolt positions.

The electrical enclosure is located inside the grill which enables easier access to the electrical components without having to open the false ceiling. There is a pocket at each of the four panel corners so that the body height can be easily adjusted without removing the panel.

### **Better Piping**

A condensate pump lift of up to 600mm from the ceiling surface is achieved by employing a drain-up mechanism which is automatically activated by the water level when the draining process is required.

### Adaptable for High Ceiling Installations

Conned Cotting	Ceiling Height (m)						
Speed Setting	RCIM-1.5FSN	RCIM-2.0FSN					
Standard	Below 2.5m	Below 2.7m					
Speed-up (1)	2.5 to 2.9	2.7 to 3.1					
Speed-up (2)	2.9 to 3.9	3.1 to 3.5					

Heights shown in metres

By incorporating the use of speed-up taps on the motor this model can been adapted for high ceiling (3.5m high) installations. This feature provides comfortable air conditioning in suburban stores and showrooms.

Model		RCIM-1.5FSN	RCIM-2.0FSN
Nominal Cooling Capacity	kW	3.60	5.0
Nominal Heating Capacity	kW	4.00	6.30
Air Flow Rate (hi/me/lo)	m³/min	15/13.5/12	16/14/12
Fan Motor	W	52	52
Sound Pressure Level (Overall Scale) (hi/me/lo)	dB(A)	38/35/33	42/39/37
Outer Dimensions			
Height	mm	295	295
Width	mm	570	570
Depth	mm	570	570
Net Weight	kg	17	17
Refrigerant		R410 A ( Nitrogen Charged in	Factory for Corrosion-resistance)
Connections		Flare-nut Connect	ion (with flare-nuts)
Refrigerant-Piping			
Liquid Line	mm(in)	ø 6.35 (1/4)	ø 6.35 (1/4)
Gas Line	mm(in)	ø 12.7 (1/2)	ø 15.88 (5/8)
Condensate Drain	mm	ø 32 OD	ø 32 OD
Packing Measurements	m³	0.13	0.13
Adaptable Air Panel	-	P-N2	3WAM
Colour (Munsell Code)	-	Spring white	(4.1Y8.5 / 0.7)
Outer Dimensions			
Height	mm	35	35
Width	mm	700	700
Depth	mm	700	700
Net Weight	kg	3.5	3.5
Packing Measurements	m³	0.07	0.07

NOTES: OD: Outer Diameter

1. The nominal cooling and heating capacity is the combined capacity of the HITACHI standard split system, and are based on the JISB 8616.

Cooling Operation Conditions
Indoor Air Inlet Temperature:

27.0 °C DB
Indoor Air Inlet Temperature:

27.0 °C WB
Indoor Air Inlet Temperature:

20.0 °C DB
DB: Dry Bulb; WB: Wet Bulb
Dutdoor Air Inlet Temperature:

7.0 °C DB

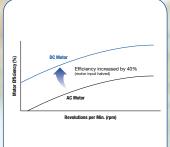
- ${\bf 2.}$  The Sound Pressure Level is based on the following conditions:

- 1.5 meters Beneath the Unit.
- Voltage of the power source for the indoor fan motor is 230V.
The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration when installing the unit.

# Quiet Operation Compact and Lightweight Easy Installation and Maintenance Slim Air Panel Improved Piping Drain Pump as Standard

# 4-way cassette





### **RCI-FSN1E Technical Description**

The RCI, 4-way cassette indoor unit is extremely quiet, compact and has a range of features that benefit installation. Such as an adjustable mounting height, it is compact and lightweight and also it has a uniform panel size and uniform mounting positions allowing for easier piping connections.

### **Quiet operation**

By employing a super-high-stream turbo fan (three-dimensional twisted wing), the wind flow efficiency has been improved by 20%, reducing noise of some units down to 28dB(A).

### DC Motor with Reduced Input and Noise

The DC fan motor greatly improves efficiency and reduces electromagnetic noise compared to conventional products that use AC motors. In addition, the motor input is reduced by employing a ferrite magnetic surface-mounted rotor, centralized winding system and split core system. The motor efficiency is improved in all aspects, and is 50% smaller and lighter than conventional machines.

### **Easy Installation and Maintenance**

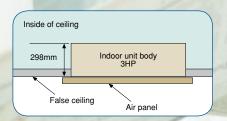
The required opening in a ceiling has been reduced to between 860-910mm. This along with a maximum height of just 298mm and weight as low as 23Kg means they can be easily installed in the reduced space of a false ceiling. Also the panel sizes have been standardised to a 900mm square to facilitate the simple interchange of other models with different capabilities.

The pitch size of the suspending bolts is 760mm, positioned at each corner of the square body. Thus, the orientation of the body can be changed easily to match the pipe connections without changing the bolt positions.

There is a pocket at each of the four panel corners so that the body height can be easily adjusted without removing the panel.

### **Better Piping**

A condensate pump lift of up to 600mm from the ceiling surface is achieved by employing a drain-up mechanism which is automatically activated by the water level when the draining process is required.



### Adaptable for High Ceiling Installations

Conned Cottion	1.5/2	.0/2.5/3.	0 HP	4.0/5.0/6.0 HP			
Speed Setting	4-way	3-way	2-way	4-way	3-way	2-way	
Standard	2.7	3.0	3.3	3.2	3.6	4.0	
Speed-up (1)	3.0	3.3	-	3.6	4.0	4.2	
Speed-up (2)	-	3.6	-	4.2	4.3	-	

Heights shown in metres

By incorporating the use of speed-up taps on the motor this model can been adapted for high ceiling (4.2m high) installations. This feature provides comfortable air conditioning in suburban stores and showrooms.

Model		RCI-1.5 FSN1E	RCI-2.0 FSN1E	RCI-2.5 FSN1E	RCI-3.0 FSN1E	RCI-4.0 FSN1E	RCI-5.0 FSN1E	RCI-6.0 FSN1E
Nominal Cooling Capacity	kW	3.60	5.00	6.30	7.10	10.00	12.50	14.00
Nominal Heating Capacity	kW	4.00	5.60	7.00	8.00	11.20	14.00	16.00
Air Flow Rate (hi/me/lo)	m³/min	15/14/12	16/14/12	20/17/15	26/23/20	32/28/24	34/29/25	37/32/27
Fan Motor	W	56	56	56	56	108	108	108
Sound Pressure Level (Overall Scale) (hi/me/lo)	dB(A)	32/30/28	32/30/28	32/30/28	34/32/30	38/35/33	39/3735	42/40/36
Outer Dimensions								
Height	mm	248	248	248	298	298	298	298
Width	mm	840	840	840	840	840	840	840
Depth	mm	840	840	840	840	840	840	840
Net Weight	kg	23	24	24	26	29	29	29
Refrigerant			R410	A ( Nitrogen Cha	arged in Factory fo	r Corrosion-resist	ance)	
Connections				Flare-nut	Connection (with	flare-nuts)		
Refrigerant-Piping								
Liquid Line	mm(in)	ø 6.35 (1/4)	ø 6.35 (1/4)	ø 9.53 (3/8)	ø 9.53 (3/8)	ø 9.53 (3/8)	ø 9.53 (3/8)	ø 9.53 (3/8)
Gas Line	mm(in)	ø 12.7 (1/2)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)
Condensate Drain	mm	ø 32 OD	ø 32 OD	ø 32 OD	ø 32 OD	ø 32 OD	ø 32 OD	ø 32 OD
Packing Measurements	m³	0.22	0.22	0.22	0.26	0.26	0.26	0.26
Adaptable Air Panel	-				P-G23WA2			
Colour (Munsell Code)	-			Sprin	g white (4.1Y8.5	/ 0.7)		
Panel Dimensions								
Height	mm	37	37	37	37	37	37	37
Width	mm	950	950	950	950	950	950	950
Depth	mm	950	950	950	950	950	950	950
Net Weight	kg	6	6	6	6	6	6	6
Packing Measurements	m³	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Remote Control Switch	-			PC	C-P2HTE or PC-LH	3A		

NOTES: **OD:** Outer Diameter

1. The nominal cooling and heating capacity is the combined capacity of the HITACHI standard split system, and are based on the JISB 8616.

**Cooling Operation Conditions** Indoor Air Inlet Temperature: 27.0 °C DB 19.0 °C WB Outdoor Air Inlet Temperature: 35.0 °C DB

**Heating Operation Conditions** Indoor Air Inlet Temperature: 20.0 °C DB DB: Dry Bulb; WB: Wet Bulb

Piping Length: 7.5 meters

Outdoor Air Inlet Temperature: 7.0 °C DB 6.0 °C WB

2. The Sound Pressure Level is based on the following conditions:

- 1.5 meters Beneath the Unit.

- Voltage of the power source for the indoor fan motor is 230V.

The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration when installing the unit.

### **RCD-FSN Technical Description**

- Quiet Operation
- Slim line design
- New Air Panel, perfect fit for any ceiling

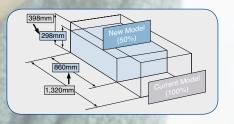
The RCD 2 way cassette produces very little noise, it has a new air panel resulting in a very low profile design.

### **Quiet operation**

By employing a super-high-stream turbo fan (three-dimensional twisted wing with large bore and high efficiency), the wind flow efficiency has been improved by 20% resulting in a noise reduction down to an exceptionally low 30dB (A). It is ideal wherever quiet operation is important.

### An Air panel perfect for any ceiling

This unit virtually merges with the ceiling; it only protrudes 30mm and provides space for customised panelling allowing the unit to blend perfectly into any ceiling.

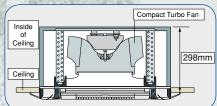


# 2-way cassette



### Low profile design

The compact turbo fan simplifies the structure and reduces the height of the unit to 298mm. The unit's low profile design allows easy installation in the most confined spaces inside a ceiling.



### **Adaptable for High Ceiling Installations**

By incorporating the use of speed-up taps on the motor this model can be adapted for high ceiling installations. This feature provides comfortable air conditioning in suburban stores and showrooms.

Model		RCD-1.5FSN	RCD-2.0FSN	RCD-2.5FSN	RCD-3.0FSN	RCD-4.0FSN	RCD-5.0FSN
Nominal Cooling Capacity	kW	3.60	5.00	6.30	7.10	10.00	12.50
Nominal Heating Capacity	kW	4.00	5.60	7.00	8.00	11.20	14.00
Air Flow Rate (hi/me/lo)	m³/min	12/10/8.5	15/13/11	19/16/14	22/19/16	28/24/21	34/29/25
Fan Motor	W	35	35	55	55	35x2	35x2
Sound Pressure Level (Overall Scale) (hi/me/lo)	dB(A)	35/32/30	35/32/30	38/34/31	40/36/33	40/36/33	43/40/36
Outer Dimensions							
Height	mm	298	298	298	298	298	298
Width	mm	860	860	860	860	1420	1420
Depth	mm	620	620	620	620	620	620
Net Weight	kg	27	27	30	30	48	48
Refrigerant			R410A (Ni	trogen Charged in Fa	actory for Corrosion-	resistance)	
Connections				Flare-nut Connecti	on (with flare-nuts)		
Refrigerant-Piping							
Liquid Line	mm(in)	ø 6.35 (1/4)	ø 6.35 (1/4)	ø 9.53 (3/8)	ø 9.53 (3/8)	ø 9.53 (3/8)	ø 9.53 (3/8)
Gas Line	mm(in)	ø 12.7 (1/2)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)
Condensate Drain	mm	ø 32 OD	ø 32 OD	ø 32 OD	ø 32 OD	ø 32 OD	ø 32 OD
Packing Measurements	m³	0.23	0.23	0.23	0.23	0.37	0.37
Adaptable Air Panel	-	P-G23DWA1	P-G23DWA1	P-G23DWA1	P-G23DWA1	P-G46DWA1	P-G46DWA1
Colour (Munsell Code)	-			Spring white (	4.1Y8.5 / 0.7)		
Outer Dimensions							
Height	mm	30+10	30+10	30+10	30+10	30+10	30+10
Width	mm	1100	1100	1100	1100	1660	1660
Depth	mm	710	710	710	710	710	710
Net Weight	kg	6	6	6	6	8	8
Packing Measurements	m³	0.10	0.10	0.10	0.10	0.15	0.15
Remote Control Switch	-			PC-P2HTE	/ PC-LH3A		

NOTES: OD: Outer Diameter

6.0 °C WB

1. The nominal cooling and heating capacity is the combined capacity of the HITACHI standard split system, and are based on the JISB 8616.

**Cooling Operation Conditions** 

Heating Operation Conditions

Piping Length: 7.5 meters Indoor Air Inlet Temperature: 27.0 °C DB Indoor Air Inlet Temperature: 20.0 °C DB DB: Dry Bulb; WB: Wet Bulb

Outdoor Air Inlet Temperature: 35.0 °C DB Outdoor Air Inlet Temperature: 7.0 °C DB

2. The Sound Pressure Level is based on the following conditions:

- 1.5 meters Beneath the Unit.
- Voltage of the power source for the indoor fan motor is 230V.

The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration when installing the unit.

### **RPC-FSNE Technical Description**

- Stylish design
- Space saving design
- Easy installation
- Quiet operation

The RPC ceiling type indoor unit is simple to install, has an elegant design, an automatic swing louver and is very quiet in operation

### Elegant design

An innovative fan and heat exchanger design led to the creation of today's ultra slim ceiling unit. Fully adjustable mounting brackets allow the unit to be fitted flush with the ceiling leaving a profile of only 150mm.

### Simple and flexible installation

To expand the installation and positioning options the unit has a choice of two drain pipe connections, also refrigeration pipes can be connected to the left, right or rear of the unit.

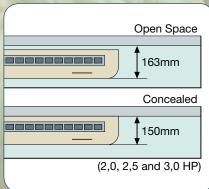


### **Automatic swing louver**

A highly efficient, multi blade centrifugal fan generates that along with the automatic swing louver generates a powerful yet gentle airflow evenly distributed throughout the room ensuring comfort and extremely quiet operation.

# Ceiling suspended





Model		RPC-2.0FSNE	RPC-2.5FSNE	RPC-3.0FSNE	RPC-4.0FSNE	RPC-5.0FSNE	RPC-6.0FSNE
Nominal Cooling Capacity	kW	5.00	6.30	7.10	10.00	12.50	14.00
Nominal Heating Capacity	kW	5.60	7.00	8.00	11.20	14.00	16.00
Air Flow Rate (hi/me/lo)	m³/min	15/13/10	18/16/12	21/17/15	30/24/19	35/28/21	37/32/27
Fan Motor	W	75	75	75	145	145	145
Sound Pressure Level (Overall Scale) (hi/me/lo)	dB(A)	44/42/38	46/43/41	48/45/42	49/45/39	49/46/41	50/48/44
Outer Dimensions							
Height	mm	163	163	163	225	225	225
Width	mm	1094	1314	1314	1314	1574	1574
Depth	mm	625	625	625	625	625	625
Net Weight	kg	28	31	31	35	41	41
Colour				Spring white	(4.1Y8.5 / 0.7)		
Refrigerant			R410 A ( N	Nitrogen Charged in I	actory for Corrosion	-resistance)	
Connections				Flare-nut Connect	ion (with flare-nuts)		
Refrigerant-Piping							
Liquid Line	mm(in)	ø 6.35 (1/4)	ø 9.53 (3/8)	ø 9.53 (3/8)	ø 9.53 (3/8)	ø 9.53 (3/8)	ø 9.53 (3/8)
Gas Line	mm(in)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)
Condensate Drain	mm	ø 25 OD	ø 25 OD	ø 25 OD	ø 25 OD	ø 25 OD	ø 25 OD
Packing Measurements	m³	0.24	0.29	0.29	0.36	0.43	0.43
Packing Measurements	m³	0.24	0.29	0.29	0.36	0.43	0.43
Remote Control Switch	-			PC-F	2HTE		

NOTES: OD: Outer Diameter

Piping Length: 7.5 meters DB: Dry Bulb; WB: Wet Bulb

1. The nominal cooling and heating capacity is the combined capacity of the HITACHI standard split system, and are based on the JISB 8616.

\*R410A (Std. Accessory pipe to be used)

**Cooling Operation Conditions** Indoor Air Inlet Temperature: 27.0 °C DB 19.0 °C WB

Outdoor Air Inlet Temperature: 35.0 °C DB

Heating Operation Conditions
Indoor Air Inlet Temperature: 20.0 °C DB

Outdoor Air Inlet Temperature: 7.0 °C DB

6.0 °C WB

 ${\bf 2.}$  The Sound Pressure Level is based on the following conditions:

- 1.0 meters Beneath the Unit, 1.0m from discharge grill.
- Voltage of the power source for the indoor fan motor is 230V.
The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration when installing the unit.

### • Slim design

- Adjustable fan speed
- Adjustable static pressure
- Drain Pump as standard
- Air Filter as standard

# In-the-ceiling



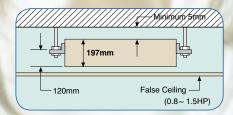


### **RPI-FSNE Technical Description**

The RPI in the ceiling type indoor unit is designed especially for installation in false ceiling spaces.

### Slim but sturdy design

The RPI has a reinforced structure to give the unit more rigidity when it is suspended. It also only requires a small amount of space due to the reduction in overall dimensions and has one of the lowest height in the market, allowing it to be installed in practically any existing false ceiling or ducted space with out substantial modification.



### Adjustable static pressure

The unit has 3 static pressure settings and can be adapted to suit the installation requirements. The high static pressure setting can be used for longer duct installations and the low static pressure setting for those installations with short duct lengths.

### Drain pump as standard (Only for 1.5~6.0 HP)

The units are equipped with an automatic internal drain pump, which removes the accumulated condensation from the drain pan. An electronic sensor monitors the water level activating the pump only when necessary.

### Intake filter as standard

To allow for situations where there is little or no intake ducting the RPI unit is equipped with an intake filter as standard. If the unit is connected to a longer duct it is possible to remove the filter or it can be left in place. The filter can be easily accessed and removed from the bottom for cleaning and maintenance without having to remove any ducting.

### **Air Intake Direction**

The direction of the air intake can be modified by interchanging the bottom panel with the fan cover allowing a horizontal or vertical air intake.

### **Econofresh Kit**

As part of the Utopia range the Econofresh can provide up to 100% fresh air and has the ability to provide 'free cooling'via dampers when the outdoor ambient temperature is below the temperature required indoors. Available for 5.0HP unit.

Model		RPI-0.8 FSN1E	RPI-1.0 FSN1E	RPI-1.5 FSN1E	RPI-2.0 FSN1E	RPI-2.5 FSN1E	RPI-3.0 FSN1E	RPI-4.0 FSN1E	RPI-5.0 FSN1E	RPI-6.0 FSN1E	RPI-0.8 FSNE	RPI-10 FSNE
Power Supply	AC 10, 230 V, 50 Hz											
<b>Nominal Cooling Capacity</b>	W	2,200	2,800	4,500	5,600	7,100	8,000	11,200	14,000	16,000	22,400	28,000
<b>Nominal Heating Capacity</b>	W	2,500	3,200	5,000	6,300	8,500	9,000	12,500	16,000	18,000	25,000	31,500
Air Flow Rate												
Rated	m³/min	8	8	10	16	19	22	30	35	36	66	75
Low	m³/min	7	7	9	13	15	17	28	31	32	58	67
Static Pressure												
Level 3	mm/Aq	4	4	4	8	8	12	12	12	12	22	22
Level 2	mm/Aq	2.5	2.5	2.5	5	5	8	8	8	8	-	-
Level 1	mm/Aq	-	-	-	2	2	4	2	2	2	18	18
Fan Motor	W	40	40	55	65	65	150	225	225	385	1250	1250
Sound Pressure Level (Overall Scale)												
High/Low	dB(A)	34/31	34/31	35/32	33/29	35/30	35/31	37/35	39/36	40/39	54/51	55/52
Outer Dimensions												
Height	mm	197	197	197	274	274	274	274	274	274	475	475
Width	mm	1020	1020	1020	1074	1074	1074	1464	1464	1464	1580	1580
Depth	mm	574	574	574	643	643	643	643	643	643	600	600
Net Weight	kg	33,5	33,5	33,5	43	45	45	51	52	52	85	87
Refrigerant					R410A (Ni	trogen Charge	ed in Factory f	or Corrosion-F	Resistance)			
Connections												
Refrigerant-Piping						Flare-Nut C	Connection (wi	th flare nut)				
Liquid Line	mm(in.)	Ø 6.35 (1/4)	Ø 6.35 (1/4)	Ø 6.35 (1/4)	Ø 6.35 (1/4)	Ø 9.53 (3/8)						
Gas Line	mm(in.)	Ø 12.7 (1/2)	Ø 12.7 (1/2)	Ø 12.7 (1/2)	Ø 15.88 (5/8)	Ø 19.05 (3/4)	Ø 22.20 (7/8)					
Condensate Drain	mm	Ø 32 0D	Ø 25 0D	Ø 25 0D								
Packing Measurements	m³	0.16	0.16	0.16	0.36	0.36	0.36	0.48	0.48	0.48	0.50	0.50

### NOTES:

1. The nominal cooling and heating capacity is the combined capacity of the HITACHI standard split system, and are based on the JISB 8616.

**Cooling Operation Conditions** Indoor Air Inlet Temperature: 27.0 °C DB 19.0 °C WB Outdoor Air Inlet Temperature: 35.0 °C DB

Heating Operation Conditions
Indoor Air Inlet Temperature: 20.0 °C DB Outdoor Air Inlet Temperature: 7.0 °C DB

Piping Length: 7.5 meters DB: Dry Bulb; WB: Wet Bulb

\*R410A (Std. Accessory pipe to be used)

OD: Outer Diameter

HSP: High Static Pressure Connection

LSP: Low Static Pressure Connection

 ${\bf 2.}$  The Sound Pressure Level is based on the following conditions:

- 1.5 meters Beneath the Unit.

- Notinge of the power source for the indoor fan motor is 230V.

The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration when installing the unit.

3. Sound Pressure Level

HSP = High Static Pressure STDSP = Static Standard Pressure LSP = Low Static Pressure

	Model	EF-5GE
	Model	
Combined Indoor Unit Model		RPI-5FSN1E
Outer Dimensions		
Height	mm	254
Width	mm	1350 + 59
Depth	mm	270
Net Weight	Kg	12.5
Damper Motor Quality		1
Approximate Packing Measureme	ent m3	0.13
Standard Accessories		Fresh Outdoor Air Inlet Thermistor

### **RPK-FSN1M Technical Description**

- New design
- Ideal for the home
- Compact and stylish

This model has been designed to create a pleasant, quiet and comfortable environment making it an ideal choice for the home. It has a stylish and compact design and can be used with wireless or wired remote controllers.

### **Compact and Stylish**

The model has been designed with a flat front panel and the width has been reduced by 250mm to 780mm while the weight reduced by approximately 17%.

### **Wireless or Wired Control**

The indoor unit is equipped with a wireless receiver kit as standard but can however be connected to the PC-P2HTE remote controller.

### **Easy Maintenance**

To allow for fault diagnosis when using the wireless remote controllers the indoor unit LED has been improved to display alarm codes.



Model		RPK-1.5FSN1M			
Nominal Cooling Capacity	kW	3.60			
Nominal Heating Capacity	kW	4.00			
Air Flow Rate (hi/me/lo)	m³/min	11/10/9			
Fan Motor	W	20			
Sound Pressure Level (Overall Scale) (hi/me/lo)	dB(A)	40/38/36			
Outer Dimensions					
Height	mm	280			
Width	mm	780			
Depth	mm	210			
Net Weight	kg	10			
Refrigerant		R410 A ( Nitrogen Charged in Factory for Corrosion-resistance)			
Connections		Flare-nut Connection (with flare-nuts)			
Refrigerant-Piping					
Liquid Line	mm(in)	ø 6.35 (1/4)			
Gas Line	mm(in)	ø 12.7 (1/2)			
Condensate Drain	mm	ø 26 OD			
Packing Measurements	m³	0.07			
Remote Control Switch		PC-P2HTE / PC-LH3A			

NOTES: OD: Outer Diameter

1. The nominal cooling capacity is the combined capacity of the HITACHI standard split system, and is based on the JISB 8616.

Cooling Operation Conditions
Indoor Air Inlet Temperature: 27.0 °C DB
19.0 °C WB
Outdoor Air Inlet Temperature: 35.0 °C DB

Heating Operation Conditions
Indoor Air Inlet Temperature: 20.0 °C DB
7.0 °C WB
Outdoor Air Inlet Temperature: 6.0 °C DB

Piping Length: 7.5 meters DB: Dry Bulb; WB: Wet Bulb

2. The Sound Pressure Level is based on the following conditions:

1 meter Beneath the Unit and 1 meter from inlet grille.
 Voltage of the power source for the indoor fan motor is 230V.
 In case of the power source of 240V, the sound pressure level increases by about 1dB.

The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

### **RPK-FSNM Technical Description**

- Extended line-up NEW 1.5 - 4.0
- Quiet operation
- More compact than previous models

### **Elegant and Compact Design**

With its elegant and timeless design, this unit will match any decor. Its compact size and reduced weight (by 15%) makes it easy to install.

### **Wireless or Wired Control**

The indoor unit is equipped with a wireless receiver kit as standard but can however be connected to the PC-P2HTE remote controller.

### **Swing Louver**

The unit has an automatic swing louver and 3 sets of directional fins that can be set to provide comfortable air conditioning to the entire room.

### **Quiet Operation**

The conical blade fan ensures a high air flow with low noise and the trapezoidal blades cut the air diagonally to minimise air resistance, which reduces noise and improves efficiency.

# Wall mounted



Model		RPK-1.5FSNM	RPK-2.0FSNM	RPK-2.5FSNM	RPK-3.0FSNM	RPK-4.0FSNM
Nominal Cooling Capacity	kW	3.60	5.00	6.30	7.10	10.00
Nominal Heating Capacity	kW	4.00	5.60	7.00	8.00	11.20
Air Flow Rate (hi/me/lo)	m³/min	13/11/9	14/12/10	22/18/15	22/18/15	26/24/20
Fan Motor	W	20	20	40	40	41
Sound Pressure Level (Overall Scale) (hi/me/lo)	dB(A)	39/37/34	40/38/36	43/40/37	43/40/37	49/46/43
Outer Dimensions						
Height	mm	295	295	360	360	360
Width	mm	1030	1030	1390	1390	1390
Depth	mm	183	183	225	225	225
Net Weight	kg	12	12	21	21	22
Refrigerant			R410 A ( Nitrogen	Charged in Factory for Co	orrosion-resistance)	
Connections			Flare-	nut Connection (with flare	e-nuts)	
Refrigerant-Piping						
Liquid Line	mm(in)	ø 6.35 (1/4)	ø 6.35 (1/4)	ø 9.53 (3/8)	ø 9.53 (3/8)	ø 9.53 (3/8)
Gas Line	mm(in)	ø 12.7 (1/2)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)
Condensate Drain	mm	ø 26 OD	ø 26 OD	ø 26 OD	ø 26 OD	ø 26 OD
Packing Measurements	m³	0.07	0.11	0.20	0.20	0.20
Remote Control Switch	Control Switch PC-P2HTE / PC-LH3A					

NOTES: OD: Outer Diameter

1. The nominal cooling and heating capacity is the combined capacity of the HITACHI standard split system, and are based on the JISB 8616.

Heating Operation Conditions Piping Length: 7.5 meters Indoor Air Inlet Temperature: 20.0 °C DB DB: Dry Bulb; WB: Wet Bulb

Cooling Operation Conditions
Indoor Air Inlet Temperature: 27.0 °C DB
19.0 °C WB

Outdoor Air Inlet Temperature: 7.0 °C DB
6.0 °C WB

2. The Sound Pressure Level is based on the following conditions:

- 1.0 meters Beneath the Unit, 1.0 meters from discharge grille.
   Voltage of the power source for the indoor fan motor is 230V.

The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration when installing the unit.

### **RPF/RPFI-FSNM Technical Description**

### Floor mounted indoor units - RPF

- Floor type
- Slim design, only 220mm deep
- Low height, only 630mm
- Light unit
- Low sound level



### Floor Mounted - cased

### **Space Saving Slim Unit**

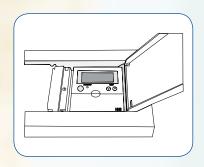
This unit's slim line design with a depth of only 220mm allows the unit to be freely installed without spoiling the aesthetics of a room.

### Effective use of space

With a height of only 630mm it is possible to install under or by a window while still leaving plenty of space.

### **Optional Location for Remote Control Switch**

It is also possible to conceal the remote controller as there is space to install a PC-P2HT inside the casing.



## Floor mounted

### Floor concealed indoor units - RPFI

- Compact design
- 620mm in height
- 220mm in depth



### Floor Mounted - uncased

### **Compact Design**

Special emphasis has been placed on compatibility with interior design. The space saving design 620mm in height, 220mm in depth, fits perfectly into the space below bay windows.

### **Air Discharge Direction**

The Air discharge direction can be modified by repositioning the back cover allowing for more installation options.

Model		RPF-1.5FSNE	RPF-2.0FSNE	RPF-2.5FSNE	RPFI-1.5FSNE	RPFI-2.0FSNE	RPFI-2.5FSNE
Nominal Cooling Capacity	kW	3.60	5.00	6.30	3.60	5.00	6.30
Nominal Heating Capacity	kW	4.00	5.60	7.00	4.00	5.60	7.00
Air Flow Rate (hi/me/lo)	m³/min	12/10/9	16/14/11	16/14/11	12/10/9	16/14/11	16/14/11
Fan Motor	W	28	45	45	28	45	45
Sound Pressure Level (Overall Scale) (hi/me/lo)	dB(A)	38/35/31	39/36/32	42/38/34	38/35/31	39/36/32	42/38/34
Outer Dimensions	2-( )						
Height	mm	630	630	630	620	620	620
Width	mm	1170	1420	1420	988	1238	1238
Depth	mm	220	220	220	220	220	220
Net Weight	kg	23	33	34	23	27	28
Refrigerant		R410 A ( Nitrogen C	Charged in Factory for (	Corrosion-resistance)	R410 A (Nitrogen C	Charged in Factory for	Corrosion-resistance)
Connections		Flare-nu	t Connection (with fla	are-nuts)	Flare-nut Connection (with flare-nuts)		
Refrigerant-Piping							
Liquid Line	mm(in)	ø 6.35 (1/4)	ø 6.35 (1/4)	ø 9.53 (3/8)	ø 6.35 (1/4)	ø 6.35 (1/4)	ø 9.53 (3/8)
Gas Line	mm(in)	ø 12.7 (1/2)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 12.7 (1/2)	ø 15.88 (5/8)	ø 15.88 (5/8)
Condensate Drain	mm	ø 18.5 OD	ø 18.5 OD	ø 18.5 OD	ø 18.5 OD	ø 18.5 OD	ø 18.5 OD
Packing Measurements	m³	0.24	0.29	0.29	0.23	0.25	0.25
Remote Control Switch				PC-F	2HTE		

NOTES: **OD:** Outer Diameter

1. The nominal cooling and heating capacity is the combined capacity of the HITACHI standard split system, and are based on the JISB 8616.

Cooling Operation Conditions
Indoor Air Inlet Temperature: 27.0 °C DB Indoor Air Inlet Temperature: 25.0 °C DB Indoor A

- 2. The Sound Pressure Level is based on the following conditions:
- 1.0 meters Beneath the Unit, 1.0 meters from floor level.
   Voltage of the power source for the indoor fan motor is 230V.

The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration when installing the unit.

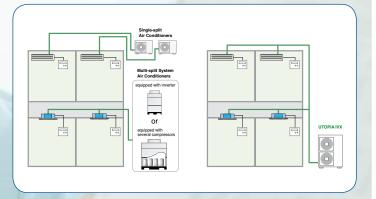
### **Utopia IVX Technical Description**

- Compact and Lightweight
- Minimum use of refrigerant
- Wide operating range down to -15° cooling and -20°
- Individual unit control
- Award winning Energy Efficiency – High COP of 4.24 (8HP models)

The Utopia IVX is a very efficient product boasting an extremely high COP of 4.24 (8HP models) and is a further development on its predecessor which was presented the "Shoeene Taishou" (Energy Efficiency Award) by the Japanese Government. The unit uses a horizontal discharge twin fan design allowing for a more efficient use of floor space and is available in 20, 25 and 30 kW models.

### **Greater Installation Flexibility**

The IVX changes the way we think about twin, triple and quad split configurations and is the perfect choice for installations requiring individual unit control but have no need for the piping length capabilities available with more expensive VRF systems.

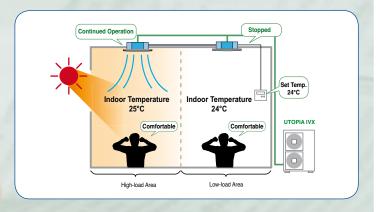


# Utopia IVX



### More Efficient Control

By the use of individual control we can create a more comfortable environment for rooms that have unbalanced loads. This also leads to more economical operation as units not requiring operation will stop, reducing wasted energy.



Model		RAS-8HRNM	RAS-10HRNM	RAS-12HRNM	
Power Supply			380-415V/50Hz		
Nominal Cooling Capacity (Max/Nom/Min)	kW	22.4/20.0/9.0	28.0/25.0/11.2	33.5/30.0/13.5	
Nominal Heating Capacity (Max/Nom/Min)	kW	28.0/22.4/8.3	35.0/28.0/10.5	37.5/33.5/12.6	
Cabinet Colour (Munsell Code)	-		Natural Grey (1.0Y8.570.5)		
Sound Pressure Level (Night Shift)	dB (A)	52 (50)/54	55 (53)/57	58 (55)/60	
Outer Dimensions					
Height	mm	1650	1650	1650	
Width	mm	1100	1100	1745	
Depth	mm	390	390	390	
Weight	kg	170	170	173	
Refrigerant Flow Control			R410 A Micro Controlled Expansion Valve		
Compressor		DC Inverter Driven Compressor			
Model		E655DHD-65D2			
Quantity		1	1	1	
Heat Exchanger		Multipass Cross Finned Tube			
Condenser Fan			Propeller Fan		
Quantity		2	2	2	
Air Flow Rate	m³/min	121	150	163	
Motor Output		170+120	170+170	170+200	
Refrigerant-Piping			Flare-nut Connection (factory supplied)		
Liquid Line	mm(in)	ø 9.53 (3/8)	ø 12.7 (1/2)	ø 12.7 (1/2)	
Gas Line	mm(in)	ø 25.4 (1)*1	ø 25.4 (1)	ø 25.4 (1)	
Maximum Pipe Length	m		100		
Height Difference between indoor units	m		≤3		
<b>Height Difference</b> between first branch kit and indoor units	m		≤15		
Height Difference between indoor unit and outdoor unit	m	outdoor unit higher tha	an indoor unit ≤30 outdoor unit low	er than indoor unit ≤20	
Refrigerant Charge (30m chargeless)	kg	7.3	7.8	8.5	
Wiring					
Control Circuit	mm	0.75	0.75	0.75	
Connecting Wires Between Outdoor and Indoor Unit		2	2	2	
Packing Measurement	m³	1.44	1.44	1.44	

### NOTES:

- 1. (\*1) The performance indicates when the indoor and outdoor units are combined with 4-way cassette type.
- liquid pipe diameter should be Ø12.7.
- 2. (\*2) When the piping length is over 70m, 3. The above cooling and heating capacities show the capacities when the outdoor unit is operated with the 100% rating of indoor to the notes on page 31 units, and are based on the standard JIS B8616-1984.

For other conditions please refer

### **Combination Table**

Model			RAS-8	BHRNM					RAS-1	DHRNM					RAS-12	2HRNM		
Single			8	.0			10.0				-							
Twin	4	4.0/4.0			5.0/	3.0	5.0/5.0 6.0/4.			6.0/4.0		6.0/6.0						
Triple	3.0/3.0/2.	3 3.0	0/3.0/2.5	3.0/3.0/	/3.0	3.0/2.5/2.5	;	3.0/3.0/3.0	)	4	4.0/3.0/3.0	0			4.0/4	.0/4.0		
Quad	2.0/ 2.0/ 2.0/ 2.0 2.5/ 2.0/ 2.0/ 1.8	2.0/ 2.0/ 2.3/ 1.8 2.5/ 2.0/ 2.0/ 2.0	2.0/ 2.0/ 2.5/ 2.5	2.3/ 1.8/ 2.3/ 1.8	2.: 1.: 2.: 1.	8/ 1.8/ 5/ 2.5/	2.5/ 2.5/ 2.5/ 2.5 3.0/ 2.5/ 3.0/ 2.0	2.5/ 2.5/ 3.0/ 2.3 3.0/ 2.5/ 2.5/ 2.5/	2.5/ 2.5/ 3.0/ 2.0	3.0/ 2.3/ 3.0/ 2.3	3.0/ 2.3/ 3.0/ 2.0	3.0/ 2.0/ 3.0/ 2.0	3.0/ 3.0/ 3.0/ 3.0 4.0/ 2.5/ 3.0/ 3.0	3.0/ 3.0/ 3.0/ 2.5 4.0/ 2.5/ 3.0/ 2.5	3.0/ 3.0/ 4.0/ 2.3	3.0/ 2.5/ 3.0/ 2.5	3.0/ 2.5/ 4.0/ 2.3	4.0/ 2.3/ 4.0/ 2.3

### **Utopia DC Inverter Technical Description**

- Compact design
- DC Fan Motor
- High efficiency Scroll Compressor
- Improved refrigerant cycles (Gas Injection Cycle)

The Utopia DC Inverter range is available from 5.0-14kW cooling (nominal) giving high COP's for extremely efficient operating costs.

### Compatibility

Compatible with all Hitachi System Free indoor units.

### DC Fan Motor with Outstanding Efficiency

The DC fan motor greatly improves efficiency compared to conventional products using an AC motor. Also, air blasts are reduced by controlling the rotation speed of the fan. Stable operation is provided against strong head winds of approximately 10 m/s on the front face of the outdoor unit.

### **New Gas Injection System**

New high pressure gas injection directly to the compressor improves cycle efficiency and reduces compressor input (except for RAS-2/2.5/3H(V)RNE).

### **Inverter control**

The inverter controls compressor speeds from 30 Hz to 115 Hz, quickly reaching the set temperature and maintaining a stable energy-saving operation.

# Utopia DC Inverter





Model		RAS-2HVRNE	RAS-2.5HVRNE	RAS-3HVRNE	RAS-4HVRNE	RAS-5HVRNE	RAS-4HRNE	RAS-5HRNE	RAS-6HRNE
Power Supply				AC 1ø 230V 50H	Z			AC 3ø 400V 50Hz	
Nominal Cooling Capacity (Max/Nom/Min)	kW	5.6/ <b>5.0</b> /2.0	7.1/ <b>6.3</b> /2.7	8.00/ <b>7.10</b> /3.90	11.20/ <b>10.00</b> /4.90	14.0/ <b>12.50</b> /6.70	11.2/ <b>10.0</b> /4.9	14.0/ <b>12.5</b> /6.7	16.0/ <b>14.0</b> /6.9
Nominal Heating Capacity (Max/Nom/Min)	kW	7.1/ <b>5.6</b> /2.1	8.0/ <b>7.0</b> /3.1	10.0/ <b>8.00</b> /4.0	14.0/ <b>11.20</b> /5.7	18.0/ <b>14.00</b> /7.0	14.0/ <b>11.2</b> /5.7	18.0/ <b>14.0</b> /7.0	19.4/ <b>16.0</b> /8.1
Cabinet Colour (Munsell Code)	-				Natural Grey	(1.0Y8.5/0.5)			
Sound Pressure Level (Night Shift)	dB (A)	41/(38)	42/(38)	43/(39)	45/(41)	47/(43)	45/(41)	47/(43)	48/(44)
Outer Dimensions									
Height	mm	800	800	800	1240	1240	1240	1240	1240
Width	mm	850	850	850	950	950	950	950	950
Depth	mm	315	315	315	315	315	315	315	315
Net Weight	kg	57	60	60	95	97	100	102	102
Refrigerant Flow Control	-			R41	OA Micro-Computer C	Controlled Expansion	ı Valve		
Compressor		Hermetic (Rotary)	Hermetic (Rotary)	Hermetic (Rotary)	Hermetic (Scroll)	Hermetic (Scroll)	Hermetic (Scroll)	Hermetic (Scroll)	Hermetic (Scroll)
Model	-	2YC32GXD	2YC45BXD	2YC45BXD	E305AHD	E405AHD	E305AHD	E405AHD	E405HD
Quantity	-	1	1	1	1	1	1	1	1
Motor Output	kW	0.98 (4)	1.38 (4)	1.38 (4)	2.2 (4)	3.00 (4)	2.2 (4)	3.0 (4)	3.0 (4)
Heat Exchanger					Multi-Pass Cro	ss-Finned Tube			
Condenser Fan	-			Propeller Fan				Propeller Fan	
Quantity	-	1	1	1	2	2	2	2	2
Air Flow Rate	m³/min	35	42	45	80	90	80	90	100
Motor Output (Pole)	W	50(8)	50(8)	50(8)	30(8) + 50(8)	50(8) + 70(8)	30(8) + 50(8)	50(8) + 70(8)	50(8) + 70(8)
Connections				Flare	-Nut and/or Flange Co	onnection (Factory s	upplied)		
Refrigerant-Piping									
Liquid Line	mm(in.)	ø 6.35 (1/4)	ø 9.53 (3/8)	ø 9.53 (3/8)	ø 9.53 (3/8)	ø 9.53 (3/8)	ø 9.53 (3/8)	ø 9.53 (3/8)	ø 9.53 (3/8)
Gas Line	mm(in.)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)
Refrigerant Charge	kg	1.7	2.3	2.4	3.6	3.6	3.6	3.6	3.6
Wiring Holes									
Power Supply	mm	ø 26.5	ø 26.5	ø 26.5	ø 26.5	ø 26.5	ø 26.5	ø 26.5	ø 26.5
Control Circuit	mm	ø 26.5	ø 26.5	ø 26.5	ø 26.5	ø 26.5	ø 26.5	ø 26.5	ø 26.5
Connecting Wires Between Outdoor and Indoor Unit	-	2	2	2	2	2	2	2	2
Packing Measurement	m³	0.34	0.34	0.34	0.55	0.55	0.55	0.55	0.55

### NOTES:

1. The nominal cooling and heating capacity is the combined capacity of the HITACHI standard split system, and are based on the ISO 5151.

Cooling Operation Conditions
Indoor Air Inlet Temperature: 27 °C DB (80 °F DB)
19 °C WB (66.2 °F WB)
Outdoor Air Inlet Temperature: 35 °C DB (95 °F DB)

Outdoor Air Inlet Temperature: 7 °C DB (45 °F DB)

Piping Length: 7.5 meters Piping Lift: 0 Meter

The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

6 °C WB (43 °F WB) 2. The sound pressure is based on the following conditions.1 Meter from the unit service cover surface, and 1.5 Meters from floor level.

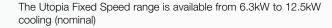
### **Combination Table**

	Model	RAS-2HVRNE	RAS-2.5HVRNE	RAS-3HVRNE	RAS-4H(V)RNE	RAS-5H(V)RNE	RAS-6HRNE
Single		2.0	2.5	3.0	4.0	5.0	6.0
Twin		-	-	1.5/1.5	2.0/2.0	2.5/2.5	3.0/3.0
Triple		_	_	-	_	_	2.0/2.0/2.0

### **Utopia Fixed Speed Technical Description**

- Compact design and light weight
- R410A refrigerant

• Connectable to 'System Free' indoor units



### **R410A Refrigerant**

Using R410A refrigerant adds the following benefits:

- Reduced power consumption
- Increased system performance
- Higher heat exchange coefficient
- Reduction in component size

### Compact design & light weight

Extremely compact design enabling easy installation and effective use of plant space.

Hitachi has created one of the lightest and most compact systems on the market.

### Compatibility.

Compatible with all Hitachi System Free indoor units.

# Utopia Fixed Speed





Model		RAS-2.5HNVE	RAS-3HNVE	RAS-4HNVE	RAS-2.5HNE	RAS-3HNE	RAS-4HNE	RAS-5HNE
Power Supply			AC 1ø 230V 50Hz			AC 3ø 40	00V 50Hz	
Nominal Cooling Capacity (Max/Nom/Min)	kW	6.30	7.10	10.00	6.30	7.10	10.0	12.5
Nominal Heating Capacity (Max/Nom/Min)	kW	7.00	8.00	11.20	7.00	8.00	11.2	14.0
Cabinet Colour (Munsell Code)	-			Nat	tural Grey (1.0Y8.5/	0.5)		
Sound Pressure Level (Night Shift)	dB (A)	47(46)	47(46)	47(46)	47(46)	47(46)	47(46)	47(46)
Outer Dimensions								
Height	mm	800	800	1240	800	800	1240	1240
Width	mm	850	850	950	850	850	950	950
Depth	mm	315	315	315	315	315	315	315
Weight	kg	66	69	90	66	69	90	90
Refrigerant Flow Control					R410 A			
Compressor		Hermetic (Rotary)		Hermetic (Scroll)	Hermetic (Rotary)	Hermetic (Rotary)	Hermetic (Scroll)	Hermetic (Scroll)
Model		5JS290	5JS330	ZP41K3E	5JS290	5JS330	ZP41K3E	ZP57K3E
Quantity		1	1	1	1	1	1	1
Motor Output		1.9 (2)	2.2 (2)	3.0 (2)	1.9 (2)	2.2 (2)	3.0 (2)	3.75 (2)
Heat Exchanger				Multi	-Pass Cross-Finned	Tube		
Condenser Fan					Propeller Fan			
Quantity		1	1	2	1	1	2	2
Air Flow Rate	m³/min	40	46	70	40	46	70	103
Motor Output (Pole)	W	70	70	70x2	70	70	70x2	70x2
Refrigerant-Piping				Flare-Nut Connec	ction with Flare Nuts	(factory supplied)		
Liquid Line	mm(in)	ø 9.53 (3/8)	ø 9.53 (3/8)	ø 9.53 (3/8)	ø 9.53 (3/8)	ø 9.53 (3/8)	ø 9.53 (3/8)	ø 9.53 (3/8)
Gas Line	mm(in)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)	ø 15.88 (5/8)
Refrigerant Charge	kg	2.3	2.5	3.6	2.3	2.5	3.6	3.6
Wiring								
Power Supply	mm	ø 26.5	ø 26.5	ø 26.5	ø 26.5	ø 26.5	ø 26.5	ø 26.5
Control Circuit	mm	ø 26.5	ø 26.5	ø 26.5	ø 26.5	ø 26.5	ø 26.5	ø 26.5
Connecting Wires Between Outdoor and Indoor Unit	-	2	2	2	2	2	2	2
Packing Measurement	m³	0.34	0.34	0.55	0.34	0.34	0.55	0.55

1. The nominal cooling and heating capacity is the combined capacity of the HITACHI standard split system, and are based on the ISO 5151.

Cooling Operation Conditions
Indoor Air Inlet Temperature: 27 °C DB (80 °F DB)
Indoor Air Inlet Temperature: 20 °C DB (86 °F DB)
Outdoor Air Inlet Temperature: 7 °C DB (45 °F DB)

Outdoor Air Inlet Temperature: 7 °C DB (45 °F DB)

6 °C WB (43 °F WB)

The sound pressure is based on the following conditions.
 Meter from the unit service cover surface, and 1.5 Meters from floor level.

The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

### **Combination Table**

### Utopia N HN(V)E

	Model	RAS-2.5HN(V)E	RAS-3HN(V)E	RAS-4HN(V)E	RAS-	5HNE					
Single		2.5	3.0	4.0	5	0					
Twin		-	1.5/1.5	2.0/2.0	2.5/2.5	3.0/2.0					

### **Utopia Centrifugal Technical Description**

- Non visible installation
- Highly reliable Hitachi scroll compressor
- Can be installed indoors
- Changeable configurations for air inlet and outlet

The Utopia Centrifugal units can be installed indoors with field supplied ductwork and are therefore ideal for situations where installations have to be hidden or where circumstances do not allow for the use of traditional styled outdoor units.

### Low temperature operation

Wide working range including Outdoor Unit Fan Control in cooling mode for operating at low ambient temperature as standard.

### Flexible Inlet Air and Outlet Air option

Four different configurations for Inlet and Outlet Air are available. Side panels and grilles could be changed in the fi eld depending on each installation needs.

### Compatibility

Compatible with all Hitachi System Free indoor units.

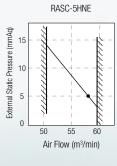
### Utopia series control, H-Link connection

- H-LINK wiring system requires only two transmission wires connecting each indoor unit and outdoor unit for up to 16 refrigerant cycles, and connecting wires for all indoor units and all outdoor units in series.
- Total wiring length is remarkably reduced.
- Only one connection is required for the wiring between the indoor unit and outdoor unit.
- Easy wiring connection to the central controllers.

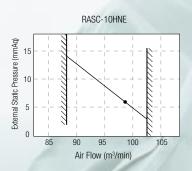
# Utopia Centrifugal



### **Fan Performance Curves**



• : Normal point



• : Normal point

Mode	I	RASC-5HNE	RASC-10HNE			
<b>Electrical Power Supply</b>		3ø 40	00V 50Hz			
Nominal Cooling Capacity (Max/Nom/Min)	kW	12.50	25.00			
Nominal Heating Capacity (Max/Nom/Min)	kW	14.00	28.00			
Cabinet Colour (Munsell Code)	-	Soft Grey (9002)				
Sound Pressure Level (Night Shift)	dB (A)	53	60			
Outer Dimensions						
Height	mm	555	640			
Width	mm	1312	2050			
Depth	mm	835	930			
Weight	kg	175	310			
Refrigerant	-	R	410A			
Flow Control	-	Re	strictor			
Compressor		Herme	etic (scroll)			
Quantity		1	1			
Motor Output	kW	3.75	(n.a)			
Heat Exchanger		Multi-Pass Cr	ross-Finned Tube			
Fan Motor		Cer	ntrifugal			
Quantity	-	1	1			
Air Flow Rate	m³/min	58	98			
Nominal Static Pressure	mmAq	50	63			
Motor Output(Pole)	W	550	1100			
Refrigerant-Piping		Flare-Nut Connection (Factory Supplied)				
Liquid Line	mm(in)	ø9.53 (3/8")	ø12.7 (1/2")			
Gas Line	mm(in)	ø15.88 (5/8")	ø25.40 (1")			
Refrigerant Charge	kg	4.8	8.5			
Maximum Current	А	20	32			
Packing Measurement	m³	0.60	1.22			

### NOTES:

1. The nominal cooling and heating capacity is the combined capacity of the HITACHI standard split system, and are based on the ISO 5151...

Cooling Operation Conditions
Indoor Air Inlet Temperature: 27 °C DB (80 °F DB)
19 °C WB (66.2 °F WB)

Outdoor Air Inlet Temperature: 35 °C DB (95 °F DB)

Outdoor Air Inlet Temperature: 7 °C DB (45 °F DB)
6 °C WB (43 °F WB)

2. The sound pressure is based on the following conditions.

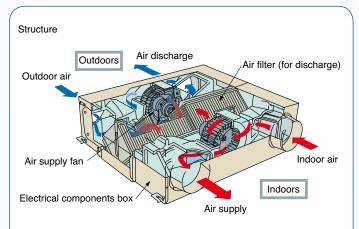
1 Meter from the unit service cover surface, and 1.5 Meters from floor level.

The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

### **Combination Table**

	Model	RASC-5HNE	RASC-10HNE
Single		5.0	10.0
Twin		2.5/2.5 2.0/3.0	5.0/5.0 4.0/6.0
Triple		1.5/1.5/2.0	3.0/3.0/4.0
Quad		-	2.5/2.5/2.5

### **Utopia – KPI Technical Description**



### **Fixed Type Heat Exchanging Element**

- The newly developed fixed type heat exchanging element with high temperature exchange efficiency equivalent to the rotor type element, has been adopted for the new total heat exchangers (Temp Exchange Efficiency: 77% <in case of 500m3/h type unit>).
   In addition, reliability is increased due to reduction of moving parts.
- Low weight with simple unit structure: 33kg (in case of 500m3/h type unit).

Provides a comfortable environment by control interlocking with air conditioning units.

### Controllable using the remote control switch for the air conditioning unit.

Can be controlled in various ways using the remote control switch for the air conditioning unit (PC-P2HTE).

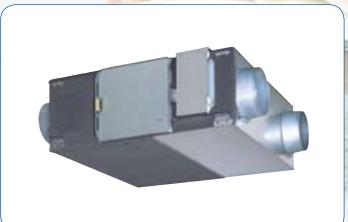
### **Functions**

- Simultaneous RUN/STOP switch both for air conditioning units and heat exchanging unit
- Individual operation of heat exchanging unit
- Fan speed control (high/medium/low)
- Ventilation mode selection (automatic/heat exchange/bypass)<sup>11</sup>
- Pre-cool/pre-heat control (interlocking start with delay in 30 or 60 minutes)\*1
- 7 day Time clock with PC-P2HTE
- Increased air supply operation
- · Specific alarm display
- \*1 Required option to be selected at remote control switch.

### Automatic selection of most suitable ventilation mode

Depending on temperature conditions both outdoors and indoors, the most suitable ventilation mode is automatically selected, designed for energy efficiency.

# Total heat exchanger



### **Other Characteristics**

- Quiet operation with low noise level of 32.5-33.5 dB (A) (at Hi Tap of KPI 5021 Type) has been realised by improving the flow path configuration.
- Operation not only with SET-FREE Series Indoor Unit, but also with UTOPIA Series Indoor Unit.
- Connectable to H-LINK System with Central Station or with CS-NET in Operation with Indoor Unit.
- Flexible Duct Installation: The connecting direction of duct at outdoor side (OA,EA) can be changed according to the condition of the installation site (2 directions).
- Reduced packing material for environment protection. The wood for the packing use has been reduced for environment protection.
- Can also be installed upside down.

### **General Data Standard Connection** Central Station (PSC-5S) INDOOR UNIT TOTAL HEAT EXCHANGER (T.H.E.) T.H.E H-LINK Example UTOPIA SET-FREE System PC-P2HTE PC-P2HTE PC-P2HTE PC-P2HTE Able to control up to 128 Indoor Units consististing of 16 refrigeration cycles Able to control up to 16 Indoor Units and Total Heat Exchanger Units Configuration Direct Control Central Station (PSC-5S) Remote Control Switch (PC-P2HTE) Controllers Remote Control Switch (PC-2HTE) Hitachi Computer Control Network System CS-NET WEB H-LINK H-LINK Example System CS-NET WEB CS-NET WEB CS-NET WEB Configuration Able to control up to 128 Indoor Units consististing of 16 refrigeration cycles CS-NET WEB Remote Control Switch (PC-P2HTE) Controllers

### **General Data**

Model		KPI-2521	KPI-5021	KPI-8021	KPI-10021
Power Supply			AC 10, 230V, 50 Hz		
Air Flow Rate (m3/min)	Hi	4.1	8.3	13.3	16.6
	Me	4.1	8.3	13.3	16.6
	Lo	2.75	5.8	11.1	14.5
External Pressure (mmAq)	Hi	6.5	15	14	16
	Me	4	6	10	10
	Lo	2	3	7	8
Temperature Exchange Efficiency (%)	Hi	78	77	78	79
	Me	78	77	78	79
	Lo	83	82	80.5	81
Enthalpy Exchange Efficiency	Hi	69/62.5	67/61.5	71/64.5	70/64.5
for Heating/Cooling (%)	Me	69/62.5	67/61.5	71/64.5	70/64.5
	Lo	74/68	73/68	73/68	73/67
Sound Pressure Level	Hi	26.5-27.5	32.5-33.5	33.5-34.5	36-37
(Overall A Scale) at 1.5m from the unit (under)*3	Me	25-26	30-31	32-33	34-35
	Lo	21-22	23.5-24.5	30-31	31.5-32.5
Outer Dimensions					
Height		275	317	398	398
Width		735	1016	1004	1231
Depth		780	888	1164	1164
Net Weight	Kg	21	33	61	72
Approx Packing Measurement	m³	0.26	0.46	0.70	0.84

### NOTES:

- \*1 KPI-10021 has different units according to the applied power supply, 220-240v, 50Hz and 200V/60Hz
  \*2 Use it under the following conditions. KPI-8021: 29Pa or more, KPI-10021: 49Pa or more
  \*3 The sound pressure level is based on the following conditions; 1.5 meter beneath the unit and this data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.
- \*4 The sound pressure is based on the total heat exchange mode. In case of the bypass ventilation mode, the sound pressure level increased by approximately 1dB(A).



# Control systems

# Computer System Network for the remote control and monitoring of air conditioning installation. CS-NET web is a standalone central controller that can control up to 128 indoor units and up to 16 outdoor units connected to the Hitachi H-Link communication system. Using its Ethernet port, CS-NET Web connects to the Local Area Network or Internet (using a DSL router), allowing remote parameter setting and monitoring. CS-NET web client software is accessed directly through Internet Explorer and uses a Java application for remote control and monitoring. A useful feature is that two levels of access are available depending on the user type: • 'User' access, allowing monitoring and setting of the unit • 'Installer' access, allowing also Timer setting and change of system configuration

### **Unit Setting**

Different setting of the unit can be programmed remotely using CS-NET Web.



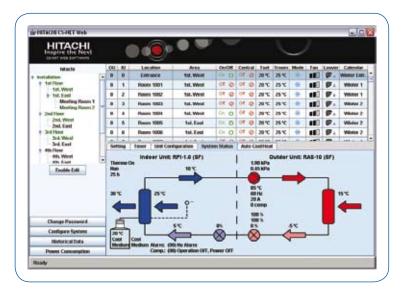


### **Timer**

4 year timer can be stored in the CS-NET Web remotely, allowing it to run standalone without a PC or manual operation.

### **System Status and Historical Data**

Different readings from the unit can be accessed remotely in order to give fast assistance for maintenance and monitoring of the system. These parameters are stored locally for several days to ease maintenance.



### **Specifications of HARC-BX**

Connectable Q'ty	Type Standard			Opti	ion A	Option B		
		64		6	64	32		
		Control	Monitor	Control	Monitor	Control	Monitor	
Run/Stop & Alarm*		•	•	•	•	•	•	
Operation Mode		•	•	•		•	•	
Set Temp		•	•	•		•	•	
Fan Speed		-	-	•	-	•	•	
Louver Position		-	-	-	-	•	•	
RC. Sw.Permission/Prohibition		-	-	•	-	•	-	
Alarm Code		-	-	-	-	-	•	
IU Inlet Air Temp		-	-	-	•	-	•	
IU Outlet Air Temp		-	-	-	-	-	•	
Outdoor Air Temp		-	-	-	-	-	•	
Thermo-ON/OFF		-	•	-	-	_	-	
Remark				Use PC-P2H	TE or PC-2H2			
Maximum Wiring Length				1000m (Bus	Total length)			

# Lon Works® interface

### **Gateway Interface to LON WORKS® BMS Systems**

Using HARC-BX allows control of up to 5 setting points and remote monitoring of up to 9 valves. By connecting HARC-BX to H-LINK, a group of up to 16 remote controls can be used and up to 64 indoor units can be controlled.



HARC-BX



### **PC-P2HTE**

### Remote Control Switch with Seven Day Timer

This remote controller can control up to 16 indoor units, has a large LCD display and an internal thermostat. It has a weekly timer function allowing four different schedules to be set over seven days. There is also a self diagnostic function and

all indoor unit functions including alarm codes can be accessed and displayed by this controller.

- Can control up to 16 indoor units
- Weekly timer function
- Full fault diagnostic facility
- Frost protection facility
- Energy Saving Option



### PC-LH3A

### Wireless Remote Control Switch

A wireless remote control switch that provides simple one-touch operation and can control two or more units simultaneously. No wiring work is required and the receiver kit is integral in wall mounted units. A receiver kit PC-RLH11 is required for all other models.

- Wireless Remote Control
- For use in place of hard wired PC-P2HTE
- Receiver PC RLH4 required with CS Net and central station.



### PC-P5H1

### Simplified Remote Control Switch

Smaller than the conventional remote controller the main function is temperature adjustment. It is ideal for a variety of applications such as hotels, restaurants and offices because it is easy to use. It can control a maximum of 16 indoor units similar to the standard

hard wired controller and displays alarm codes on a simple LED panel.

- Simple and easy to use
- On/off temperature and fan speed control
- Limited range of diagnostic functions

# Remote controllers



### PSC-5S

### **Centralised Remote Control Switch**

The Central Station enables centralised control of up to 16 groups of indoor units (256 units in total). It features a wide range of functions, including a large liquid crystal display screen remote start/stop and alarm code display.

- Simple control for large installations
- Max of 256 units
- Remote control grouping

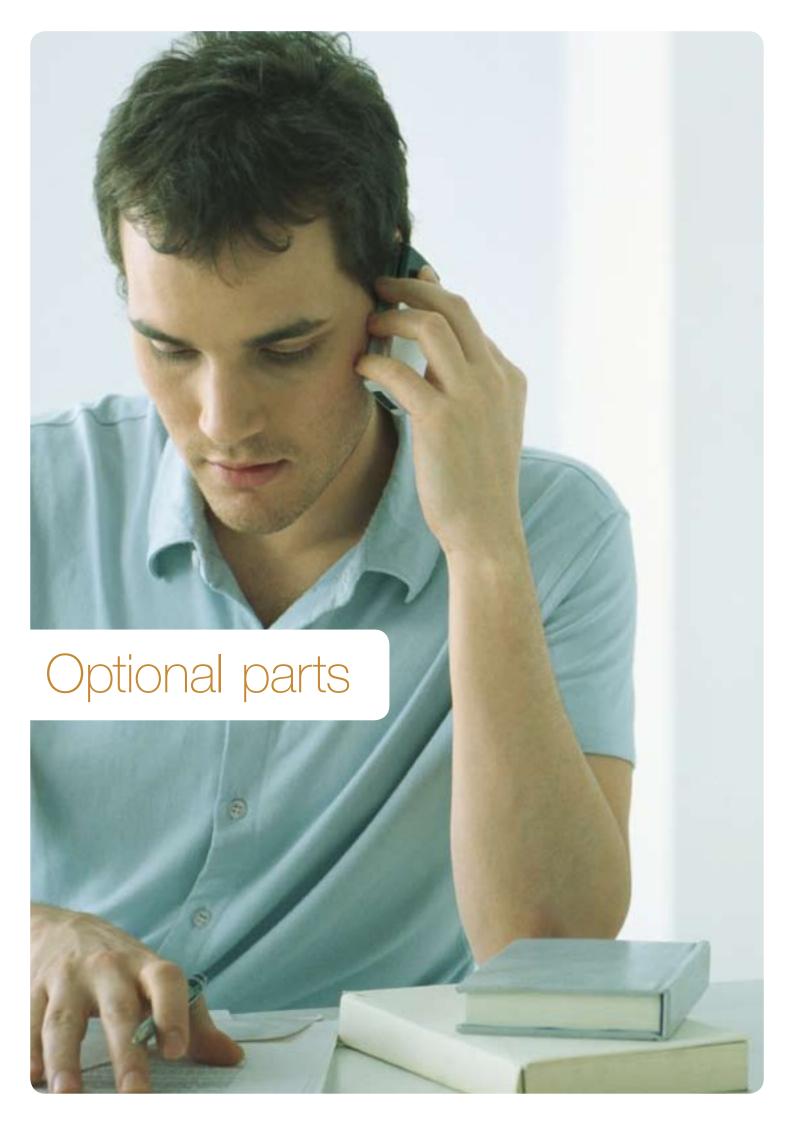


### **PSC-5T**

### 7-Day Timer

The 7-Day Timer allows long-term unattended control. By connecting this timer to the optional remote control switch or central station daily ON/OFF operation control throughout the week is available. The ON/OFF setting is available three times a day in two different patterns.

- Two types of weekly schedule (A and B) can be set, and can easily be changed for summer and winter operation
- Settings are all digitally displayed, allowing operations and settings to be easily checked



### **Indoor Units**

### 4-Way Cassette Type

Item	RCI-1.0-6.0
Receiver Kit for Wireless Control	PC-RLH8 (on the panel)

### 2-Way Cassette Type

Item	RCD 1.0-5.0
Receiver Kit for Wireless Control	PC-RLH9 (on the panel)

### **Wall Mounted and Mini Wall Mounted**

Item	RPK 0.8-4.0
Wireless Receiver Kit	As standard

### In-th-Ceiling, Wall, Floor and Ceiling Type

Item	RPI (0.8-5.0HP), RPK (0.8-4.0HP), RPC (2.0-5.0HP), RPF (1.0-2.5HP), RPFI (1.0-2.5HP)
Receiver Kit for Wireless Control (with 5m cable)	PC-RLH11 (wall mounted)

### In-the-Ceiling, Wall, Floor and Ceiling Type

Item		RPI-FSN	RCI-FSN	RCD-FSN	RPK-FSN	RPC-FSN	RPF(I)-FSN	KPI
Remote Control Switch*1	PC-P2HTE (without cable)	•	•	•	•	•	•	•
Wireless Remote Control Switch*2	PC-LH3A	•	•	•	•	•	•	•
Half-size Remote Control Switch	PC-P5H	•	•	•	•	•	•	•
7-Day Timer	PSC-5T	•	•	•	•	•	•	•
Centralised Remote Control Switch*3	PSC-5S	•	•	•	•	•	•	•
3P Connector Cable	PCC-1A	•	•	•	•	•	•	•
Remote Sensor	THM-R2A	•	•	•	-	•	•	-
Computer Controlled Network System	CS-NET	•	•	•	•	•	•	•

<sup>\*1</sup> As the PC-P2HTE does not include a remote control cable, prepare one in the field, or use PRC-10E1, 15E1, 20E1, 30E1.
\*2 PC-LH3 can be used instead of PC-LH3A.
\*3 Supply 220V or 240V

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