

HITACHI
Inspire the Next

DC inverter UTOPIA

Packaged Air Conditioning Systems



R410A

**With
PAM**

**With
PAM**

DC inverter UTOPIA



This inverter-driven split system heat pump air conditioner, DC Inverter UTOPIA HVRN Series, has been developed to provide, comfortable operation control, great power saving operation through the year and full automatic operation for shops and small buildings.

This DC system can provide the energy saving operation.

DC inverter UTOPIA Advantages

- High Economical Efficiency
- Top-class Silent Operation
- Compact & Light
- Environmentally Considerate



Environmentally-considerate HFC refrigerant (R410A)
with zero ozone depletion potential

R410A

The DC inverter and DC fan motor deliver the highest efficiency and lowest noise in this class. Renewal is also facilitated.

Outdoor Units



RAS-3HVRN



**RAS-4HVRN RAS-5HVRN
RAS-6HVRN**



RAS-7HVRN

Indoor Units



4-way Cassette Type RCI-FSN

2.5HP 3.0HP 4.0HP 5.0HP



Ceiling Type RPC-FSN

2.5HP 3.0HP 4.0HP 5.0HP



In-the-ceiling Type RPI-FSN1S

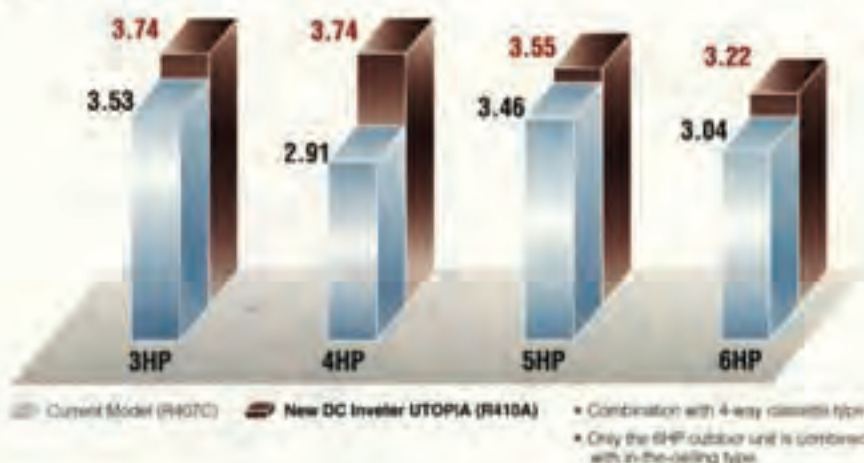
3.0HP 4.0HP 5.0HP 6.0HP 7.0HP

• The product photograph is a conceptual image, and may differ from the actual product.

Industry-leading, Environmentally-conscious, Energy-saving Design

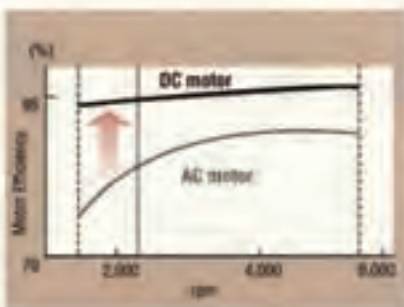
Greatly reduced energy consumption due to unparalleled COP value.

■ COP comparison for average of cooling/heating



DC compressor

A DC compressor is used for all models, thus greatly increasing efficiency in all areas. In particular, performance at a low speed, which affects the annual running cost, has been hugely improved.



Moreover, the electromagnetic noise to DC compressors has been cut by optimizing the rotor shape of the compressor.

Compressor Rotor

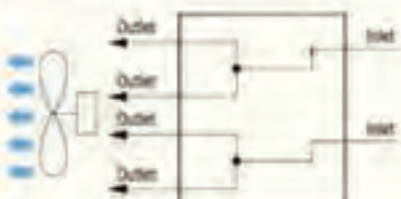


Energy-saving room temperature control

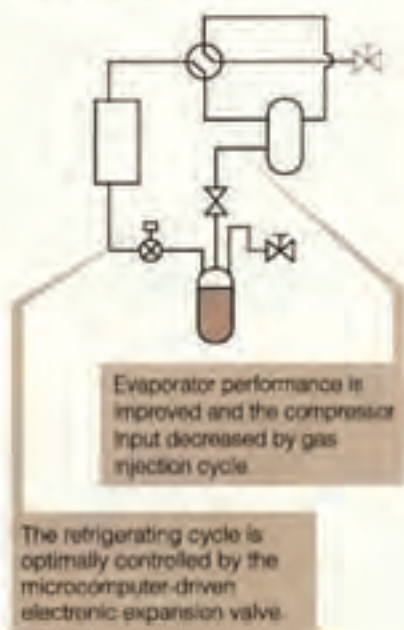
The set room temperature is controlled in accordance with changes in outdoor air temperature during the day, to prevent excessive cooling/heating and wasteful operation.

Heat exchanger path alignment optimized

Pressure loss in heat exchanger pipe decreased.



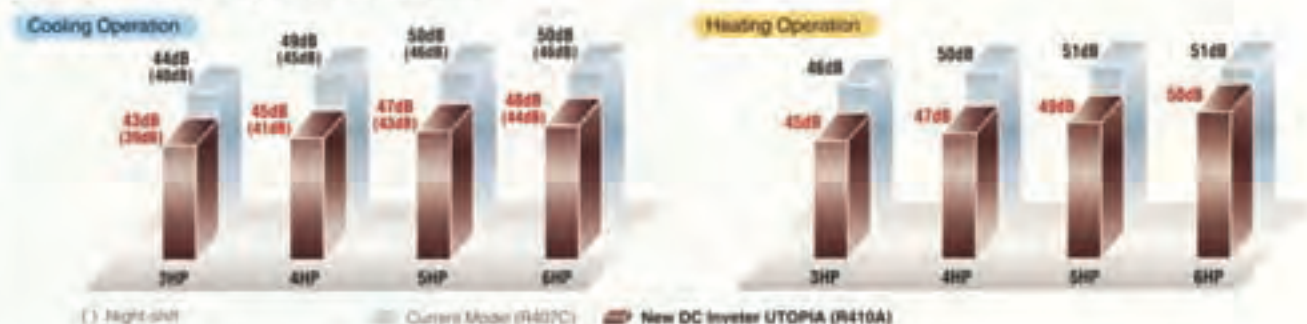
Gas injection cycle



Low sound for a quieter neighborhood, even at night

Hitachi has developed advanced technologies and pioneering acoustics to reduce noise. Operating noise is so low it will not cause a disturbance even at night.

Comparison of operating noise with current model



New fin with less pressure loss



Air flow resistance decreased by 20%. The optimized slit shape minimizes noise by reducing air intake resistance.

Reduced electromagnetic noise of compressor

Rotor shape optimized



Electromagnetic noise reduced



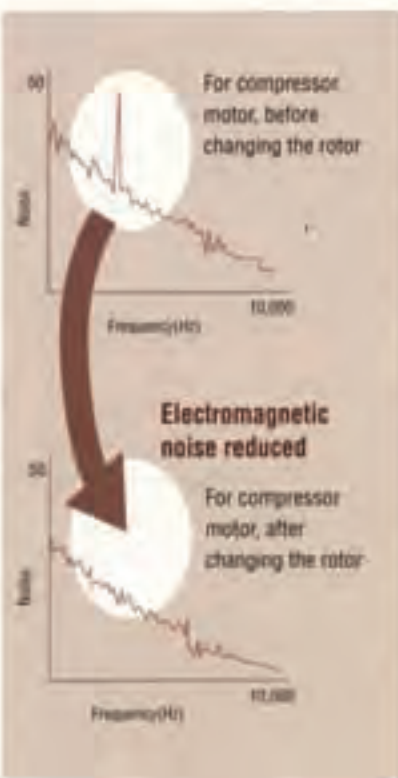
Flat noise

DC fan motor control reduce irritating electromagnetic noise and acoustics.



Super high-stream fan

Delta-shaped edges reduce fan size and noise.



Adoption of new bell-mouth

The new bell-mouth (resin mold) minimizes flow friction, resulting in smooth flow and low sound.



4-way Cassette Type

RCI-FSN

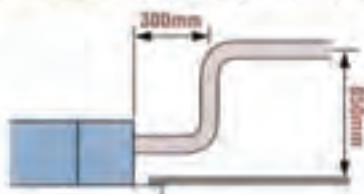
Achieved top-class silent operation
Adaptable to various layouts with flexibility of installation



High ceiling adaptability satisfies a wide variety of requirements

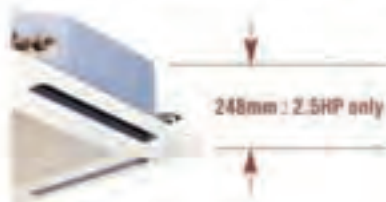
This model is adaptable to a high ceiling with a height of 4.2m by using speed-up taps. These features permit comfortable air conditioning in suburban stores and showrooms.

Equipped with a drain-up mechanism with high pump lift



Compact, thin, and can be installed in a small space inside a false ceiling

The height of the unit is just 248mm, 50 mm smaller than conventional models, and so it can be installed in a small space inside a false ceiling.



		2.5HP			2.8/3.0/3.5HP		
		4-way	3-way	2-way	4-way	3-way	2-way
High Ceiling	Standard	2.7m	3.0m	3.2m	3.2m	3.6m	4.0m
	Speed-up (T)	3.0m	3.2m	3.5m	3.6m	4.0m	4.2m
	Speed-up (D)	3.5m	3.6m	-	4.2m	4.3m	-

* For setting three and two directions, the supplementary joint "3-way outlet duct" is necessary

Body height easily adjustable in the corner pockets

A pocket is provided for each of the four panel corners, so that the height of unit can be adjusted easily without removing the panel.



The body can be aligned with the ceiling surface by moving the body upward or downward with the corner pockets.

Stain-resistant wide louver

The wide louver enables smooth blowing and prevents smudging and stains on the ceiling surface. The louver, having no flocking, is stain-resistant and dirt can be easily wiped off.



Ventilating resistance reduced by 24% by compact unit for 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% (over conventional machines, patent pending).

Air Flow Rate

	High	Medium	Low
RCI-2.5FSN	32dB	30dB	28dB
RCI-3.0FSN	34dB	32dB	30dB
RCI-4.0FSN	38dB	35dB	33dB
RCI-5.0FSN	39dB	37dB	35dB

General Data

			Single Split System			Twin Split System	
			RCI-3.0FSN	RCI-4.0FSN	RCI-5.0FSN	RCI-2.5FSN x 2	
			RAS-3HVRN	RAS-4HVRN	RAS-5HVRN	RAS-6HVRN	
Power Supply			AC1 ϕ , 220-240V, 50/60Hz				
Nominal Capacity	Cooling	kW	7.1	10.9	12.5	12.5	
	Heating	kW	8.0	11.2	14.0	14.0	
Total Input	Cooling	kW	1.94	2.82	3.83	3.81	
	Heating	kW	2.10	2.95	3.65	3.67	
Indoor Unit	Air Flow Rate (Hi/Mid/Low)	m ³ /min	25/23/20	32/29/24	34/29/25	20/17/15	
	Sound Level (Hi/Mid/Low)	dB(A)	34/32/30	36/35/33	39/37/35	32/30/28	
	Dimensions (H x W x D)	mm	298 x 840 x 840	298 x 840 x 840	298 x 840 x 840	245 x 840 x 840	
	Air Panel	mm	37 x 950 x 950	37 x 950 x 950	37 x 950 x 950	37 x 950 x 950	
	Net Weight	kg	26	29	29	24	
	Air Panel	kg	6	6	6	6	
	Operation Range	Cooling	°CWB	15-23			
	Heating	°CDB	15-27				
Outdoor Unit	Sound Pressure Level	Cooling (Night-shift)	dB(A)	43(39)	45(41)	47(43)	47(43)
		Heating	dB(A)	45	47	49	49
	Dimensions (H x W x D)	mm	800 x 850 x 315	1,240 x 950 x 315	1,240 x 950 x 315	1,240 x 950 x 315	
	Net Weight	kg	60	95	97	97	
	Operation Range	Cooling	°CDB	-5-43			
	Heating	°CWB	-15-15				
Refrigerant Piping	Diameter (Liquid/Gas)	mm	ϕ 9.53 / ϕ 15.88	ϕ 9.53 / ϕ 15.88	ϕ 9.53 / ϕ 15.88	ϕ 9.53 / ϕ 15.88 or ϕ 19.05	
	Max. Piping Length	m	60	77	77	77	
	Max. Height Difference	m	30(20: if the outdoor installed lower than indoor units.)				

NOTES: 1. The nominal cooling capacity is the combined capacity of the HITACHI standard split system, and is based on the JIS standard B9816.

Cooling Operation Conditions

Indoor Air Inlet Temperature : 27°C DB (80°F DB) 19.0°C WB (66.2°F WB)
Outdoor Air Inlet Temperature : 35°C DB (95°F DB)

Heating Operation Conditions

Indoor Air Inlet Temperature : 20°C DB (68°F DB)
Outdoor Air Inlet Temperature : 7°C DB (45°F DB) 6°C WB (43°F WB)
Piping Length : 7.5 Meters Piping LB : 0 Meter

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

Indoor Units : 1.5 Meters beneath the unit.

Outdoor Units : 1 Meter from the unit service cover surface, and 1.5 meters from floor level.

Voltage of the power source for the indoor fan motor is 220V.

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

Optional Parts

Indoor Units		RCI-2.5FSN	RCI-3.0FSN	RCI-4.0FSN	RCI-5.0FSN
Air Panel (Standard)			P-G23WA2		
Receiver Kit for Wireless Control			PC-ALH		
3-Way Outlet Parts Set			PI-23LS5		
Kit for Deodorant Filter	Deodorant Filter	F-23LA-D		F-36LA-D	
	Filter Box		B-23IM		
Antibacterial Long-life Filter			F-23LA-K		
Fresh Air Intake Kit*1			OACI-23C		
T-Pipe Connection Kit*2			TKCI-23C		
Duct Adapter*3			PD-75 (ϕ 75)		

NOTES: *1. It is necessary to use the Fresh Air Intake Kit for connecting the fresh air intake duct to the unit.

*2. It is used when two air intakes (ϕ 100 x 2) of the Fresh Air Intake Kit is changed to one air intake (ϕ 150 x 1).

*3. It is used when a fresh air intake duct is connected to the indoor unit directly.

*4. It is used when both of the Fresh Air Intake Kit and Filter Box are used.

Outdoor Units	RAS-3HVRN	RAS-4HVRN	RAS-5HVRN	RAS-6HVRN
Branch-Pipe	—		TW-NP14	—
Drain Kit			DBS-26	

Control System	Models
Remote Control Switch	PC-AR*1
Wireless Remote Control Switch	PC-LHQA
Half-size Remote Control Switch	PC-ARH
7-Day Timer	PSC-A1T
Central Station	PSC-5S or PSC-A64S
Remote Control Cable	PRC-5K, PRC-10K, PRC-15K for PC-AR
3P Connector Cable	PCC-1A
PVC Network System	CS-NET

NOTE: *1. As the PC-AR does not include a remote control cable, prepare it in the field, or use PRC-5K, 10K, or 15K.

In-the-ceiling Type

RPI-FSN1S

Quiet operation and low height design for limited space inside of the ceiling

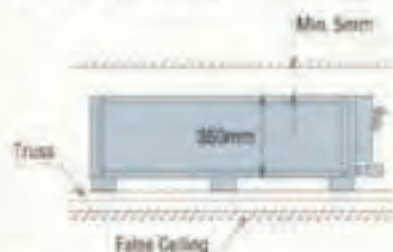


* The perfect design is a combination model and may offer benefits during product.



Space-saving design

With a unit height of 350mm (3.0-6.0HP), this unit can be installed in a false ceiling space in almost any building.



Easy installation and maintenance

- Separable design unit for easier installation (3.0-6.0HP).
- Design of indoor unit allows installation in limited roof space.



Adjustable fan speed

The indoor fan motor has three speeds that can be adjusted to allow for pressure loss in the duct, thus providing a more efficient air flow.

Low noise and low vibration

The large fan and improved resistance of the air-flow path, thus reducing noise and vibration.

- Improved resistance of air-flow path



Quiet operation

The well-balanced centrifugal fan provides a quiet and efficient operation.

Operation Sound

• 1/3 Tap

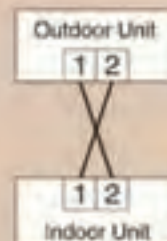
		HP				
		3.0	4.0	5.0	6.0	7.0
Sound Level	70% Setting	45	47	49	52	—
	100% Setting	46	48	51	53	51(1)

(1) at 155Pa

Transmission wiring work for the outdoor unit is simplified by employing a non-polar two-wire system.

- The non-polar two-wire system of transmission wiring prevents transmission troubles caused by reversed connection of positive and negative terminals during wiring.
- The size of the transmission terminal block is reduced to prevent faulty connection of the power source. (This wiring is available for all models.)

Making the Transmission Wiring (Non-polar)



General Data

			Single Split System					
			Indoor Unit	RPI-3.0FSN1S	RPI-4.0FSN1S	RPI-5.0FSN1S	RPI-6.0FSN1S	RPI-7.0FSN1S
			Outdoor Unit	RAS-3HVRN	RAS-4HVRN	RAS-5HVRN	RAS-6HVRN	RAS-7HVRN
Power Supply			AC1 φ, 240V, 50Hz					
Nominal Capacity	Cooling	kW	7.1	10.0	12.5	14.7	18.3	
	Heating	kW	8.0	11.2	14.0	16.0	19.6	
Total Input	Cooling	kW	2.04	3.23	4.02	5.64	5.95	
	Heating	kW	2.06	3.20	3.73	4.18	5.45	
Indoor Unit	Air Flow Rate	120pa Setting	m ³ /min	31/27/20	37/33/25	46/43/34	57/50/40	70/57/46 (*)
		70pa Setting	m ³ /min	31/26/21	37/33/27	46/39/36	57/48/42	—
	Sound Level	120pa Setting	dB(A)	46/44/40	48/45/41	49/46/43	53/49/45	51/47/42 (*)
		70pa Setting	dB(A)	45/43/39	47/44/40	48/45/42	52/48/44	—
	Dimensions (H x W x D)	mm	350 x 1,076 x 800	350 x 1,076 x 800	350 x 1,300 x 800	350 x 1,300 x 800	440 x 1,430 x 850	
	Net Weight	kg	52	57	61	63	75	
	Operation Range	Cooling	°CWB	15-23				
	Heating	°CDB	15-27					
Outdoor Unit	Sound Pressure Level	Cooling	dB(A)	43	45	47	48	53
		(Night-shift)	dB(A)	(39)	(41)	(43)	(44)	(50)
		Heating	dB(A)	45	47	49	50	54
	Dimensions (H x W x D)	mm	800 x 850 x 315	1,240 x 950 x 315	1,240 x 950 x 315	1,240 x 950 x 315	1,650 x 1,100 x 300	
	Net Weight	kg	60	95	97	97	167	
Operation Range	Cooling	°CDB	-5-43					
Connections	Heating	°CWB	-15-15					
Refrigerant Piping	Diameter (Liquid / Gas)	mm	φ9.53 / φ15.88	φ9.53 / φ15.88	φ9.53 / φ15.88	φ9.53 / φ15.88 or φ19.05	φ9.53 / φ19.05	
	Max. Piping Length	m	60	77	77	77	50	
	Max. Height Difference	m	30(20: if the outdoor installed lower than indoor units.)					

(*) : at 130Pa

NOTES: 1. The nominal cooling capacity is the combined capacity of the HITACHI standard split system, and is based on the JIS standard B9616.

Cooling Operation Conditions

Indoor Air Inlet Temperature: 27°C DB (80°F DB) 19.0°C WB (66.2°F WB)

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

Heating Operation Conditions

Indoor Air Inlet Temperature: 20°C DB (68°F DB)

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

Piping Length: 7.5 Meters Piping LB: 0 Meter

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

Indoor Units: 1.5 Meters beneath the unit with discharge duct (2.0m) and return duct (1.0m)

Outdoor Units: 1 Meter from the unit service cover surface, and 1.5 meters from floor level.

Voltage of the power source for the indoor fan motor is 220V.

In case of the power source of 240V, the sound pressure level increases by about 1 or 2dB.

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

Optional Parts

In-the-ceiling Type	RPI-3.0FSN1S RPI-4.0FSN1S	RPI-5.0FSN1S RPI-6.0FSN1S	RPI-7.0FSN1S
Drain-up Mechanism Kit	DUP-162S		—
Receiver Kit for Wireless Control	PC-ALH2		

Outdoor Units	RAS-3HVRN RAS-4HVRN	RAS-5HVRN RAS-6HVRN	RAS-7HVRN
Drain Kit	DBS-26		

Control System	Models
Remote Control Switch	PC-AR*1
Wireless Remote Control Switch	PC-LH3A
Half-size Remote Control Switch	PC-ARH
7-Day Timer	PSC-A1T
Central Station	PSC-5S or PSC-A64S
Remote Control Cable	PRC-5K, PRC-10K, PRC-15K for PC-AR
3P Connector Cable	PCC-1A
P/C Network System	CS-NET

NOTE: *1: As the PC-AR does not include a remote control cable, prepare it in the field, or use PRC-5K, 10K, or 15K.



Ceiling Type

RPC-FSN

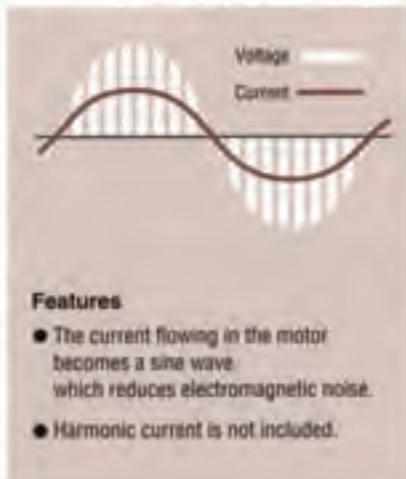
Silent operation, easy installation and space-saving slim design



PWM(Pulse Width Modulation) reduces noise and improves comfort

The noise from the fan motor is suppressed by introducing PWM: the current applied to the motor is shaped to a quasi sine wave by switching control of a power MOSFET* at a frequency of several ten-thousand Hz.

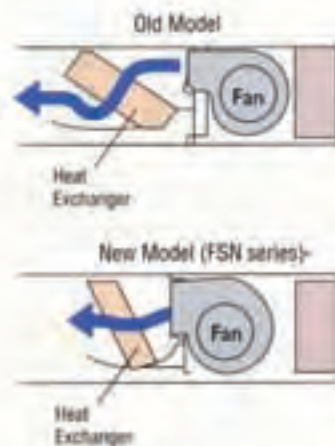
* Power MOSFET is switching device



Noise and vibration drastically reduced by our original design

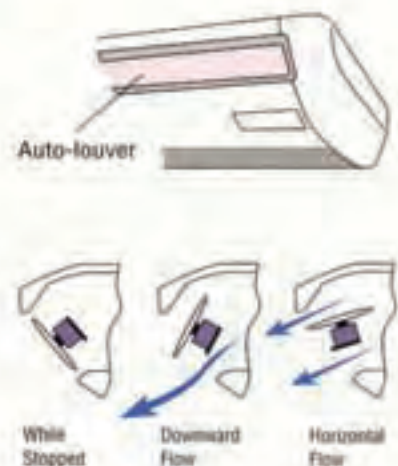
The large fan and improved resistance of the air-flow path lower the r.p.m. of the blower, thus reducing noise and vibration.

• Improved resistance of air-flow path



Amenity improved by auto-louver at air opening

The round, lower part of the air opening complements the gentle, quiet operation. The auto-louver in the upper part of the opening automatically controls upward and downward motion of air flow, while the grille serves as a shutter when stopped.



Each part of the system is fully functional

The wireless light receiver kit (option) can be installed easily through the hole in the lower cover.

General Data

			Single Split System			Two Split System	
			RPC-3.0FSN	RPC-4.0FSN	RPC-5.0FSN	RPC-2.5FSN x 2	
Indoor Unit			RAS-3HVRN	RAS-4HVRN	RAS-5HVRN	RAS-5HVRN	
Power Supply			AC1φ, 220-240V, 50/60Hz				
Nominal Capacity	Cooling	kW	6.4	10.0	11.7	12.5	
	Heating	kW	8.0	11.2	14.0	14.0	
Total Input	Cooling	kW	2.13	3.12	3.91	4.13	
	Heating	kW	2.39	3.54	4.14	4.07	
Indoor Unit	Air Flow Rate (Hi/Mo/Lq)	m ³ /min	22/18/15	25/21/18	33/28/23	18/15/12	
	Sound Level (Hi/Mo/Lq)	dB(A)	43/40/37	44/41/38	44/41/38	40/37/34	
	Dimensions (H x W x D)	mm	210 x 1,320 x 670	270 x 1,320 x 670	270 x 1,580 x 670	210 x 1,320 x 670	
	Net Weight	kg	30	34	42	30	
	Operation Range	Cooling	°CWB	15-23			
	Heating	°CDB	15-27				
Outdoor Unit	Sound Pressure Level	Cooling (Night-shift)	dB(A)	43(39)	45(41)	47(43)	47(43)
		Heating	dB(A)	45	47	49	49
	Dimensions (H x W x D)	mm	800 x 850 x 315	1,240 x 950 x 315	1,240 x 950 x 315	1,240 x 950 x 315	
	Net Weight	kg	60	95	97	97	
	Operation Range	Cooling	°CDB	-5-43			
	Heating	°CWB	-15-15				
Refrigerant Piping	Diameter (Liquid /Gas)	mm	φ9.53 / φ15.88	φ9.53 / φ15.88	φ9.53 / φ15.88	φ9.53 / φ15.88 or φ19.05	
	Max. Piping Length	m	60	77	77	77	
	Max. Height Difference	m	30/20 (if the outdoor installed lower than indoor units.)				

NOTES: 1. The nominal cooling capacity is the combined capacity of the HITACHI standard split system, and is based on the JIS standard 88816.

Cooling Operation Conditions

Indoor Air Inlet Temperature: 27°C DB (80°F DB) 19.0°C WB (66.2°F WB)

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

Heating Operation Conditions

Indoor Air Inlet Temperature: 20°C DB (68°F DB)

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

Piping Length: 7.5 Meters Piping LR: 0 Meter

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

Indoor Units: 1 Meter beneath the unit and 1 meter from discharge grill.

Outdoor Units: 1 Meter from the unit service cover surface, and 1.5 meters from floor level.

Voltage of the power source for the indoor fan motor is 220V.

In case of the power source of 240V, the sound pressure level increases by about 1 or 2dB.

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

Optional Parts

Indoor Units	RPC-2.5FSN RPC-3.0FSN	RPC-4.0FSN RPC-5.0FSN
Receiver Kit for Wireless Control	PC-ALHP	

Outdoor Units	RAS-3HVRN RAS-4HVRN	RAS-5HVRN	RAS-6HVRN
Branch Pipe	TW-NP14		
Drain Kit	DBS-26		

Control System	Models
Remote Control Switch	PC-AR*1
Wireless Remote Control Switch	PC-LH3A
Half-size Remote Control Switch	PC-ARH
7-Day Timer	PSC-A1T
Central Station	PSC-5S or PSC-A64S
Remote Control Cable	PRC-5K, PRC-10K, PRC-15K for PC-AR
3P Connector Cable	PCC-1A
PVC Network System	CS-NET

NOTE: *1: As the PC-AR does not include a remote control cable, prepare it in the field, or use PRC-5K, 10K, or 15K.




ISO 9001



ISO 14001



HITACHI

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