

HITACHI

LIGHT COMMERCIAL SYSTEM

INVERTER A++ (24~55) HEAT PUMP



Johnson Controls - Hitachi Air Conditioning

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INVERTER A++ (24~55) HEAT PUMP

Special design for Restaurant, Hotel, Apartment, Shopping Mall, etc.
Flexible Indoor type are suitable for all kinds of room size.
Rapid cool and heating, will give you a comfortable and quiet environment.

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Multi-Speed Fan(Indoor unit)

Multi-Speed fan helps satisfy various airflow requirement.



Auto Restart

Units are automatically returned to previous operation conditions after a power outage, for simplified operation.

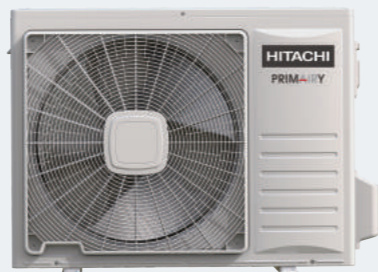
Expansion Interface

Enable connection to smoke detector, key slot, etc.



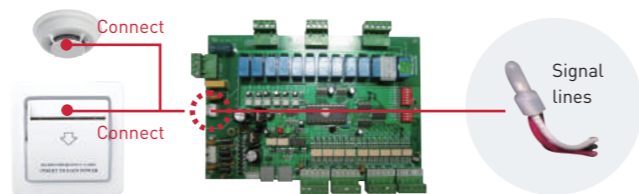
Quiet Operation

Units have quiet mode which can reduce the fan speed and frequency of the compressor to get low operation noise.



**Reserved port for fire alarm device
Reserved port for key slot**

For example: Hotel Room Card Control insert room card for power.



Smart Defrost

The smart defrost software and added defrost sensor will precisely control the defrost time and effect, which can effectively avoid the defrost delay.

High Efficiency DC Fan Motor

Most of the fan motors of indoor and outdoor units are DC fan motors, which can adjust speed and ESP automatically. And it allows running of the units more reliable and efficient with low noise.



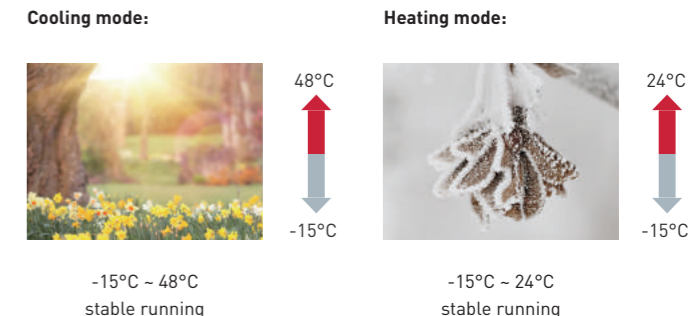
Cassette	Unit	24K	36K	42K	48K	55K
Fan motor	IDU	DC	DC	DC	DC	DC

Ducted	Unit	24K	36K	42K	48K	55K
Fan motor	IDU	DC	DC	DC	DC	DC

Floor Ceiling	Unit	24K	36K	42K	48K	55K
Fan motor	IDU	DC	DC	DC	DC	DC

Wide Ambient Temperature Range

High cooling and heating performance at wide ambient temperature range.



Refrigerant Leakage Detect

Indoor unit will stop operation automatically and show error code when the refrigerant charging amount is lower than 30%, which can avoid the compressor being damaged by high temperature due to refrigerant leakage. When the refrigerant charging amount is between 30%~80%, the unit will judge itself if error code is necessary. This feature can also better ensure the heat transfer efficiency and the safety of the unit.

Temperature Protection System

- Fan motor overheating protection
- Compressor start preheating in cold climate
(Only for Heat Pump)
- Compressor overheating protection

Low/High pressure switch

High pressure and Low pressure switch keep the system and compressor reliable.

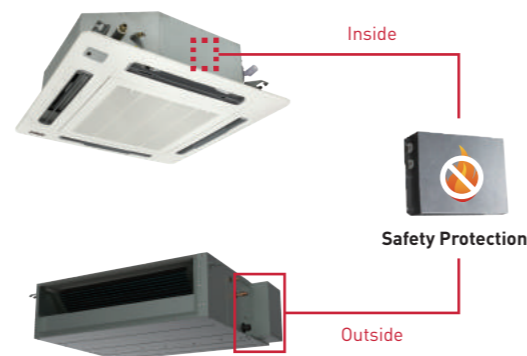
Comments:
For Inverter unit, there's no LP&HP switch for 9K/12K/18K24K and no LP switch for 36K.

Reliable Running

Oil viscosity testing was taken for compressor in order to ensure the reliability of the running.

Safety Protection

Totally metal box design for electrical assembly to ensure product safety.



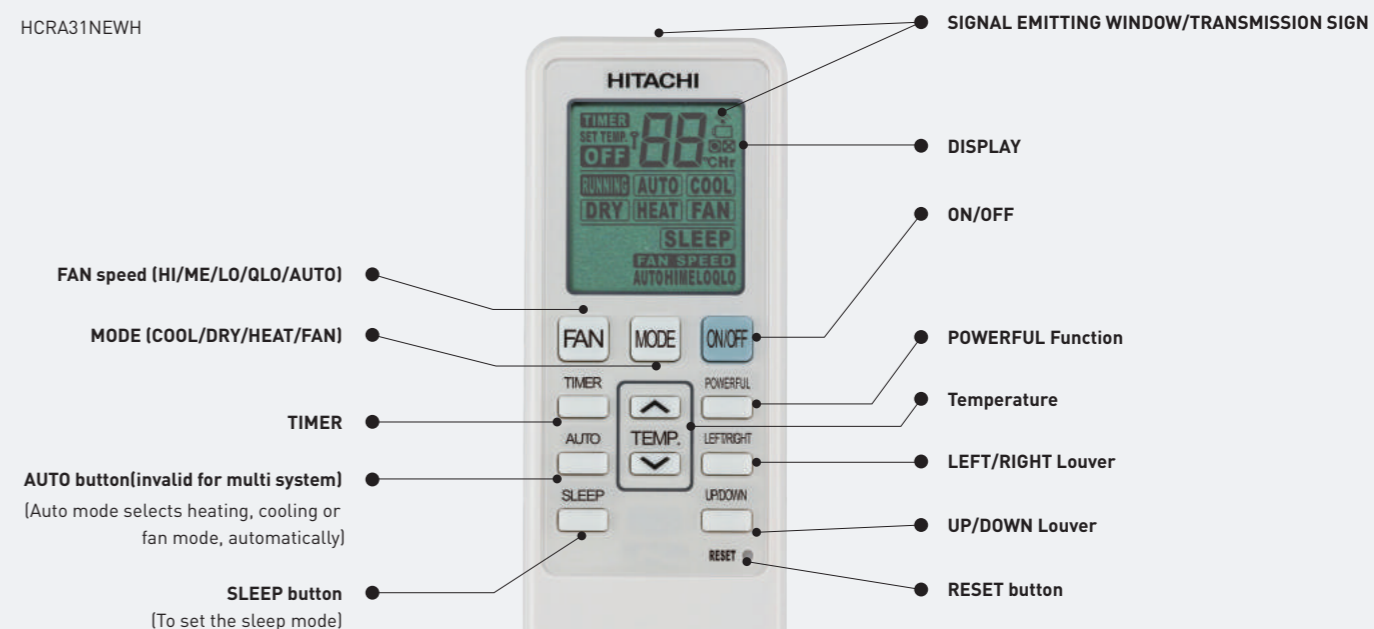
Discharge temperature sensor

Ensure the compressor will operate in the safety range, and prevent the damage caused by refrigerant leakage.



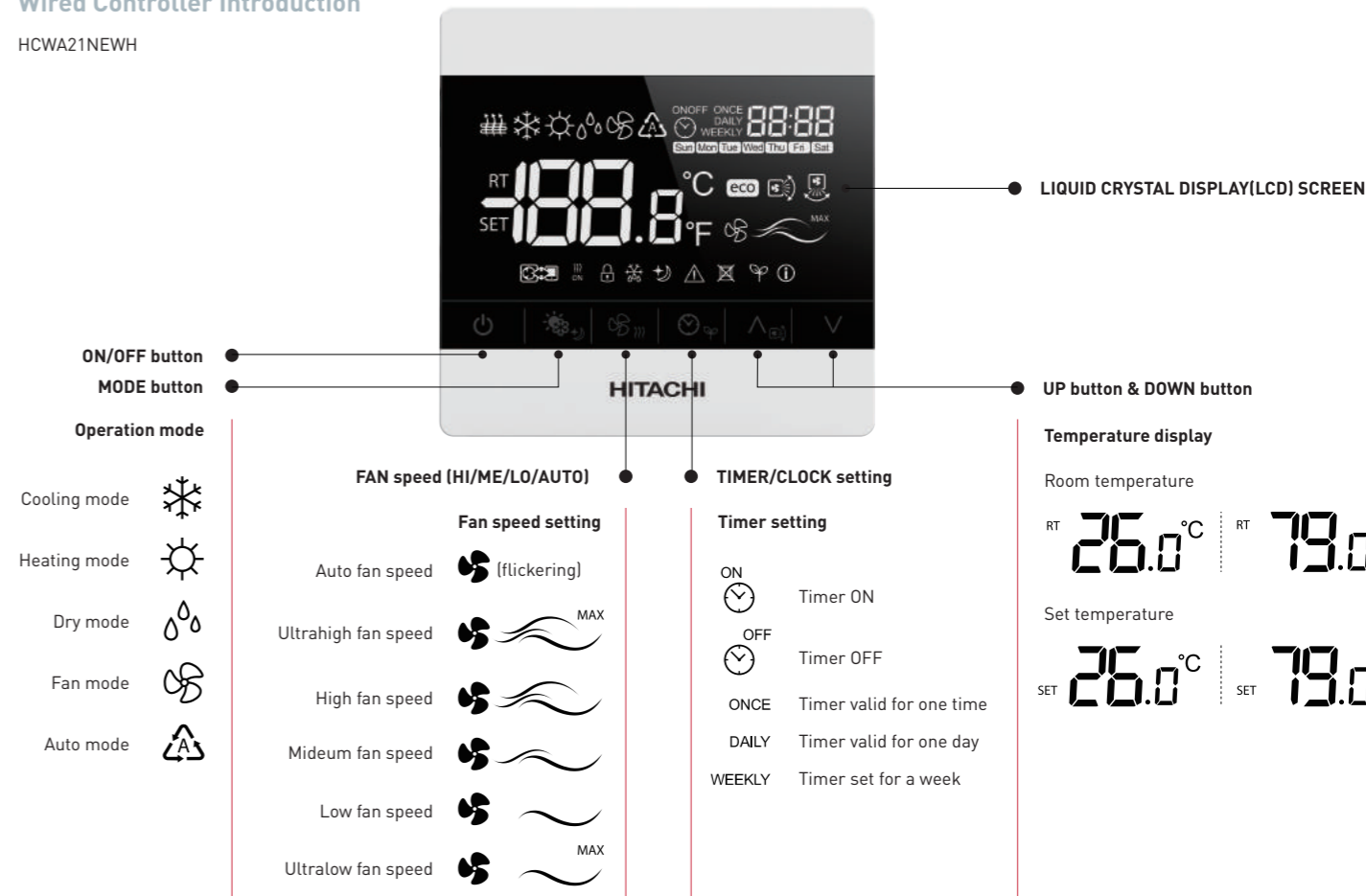
Remote Controller Introduction

HCRA31NEWH



Wired Controller Introduction

HCWA21NEWH



CASSETTE TYPE

Introduction



HCRA31NEWH
(Standard)



HCWA21NEWH
(Optional)



4-Way Airflow

Front air deflectors are adjustable for horizontal or vertical airflow. Smooth airflow can be directed to air condition the whole room or even a particular point for better comfort.



IR receiver for Remote Controller

Reserved port for Remote sensing which makes control more convenient.



Washable Filter

Washable filter allows for convenience service and maintenance.



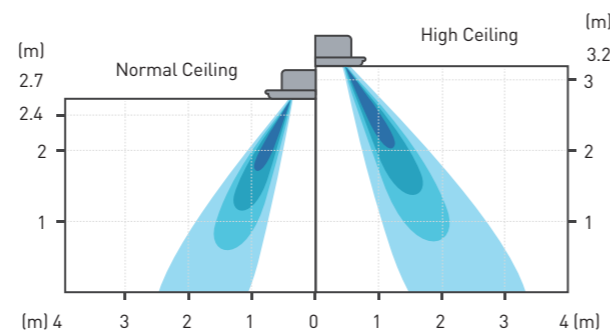
Fresh Air Inlet

Fresh air outside can be led into the room, which keeps room air fresh and ventilated. It's about 15m³/h.



Temperature compensation

Cassette bring temperature compensation setting by wired controller. This function can revise this temperature difference to make a more accurate temperature control.



Specification (Cassette)

IDU		RCI-3.0UNE1NH	RCI-4.0UNE1NH	RCI-5.0UNE1NH	RCI-6.0UNE1NH	RCI-6.5UNE1NH	
ODU		RAS-3.0UNESH1	RAS-4.0UNESH1	RAS-5.0UNESH1	RAS-6.0UNESH1	RAS-6.5UNESH1	
Power supply	V/Ph/Hz	220-240/1/50			380-415/3/50		
Max. input consumption	W	4,100	5,150	6,400	6,300	7,800	
Max. input current	A	18.1	22.5	11.6	11.0	13.1	
Average	Pdesignc	kW	7.070	10.300	12.068	13.400	14.500
	SEER	W/W	6.46	6.13	5.72	6.01	5.87
	Energy Efficiency Class		A++	A++	A+	A+	A+
	Pdesignh	kW	5.680	9.600	10.000	13.500	11.000
	SCOP	W/W	4.07	3.90	3.80	3.88	3.77
Cooling	Energy Efficiency Class		A+	A	A	A	A
	Capacity	Btu/h	24,123	35,144	41,176	45,721	49,474
	Capacity	kW	7.1	10.3	12.1	13.4	14.5
	Input	W	2,209	3,433	4,190	4,621	5,492
	Current	A	9.7	16.5	7.2	7.4	9.7
Heating	EER	W/W	3.20	3.00	2.88	2.90	2.64
	Capacity	Btu/h	28,000	39,238	47,768	56,100	60,000
	Capacity	kW	8.2	11.5	14.0	16.4	17.6
	Input	W	2,372	3,605	3,900	4,850	5,709
	Current	A	10.5	16.0	7.3	7.4	9.1
Indoor fan motor	COP	W/W	3.46	3.19	3.59	3.39	3.08
	Qty		1	1	1	1	1
	Input	W	35	80	124	124	124
	Capacitor	µF	/	/	/	/	/
	Speed(Hi/Med/Lo)	r/min	450/390/270	600/480/390	630/600/570	700/540/460	700/540/460
Indoor air flow Rated(Hi/Med/Lo)	m ³ /h	1100/976/852	1600/1300/1000	1850/1700/1550	2000/1900/1700	2000/1900/1700	
Indoor air flow Rated(Hi/Med/Lo)	CFM	647/574/501	941/765/588	1088/1000/912	1180/1120/1000	1180/1120/1000	
Indoor noise level (Hi/Med/Lo)	dB(A)	41/38/36	45/40/37	46/43/41	50/48/46	47/45/43	
Indoor noise level (Sound Power)	dB(A)	57	61	62	64	62	
Indoor unit	Dimension(WxHxD)	mm	840×248×840	840×248×840	840×298×840	840×298×840	840×298×840
	Packing(WxHxD)	mm	996×370×956	996×370×956	996×420×956	996×420×956	996×420×956
	Net/Gross weight	kg	28/37	30/39	32/41	32/41	32/41
Drainage water pipe diameter (ID)	mm	IDØ32	IDØ32	IDØ32	IDØ32	IDØ32	
Controller		Remote controller					
Operation temperature	°C	16 - 30					
Qty'per 20' /40' /40'HQ (Indoor unit)	Set	72/144/168	60/120/144	60/120/144	60/120/144	60/120/144	
Compressor	Type		ROTARY	ROTARY	ROTARY	ROTARY	
	Rated current(RLA)	A	8.9	5.1	5.1	13.2	12.0
	Refrigerant oil	ml	POE VG74/670	PQE VG74/1000	PQE VG74/1000	α 68HES-H or equivalent /1650	FV50S or PVE/1400
Outdoor fan motor	Qty		1	1	2	2	
	Input	W	61	121	138	121	121
	Speed	r/min	880	830	850	810	810
Outdoor noise level(Sound Pressure)	dB(A)	53	55	58	53	58	
Outdoor noise level(Sound Power)	dB(A)	68	70	74	69	73	
Throttle type		EEV	EEV	EEV	EEV	EEV	
Outdoor unit	Dimension(WxHxD)	mm	860×670×310	950×840×340	950×1050×340	950×1386×340	950×1386×340
	Packing(WxHxD)	mm	990×730×450	1110×910×460	1110×1200×460	1110×1527×460	1110×1527×460
	Net/Gross weight	kg	51/57	70/80	85/95	103/109	103/109
Refrigerant	Type		R410A	R410A	R410A	R410A	R410A
	Charged volume	kg	1.70	2.80	3.20	3.78	3.95
Refrigerant piping	Liquid side/ Gas side	mm(inch)	φ9.52/φ15.88(3/8/5/8)	φ9.52/φ19.05(3/8/3/4)	φ9.52/φ19.05(3/8/3/4)	φ9.52/φ19.05(3/8/3/4)	φ9.52/φ19.05(3/8/3/4)
	Max. pipe length	m	30	50	50	50	50
	Max. difference in level	m	15	30	30	30	30
Annual energy consumption(cooling)	kWh/a	405	599	676	857	933	
Annual energy consumption(heating)	kWh/a	2,095	3,229	3,679	4,407	4,276	
Ambient temperature	Cooling	°C	-15-48	-15-48	-15-48	-15-48	-15-48
	Heating	°C	-15-24	-15-24	-15-24	-15-24	-15-24
Qty'per 20' /40' /40'HQ (Outdoor unit)	Set	90/186/186	52/106/106	26/53/106	26/53/53	26/53/53	

Nominal testing conditions:
Cooling - Indoor 80.6°F DB / 66.2°F WB (27°C DB / 19°C WB) & Outdoor 95°F DB / 75.2°F WB (35°C DB / 24°C WB)
Heating - Indoor 68°F DB / 59°F WB (20°C DB / 15°C WB) & Outdoor 44.6°F DB / 42.8°F WB (7°C DB / 6°C WB)

DUCTED TYPE

Introduction



HCWA21NEWH
(Standard)

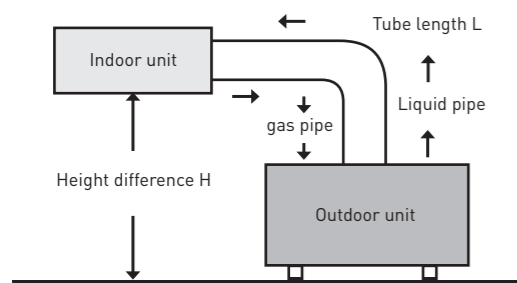


HCRA31NEWH
(Optional)



Long piping and Large Height Difference

Up to 50m piping run and 30m height applications can be covered, high flexibility in installation configuration.



Built-in drain pan

Compared with outside drain pan design, the new built-in drain pan can reduce the dust adhesion, and avoid water leakage.



Built-in drain pan

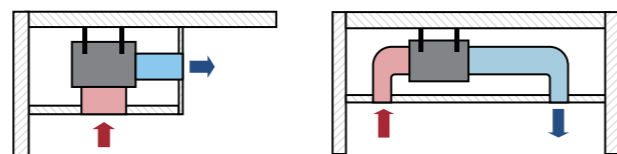
VS



Outside drain pan

Flexible air return from bottom or rear

Depending on different installation circumstances, the installation will be highly flexible.



Bottom air intake

Rear air intake

These two kinds of design (straight blow & external ducted), without changing equipment, just adjust the ESP setting.

Wide ESP range

Optional wide static pressure range for long ducting and multi-zone applications, more flexible and convenient in installation.

Specification (Ducted)

IDU		RPIM-3.0UNE1NH	RPIM-4.0UNE1NH	RPIH-5.0UNE1NH	RPIH-6.0UNE1NH	RPIH-6.5UNE1NH	
ODU		RAS-3.0UMESNH1	RAS-4.0UMESNH1	RAS-5.0UMESNH1	RAS-6.0UMESNH1	RAS-6.5UMESNH1	
Power supply	V/Ph/Hz	220-240/1/50			380-415/3/50		
Max.input consumption	W	4,100	5,100	6,400	7,000	7,800	
Max.input current	A	18.1	22.5	11.6	12.0	13.1	
Average	Pdesignc	kW	6.800	10.100	12.026	13.480	15.760
	SEER	W/W	6.17	6.23	5.71	6.08	5.99
	Energy Efficiency Class		A++	A++	A+	A+	A+
	Pdesignh	kW	5.620	8.650	9.930	12.400	11.120
	SCOP	W/W	3.85	3.79	3.77	3.78	3.68
	Energy Efficiency Class		A	A	A	A	A
Cooling	Capacity	Btu/h	23,202	34,461	41,033	45,994	53,773
	Capacity	kW	6.8	10.1	12.0	13.5	15.8
	Input	W	2,230	3,311	4,295	4,464	6,062
	Current	A	9.7	16.5	7.4	7.5	10.0
Heating	EER	W/W	3.05	3.05	2.80	3.02	2.60
	Capacity	Btu/h	27,100	39,067	47,768	58,000	63,000
	Capacity	kW	7.9	11.5	14.0	17.0	18.5
	Input	W	2,370	3,400	4,100	4,900	5,600
Indoor fan motor	Current	A	10.5	15.2	7.5	7.7	9.0
	COP	W/W	3.46	3.38	3.41	3.42	3.23
Indoor air flow Rated (Hi/Med/Lo)	Qty		1	1	1	1	1
	Input	W	95	250	250	250	250
Indoor noise level (Hi/Med/Lo)	Capacitor	µF	/	/	/	/	/
	Speed(Hi/Med/Lo)	r/min	890/790/690	800/700/600	910/810/710	1100/1000/900	1100/1000/900
Indoor noise level (Sound Power)	Indoor air flow Rated (Hi/Med/Lo)	m³/h	1100/976/852	1450/1250/1050	1750/1500/1300	2400/2200/1900	2400/2200/1900
	Indoor noise level (Hi/Med/Lo)	dB(A)	44/41/38	46/42/49	51/47/44	55/52/50	56/53/50
ESP	Indoor noise level (Sound Power)	dB(A)	58	62	67	70	72
	Rated	Pa	25	37	50	50	50
Indoor unit	Range	Pa	0-80	0-120	0-120	0-120	0-120
	Dimension(W×H×D)	mm	900×270×720	1300×350×800	1300×350×800	1300×350×800	1300×350×800
	Packing(W×H×D)	mm	1170×340×870	1550×410×940	1550×410×940	1550×410×940	1550×410×940
Drainage water pipe diameter	Net/Gross weight	kg	32/37	51/60	51/60	51/60	51/60
	Controller		Wired controller				
Compressor	Operation temperature	°C	16-30				
	Qty'per 20'/40'/40'HQ (Indoor unit)	Set	84/182/182	35/75/90	35/75/90	35/75/90	35/75/90
Outdoor fan motor	Type		ROTARY	ROTARY	ROTARY	ROTARY	ROTARY
	Rated current(RLA)	A	8.90	5.10	5.10	13.20	12.00
Refrigerant piping	Refrigerant oil	ml	POE VG74/670	POE VG74/1000	POE VG74/1000	α 68HES-H or equivalent /1650	FV50S or PVE/1400
	Qty		1	1	1	2	2
Throttle type	Input	W	61	121	138	121	121
	Speed	r/min	880	830	850	810	810
Outdoor noise level (Sound pressure)	Outdoor noise level (Sound pressure)	dB(A)	53	55	58	53	58
	Outdoor noise level (Sound power)	dB(A)	68	70	74	69	73
Outdoor unit	Dimension(W×H×D)	mm	860×670×310	950×840×340	950×1050×340	950×1386×340	950×1386×340
	Packing(W×H×D)	mm	990×730×450	1110×910×460	1110×1200×460	1110×1527×460	1110×1527×460
	Net/Gross weight	kg	51/57	70/80	85/95	103/109	103/109
Refrigerant piping	Type/Charge	kg	R410A/1.70	R410A/2.80	R410A/3.20	R410A/3.78	R410A/3.95
	Liquid side/Gas side	mm(inch)	φ9.52/φ15.88 (3/8/5/8)	φ9.52/φ19.05 (3/8/3/4)	φ9.52/φ19.05 (3/8/3/4)	φ9.52/φ19.05 (3/8/3/4)	φ9.52/φ19.05 (3/8/3/4)
	Max.pipe length	m	30	50	50	50	50
Annual energy consumption(cooling)	Max.difference in level	m	15	30	30	30	30
	Annual energy consumption(cooling)	kWh/a	412	587	694	831	944
Annual energy consumption(heating)	Annual energy consumption(heating)	kWh/a	2156	3304	3699	4515	4338
	Ambient temperature	°C	-15-48	-15-48	-15-48	-15-48	-15-48
Ambient temperature	Cooling	°C	-15-48	-15-48	-15-48	-15-48	-15-48
	Heating	°C	-15-24	-15-24	-15-24	-15-24	-15-24
Qty'per 20'/40'/40'HQ (Outdoor unit)	Set	90/186/186	52/106/106	26/53/106	26/53/53	26/53/53	

Nominal testing conditions:
Cooling - Indoor 80.6°F DB / 66.2°F WB [27°C DB / 19°C WB] & Outdoor 95°F DB / 75.2°F WB [35°C DB / 24°C WB]
Heating - Indoor 68°F DB / 59°F WB [20°C DB / 15°C WB] & Outdoor 44.6°F DB / 42.8°F WB [7°C DB / 6°C WB]

FLOOR CEILING TYPE

Introduction



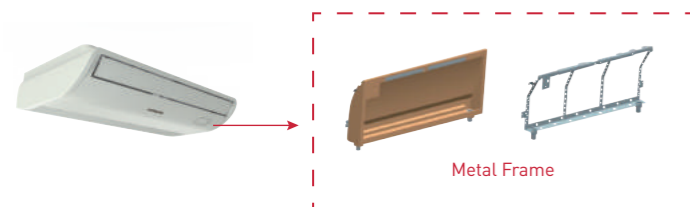
HCRA31NEWH
(Standard)



HCWA21NEWH
(Optional)

Metal frame of drain pan

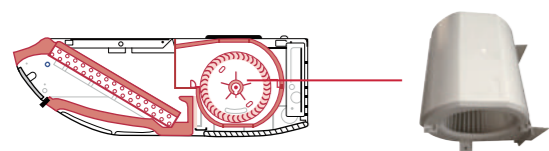
The drain pan adopts integrated design with high strength of steel and foaming PS, which can effectively enhance the durability of drain pan and improve the thermal insulation and anti-condensation function of the unit.



Metal Frame

Plastic Fan housing

Plastic fan housing can reduce the noise level effectively.



Plastic Fan housing



Installation Flexibility

Fresh air inlet

Allow fresh air intake to improve indoor ventilation and air quality.



● Fresh air inlet

Installation on Floor or Ceiling

Floor installation and ceiling suspended installation allows users great flexibility to choose most optimized configuration for air conditioning needs.



Installation on Floor



Installation on Ceiling

Specification (Floor Ceiling)

IDU		RPFC-3.0UNE1NH	RPFC-4.0UNE1NH	RPFC-5.0UNE1NH	RPFC-6.0UNE1NH	RPFC-6.5UNE1NH	
ODU		RAS-3.0UNESNH1	RAS-4.0UNESNH1	RAS-5.0UNESNH1	RAS-6.0UNESNH1	RAS-6.5UNESNH1	
Power supply	V/Ph/Hz	220-240/1/50			380-415/3/50		
Max. input	W	4,100	5,100	6,400	6,300	8,200	
Max. input current	A	18.0	22.5	11.6	11.0	13.5	
Average	Pdesignc	kW	6.750	10.230	12.050	12.868	14.420
	SEER	W/W	5.79	6.07	5.41	5.99	5.90
	Energy Efficiency Class		A+	A+	A	A+	A+
	Pdesignh	kW	5.630	8.465	10.500	12.000	12.300
	SCOP	W/W	3.92	3.97	3.79	3.80	3.80
Cooling	Energy Efficiency Class		A	A	A	A	A
	Capacity	Btu/h	23,031	34,905	41,115	43,906	49,201
	Capacity	kW	6.8	10.2	12.1	12.9	14.4
	Input	W	2,163	3,680	4,866	4,247	5,381
	Current	A	9.7	17.6	8.3	8.2	10.1
Heating	EER	W/W	3.12	2.78	2.48	3.03	2.68
	Capacity	Btu/h	28,000	38,385	47,768	55,000	60,000
	Capacity	kW	8.2	11.3	14.0	16.1	17.6
	Input	W	2,393	3,750	4,502	5,150	6,395
	Current	A	10.5	16.3	8.2	8.2	9.3
Indoor fan motor	COP	W/W	3.43	3.00	3.11	3.13	2.75
	Qty		1	1	1	1	1
Indoor air flow Rated(Hi/Med/Lo)	Input	W	100	140	181	181	181
	Speed(Hi/Med/Lo)	r/min	1280/1100/920	1220/1160/1080	1200/1100/1000	1250/1000/800	1250/1100/950
Indoor air flow Rated(Hi/Med/Lo)	m ³ /h	1100/950/800	1700/1500/1300	2000/1800/1600	2000/1600/1200	2000/1700/1500	
Indoor noise level (Hi/Med/Lo)	CFM	650/570/500	1000/882/765	1176/1059/941	1180/940/710	1180/1000/880	
Indoor noise level (Sound Power)	dB(A)	48/46/42	50/49/48	50/48/45	51/45/41	51/46/43	
	dB(A)	63	64	66	67	66	
Indoor unit	Dimension (WxHxD)	mm	990×230×680	1285×230×680	1580×230×680	1580×230×680	1580×230×680
	Packing(WxHxD)	mm	1100×350×820	1400×350×820	1690×350×820	1690×350×820	1690×350×820
	Net/Gross weight	kg	30/35	37/44	48/56	48/56	50/58
Drainage water pipe diameter (OD)	mm	ODφ25	ODφ25	ODφ25	ODφ25	ODφ25	
Controller		Remote controller					
Operation temperature	°C	16 - 30					
Qty'per 20' /40' /40'HQ (Indoor unit)	Set	84/168/196	42/84/98	42/84/98	42/84/98	42/84/98	
	Type		ROTARY	ROTARY	ROTARY	ROTARY	ROTARY
Compressor	Rated current(RLA)	A	8.9	5.1	5.1	13.2	12.0
	Refrigerant oil	ml	POE VG74/670	PQE VG74/1000	PQE VG74/1000	α 68HES-H or equivalent/1650	FV50S or PVE/1400
	Qty		1	1	1	2	2
Outdoor fan motor	Input	W	61	121	138	121	121
	Speed	r/min	880	830	850	810	810
Outdoor noise level(Sound Pressure)	dB(A)	53	54	58	53	58	
Outdoor noise level(Sound Power)	dB(A)	68	70	74	69	73	
Throttle type		EEV					
Outdoor unit	Dimension(WxHxD)	mm	860×670×310	950×840×340	950×1050×340	950×1386×340	950×1386×340
	Packing(WxHxD)	mm	990×730×450	1110×910×460	1110×1200×460	1110×1527×460	1110×1527×460
	Net/Gross weight	kg	51/57	70/80	85/95	103/109	103/109
Refrigerant	Type		R410A				
	Charged volume	kg	1.70	2.80	3.20	3.78	3.95
Refrigerant piping	Liquid side/ Gas side	mm(inch)	φ9.52/φ15.88(3/8"/5/8")	φ9.52/φ19.05(3/8"/3/4")	φ9.52/φ19.05(3/8"/3/4")	φ9.52/φ19.05(3/8"/3/4")	φ9.52/φ19.05(3/8"/3/4")
	Max. pipe length	m	30	50	50	50	50
	Max. difference in level	m	15	30	30	30	30
Annual energy consumption(cooling)	kWh/a	426	605	668	838	917	
Annual energy consumption(heating)	kWh/a	2,205	3,173	3,683	4,474	4,225	
Ambient temperature	Cooling	°C	-15-48	-15-48	-15-48	-15-48	-15-48
	Heating	°C	-15-24	-15-24	-15-24	-15-24	-15-24
Qty'per 20' /40' /40'HQ (Outdoor unit)	Set	90/186/186	52/106/106	26/53/106	26/53/53	26/53/53	

Nominal testing conditions:
Cooling - Indoor 80.6°F DB / 66.2°F WB [27°C DB / 19°C WB] & Outdoor 95°F DB / 75.2°F WB [35°C DB / 24°C WB]
Heating - Indoor 68°F DB / 59°F WB [20°C DB / 15°C WB] & Outdoor 44.6°F DB / 42.8°F WB [7°C DB / 6°C WB]

