Johnson Controls

HITACHI
Air conditioning solutions

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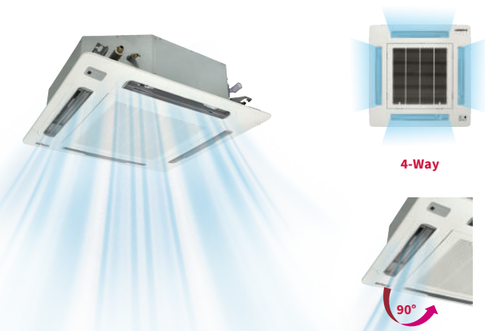
TNZGN(M)H1-C-1808

INDEX

COMFORTABLE

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.



Multi-Speed Fan(Indoor unit)

Multi-Speed fan helps satisfy various airflow requirement.

Cassette Type

Ducted Type

Floor Ceiling Type

Adjustable ESP

ESP in Ducted unit can be adjusted to accommodate various installation configuration.

Capacity (HP)		1.0	1.5	2.0	3.0	4.0	6.0	6.5
ESP	Rated	10	10	10	50	50	80	80
	Range	10/30	10/30	10/30	50/80	50/80	80/120	80/120

Auto Restart

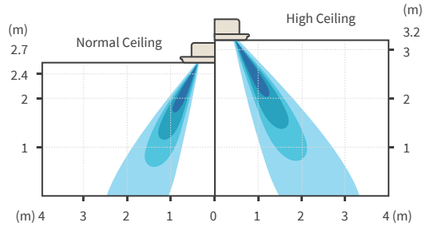
Units are automatically returned to previous operation conditions after a power outage, for simplified operation.

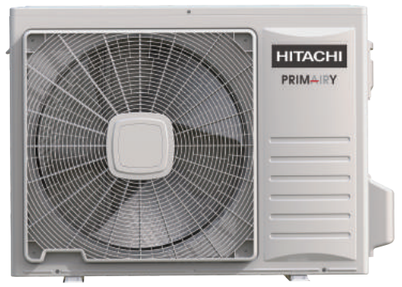
Quiet Operation

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

Temperature Compensation

Enhance temperature distribution when cassette unit is installed at high ceiling height by varying air flow velocity and intelligently correcting temperature difference for desired set point





EFFICIENT & FLEXIBLE

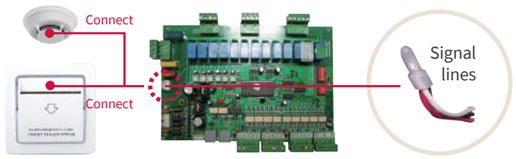
High Efficiency Compressor
Powerful cooling performance at standard and low ambient temperatures:

High efficiency attributed to high performance twin rotary compressor.
Twin rotors balances out centrifugal load resulting from rotation. Reduce compressor vibration, lower noise level, and increase reliability.

High Efficiency Fin
Optimized fin design for heat exchanging
High Efficient Heat Exchanger

High Φ7 louver | High Φ7 louver | High Φ7.94 louver

Expansion interface for Key Slot and Fire Alarm Device



Wide Ambient Temperature Range
High cooling and heating performance at wide ambient temperature range.

Cooling mode:
(2.0~6.5HP)

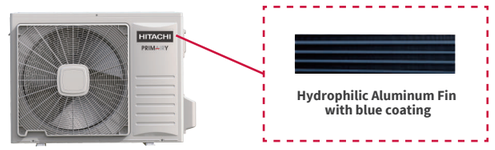
Low Ambient Cooling
Strong cooling performance at low ambient temperature, enabling delivery of reliable cooling demands to users who constantly required high level of air cooling rate regardless of outdoor conditions. System is designed for cooling at -15°C.

Variable motor fan speed
Optimized fan speed in outdoor unit based on actual load for higher efficiency and more energy saving.

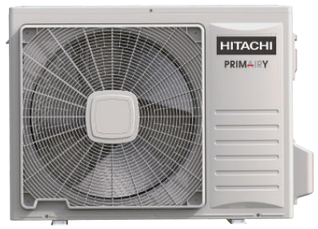
RELIABLE

Hydrophilic Aluminium Fin
Hydrophilic aluminum fin enhances heat exchanging performance by increasing water wettability on fin surface and preventing water droplet from forming blockage between fins.

Blue coating enhances protection from corrosion resulting from environmental and microbiological factors, increasing reliability and ensuring performance.



Temperature Protection System
- Fan motor overheating protection
- Compressor overheating protection



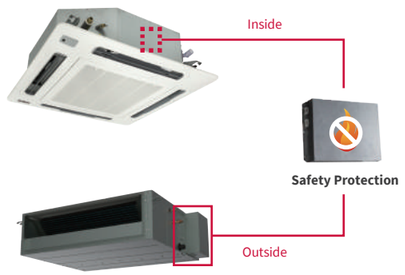
Self Diagnosis
Clearly display failure codes all for quick trouble shooting and easier maintenance.

Low/High pressure switch
High pressure and Low pressure switches ensure the refrigerant system is protected in the event of system over/under pressure.

Comments: only applicable for model above 24k.

High reliability of compressor operation
Viscosity testing was taken for compressor in order to ensure the reliability of the running.

Safety Protection
Control board and electronics are completely enclosed by steel casing which offers great protection against fire hazards and ensures high level of safety during operation.



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

Durable Protection Drainage System
The special design of drain pan makes condensation water flow smoothly without water leakage, also anti-rust.

In the case water pump has problem and the water level rises to a certain level, the water level switch will trigger the turn-off of the unit.

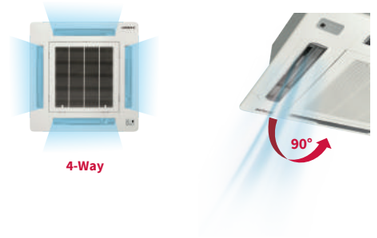
Galvanized Steel Appearance
Duct structure adopts galvanized steel design for durable strength, and anti-corrosion protection.

CASSETTE TYPE

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.

Low Noise Vortex Fan & Fresh Air Inlet
Incorporating with vortex fan technology, these units fit neatly into the ceiling and distribute conditioned air through 4 sides of the unit. Streamline design of vortex fan blades improved air flow while reduces noise.

Fresh air outside can be led into the room, which keeps room air fresh and ventilated. It's about 15m³/h. (Optional function to build fresh air plenum.)

Vortex Fan

SPECIFICATIONS

CASSETTE

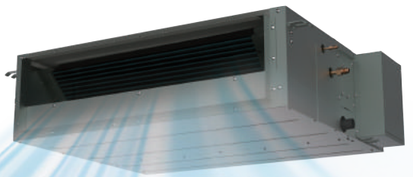
IDU			RCI-1.0TNZ1NH	RCI-1.5TNZ1NH	RCI-2.0TNZ1NH	RCI-3.0TNZ1NH	RCI-4.0TNZ1NH	RCI-6.0TNZ1NH	RCI-6.5TNZ1NH
ODU			RAS-1.0TNZGNH1	RAS-1.5TNZGNH1	RAS-2.0TNZGNH1	RAS-3.0TNZGNH1	RAS-4.0TNZGMH1	RAS-6.0TNZGMH1	RAS-6.5TNZGMH1
Power supply		V/Ph/Hz	220~240/1/50	220~240/1/50	220~240/1/50	220~240/1/50	380~415/3/50	380~415/3/50	380~415/3/50
Max. input consumption		W	1,800	1,800	2,355	3,254	4,368	6,200	8,234
Max. input current		A	10.0	10.0	10.5	15.5	9.1	11.8	16.6
Cooling	Capacity	kW	2,998	3,370	4,648	6,829	10,056	12,506	15,240
	Capacity	Btu/h	10,230	11,500	15,860	23,300	34,310	42,670	52,000
	Input	W	1,052	1,127	1,761	2,430	3,566	4,581	5,583
	Current	A	6.2	6.2	7.5	10.5	6.9	8.9	10.0
	EER	W/W	2.85	2.99	2.64	2.81	2.82	2.73	2.73
Indoor fan motor	Qty		1	1	1	1	1	1	1
	Input	W	39	39	69	88	165	174	174
	Capacitor	μF	1.5	1.5	2.0	3.0	5.0	4.0	4.0
	Speed(Hi/Med/Lo)	r/min	700/600/500	700/600/500	980/840/720	450/390/270	625/550/480	640/550/450	640/550/450
Indoor air flow Rated(Hi/Med/Lo)		m^3/h	600/510/430	600/510/430	800/700/600	1100/1000/900	1600/1400/1200	2000/1800/1600	2000/1800/1600
Indoor noise level (Hi/Med/Lo)		dB(A)	42/40/36	42/40/36	46/44/42	43/41/38	53/50/48	50/45/42	50/45/42
Indoor unit	Dimension (WxHxD)	mm	650×270×570	650×270×570	650×270×570	840×248×840	840×248×840	840×298×840	840×298×840
	Packing (WxHxD)	mm	770×310×750	770×310×750	770×310×750	996×370×956	996×370×956	996×420×956	996×420×956
	Net/Gross weight	kg	19/25	19/25	20/27	28/35	30/39	33/42	33/42
Panel	Dimension (WxHxD)	mm	650×30×650	650×30×650	650×30×650	950×37×950	950×37×950	950×37×950	950×37×950
	Packing (WxHxD)	mm	730×130×730	730×130×730	730×130×730	1025×120×1015	1025×120×1015	1025×120×1015	1025×120×1015
	Net/Gross weight	kg	2.4/5	2.4/5	2.4/5	6.5/9.5	6.5/9.5	6.5/9.5	6.5/9.5
Drainage water pipe diameter		mm	IDΦ21	IDΦ21	IDΦ21	IDΦ32	IDΦ32	IDΦ32	IDΦ32
Controller			Remote controller	Remote controller	Remote controller	Remote controller	Remote controller	Remote controller	Remote controller
Operation temperature		℃	16~30	16~30	16~30	16~30	16~30	16~30	16~30
Qty'per 20' /40' /40'HQ (Indoor Unit)		Set	147/315/384	147/315/384	147/315/384	72/144/168	72/144/168	60/120/144	60/120/144
Compressor	Type		ROTARY	ROTARY	ROTARY	ROTARY	ROTARY	ROTARY	ROTARY
	Rated current(RLA)	A	4.1	4.1	7.2	11.4	5.9	7.8	9.2
	Refrigerant oil	ml	VG74/350	VG74/350	ATMOS-RB68EP/600	α68HES-H/570	α68HES-H/2600	α68HES-H/1600	α68HES-H/1600
Outdoor fan motor	Qty		1	1	1	1	1	2	2
	Input	W	25	25	41	118	160	74/74	145/145
	Speed	r/min	850	850	910	880/830/540	880/740/660	900/800/700	700/600/500
Outdoor noise level (sound pressure)		dB(A)	55	55	54	56	62	55	58
Throttle type			Throttle Valve	Throttle Valve	Throttle Valve	Throttle Valve	Capillary	Capillary	Capillary
Outdoor unit	Dimension (WxHxD)	mm	715×482×240	715×482×240	810×585×280	860×665×310	885×795×366	950×1050×340	950×1386×340
	Packing (WxHxD)	mm	830×530×315	830×530×315	940×640×420	990×730×450	1050×890×500	1110×1200×460	1110×1530×460
	Net/Gross weight	kg	28/30	28/30	42/45	51/56	67/71	96/103	106/116
Refrigerant type/Quantity	Type		R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Charged volume	kg	0.85	0.85	1.30	1.58	2.60	2.40	3.10
Refrigerant piping	Liquid side/Gas side	mm(inch)	Φ6.35/Φ12.7(1/4"/1/2")	Φ6.35/Φ12.7(1/4"/1/2")	Φ6.35/Φ12.7(1/4"/1/2")	Φ9.52/Φ15.88(3/8"/5/8")	Φ9.52/Φ19(3/8"/3/4")	Φ9.52/Φ19.05(3/8"/3/4")	Φ9.52/Φ19.05(3/8"/3/4")
	Max. pipe length	m	15	15	20	30	30	50	50
	Max. difference in level	m	7.5	7.5	15	15	20	30	30
Ambient temperature	Cooling	℃	15~43	15~43	-15~43	-15~43	-15~43	-15~43	-15~43
Qty'per 20' /40' /40'HQ (Outdoor Unit)		Set	204/412/520	204/412/520	102/204/272	90/186/186	44/92/96	26/53/106	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)

DUCTED TYPE

HCWA21NEWH
(Standard)

HCRA31NEWH
(Optional)



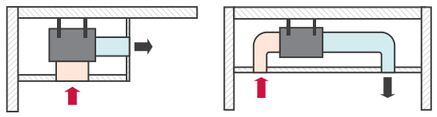
Built-in drain pan
Compared with outside drain pan design, the new built-in drain pan can reduce the dust adhesion, and avoid water leakage.

Built-in drain pan

VS

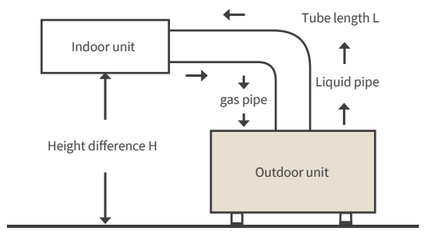
Outside drain pan

Flexible air return from bottom or rear
Depending on different installation circumstances, the installation will be highly flexible.



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

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



Durable Protection Drainage System
The special design of drain pan makes condensation water flow smoothly without water leakage, also anti-rust.

SPECIFICATIONS

DUCTED

IDU			RPIL-1.0TNZ1NH	RPIL-1.5TNZ1NH	RPIL-2.0TNZ1NH	RPIM-3.0TNZ1NH	RPIM-4.0TNZ1NH	RPIH-6.0TNZ1NH	RPIH-6.5TNZ1NH
ODU			RAS-1.0TNZGNH1	RAS-1.5TNZGNH1	RAS-2.0TNZGNH1	RAS-3.0TNZGNH1	RAS-4.0TNZGMH1	RAS-6.0TNZGMH1	RAS-6.5TNZGMH1
Power supply		V/Ph/Hz	220~240/1/50	220~240/1/50	220~240/1/50	220~240/1/50	380~415/3/50	380~415/3/50	380~415/3/50
Max. input consumption		W	1,800	1,800	2,460	3,250	4,321	6,479	8,234
Max. input current		A	10.0	10.0	10.2	15.5	9.0	12.1	16.6
Cooling	Capacity	W	2,989	3,277	4,686	6,829	10,258	13,113	14,692
	Capacity	Btu/h	10,200	11,180	15,990	23,300	35,000	44,740	50,130
	Input	W	1,076	1,162	1,775	2,439	3,703	4,967	5,830
	Current	A	5.1	5.1	7.5	10.2	6.9	8.8	10.0
	EER	W/W	2.78	2.82	2.64	2.80	2.77	2.64	2.52
Indoor fan motor	Qty		1	1	1	1	1	1	1
	Input	W	70	70	83	226	209	558	558
	Capacitor	μF	3.0	3.0	2.5	6.0	10.0	10.0	10.0
	Speed(Hi/Med/Lo)	r/min	955/700/655	955/700/655	1280/1130/1070	910/830/730	917/821/787	1000/900/830	1000/900/830
Indoor air flow Rated(Hi/Med/Lo)		m^3/h	650/470/450	650/470/450	750/670/630	1250/1000/900	1800/1650/1500	2000/1800/1600	2000/1800/1600
Indoor noise level (Hi/Med/Lo)		dB(A)	34/29/28	34/31/29	38/36/35	42/40/38	40/38/37	46/44/42	46/44/42
Indoor unit	Dimension (WxHxD)	mm	900×190×447	900×190×447	900×190×447	900×270×720	1300×350×800	1300×350×800	1300×350×800
	Packing(WxHxD)	mm	1070×236×580	1070×236×580	1070×236×580	1170×340×870	1550×410×940	1550×410×940	1550×410×940
	Net/Gross weight	kg	19/25	19/25	19/25	30/35	54/62	54/62	54/62
Drainage water pipe diameter		mm	ODΦ32	ODΦ32	ODΦ32	ODΦ32	ODΦ32	ODΦ32	ODΦ32
Controller			Wired controller	Wired controller	Wired controller	Wired controller	Wired controller	Wired controller	Wired controller
Operation temperature		℃	16~30	16~30	16~30	16~30	16~30	16~30	16~30
Qty'per 20' /40' /40'HQ (Indoor unit)		Set	200/440/484	200/440/484	200/440/484	84/182/182	35/75/90	35/75/90	35/75/90
Compressor	Type		ROTARY	ROTARY	ROTARY	ROTARY	ROTARY	ROTARY	ROTARY
	Rated current(RLA)	A	4.1	4.1	7.2	11.4	5.9	7.8	9.2
	Refrigerant oil	ml	VG74/350	VG74/350	ATMOS-RB68EP/600	α68HES-H/570	α68HES-H/2600	α68HES-H/1600	α68HES-H/1600
Outdoor fan motor	Qty		1	1	1	1	1	2	2
	Input	W	25	25	41	118	160	74/74	145/145
	Speed	r/min	850	850	910	880/830/540	880/740/660	900/800/700	700/600/500
Outdoor noise level (sound pressure)		dB(A)	55	55	54	56	62	55	58
Throttle type			Throttle Valve	Throttle Valve	Throttle Valve	Throttle Valve	Capillary	Capillary	Capillary
Outdoor unit	Dimension(WxHxD)	mm	715×482×240	715×482×240	810×585×280	860×665×310	885×795×366	950×1050×340	950×1386×340
	Packing(WxHxD)	mm	830×530×315	830×530×315	940×640×420	990×730×450	1050×890×500	1110×1200×460	1110×1530×460
	Net/Gross weight	kg	28/30	28/30	42/45	51/56	67/71	96/103	106/116
Refrigerant type/Quantity	Type		R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Charged volume	kg	0.85	0.85	1.30	1.58	2.60	2.40	3.10
Refrigerant piping	Liquid side/ Gas side	mm(inch)	Φ6.35/Φ12.7 (1/4"/1/2")	Φ6.35/Φ12.7 (1/4"/1/2")	Φ6.35/Φ12.7 (1/4"/1/2")	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")
	Max. pipe length	m	15	15	20	30	30	50	50
	Max. difference in level	m	7.5	7.5	15	15	20	30	30
Ambient temperature	Cooling	℃	15~43	15~43	-15~43	-15~43	-15~43	-15~43	-15~43
Qty'per 20' /40' /40'HQ (Outdoor unit)		Set	204/412/520	204/412/520	102/204/272	90/186/186	44/92/96	26/53/106	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)

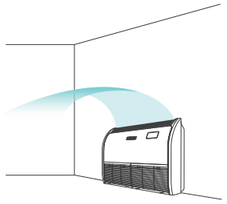
FLOOR CEILING TYPE

HCRA31NEWH
(Standard)

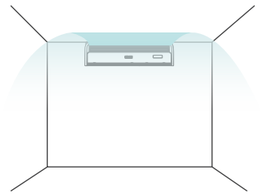
HCWA21NEWH
(Optional)

Installation on Floor or Ceiling

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



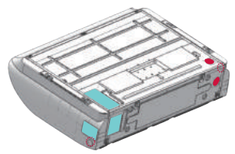
Installation on Floor



Installation on Ceiling

Dual Drain pipe

Both right and left sides are possible for drainage hose connection, easy for installation.There are 3 choices for refrigerant piping direction, to avoid the unconvenience caused by space limit.



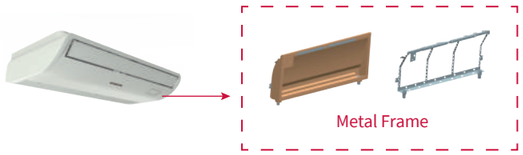
- **Fresh air inlet**
- **Refrigerant pipe line**
- **Drain pipe**

Fresh air inlet

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

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.



SPECIFICATIONS

FLOOR CEILING

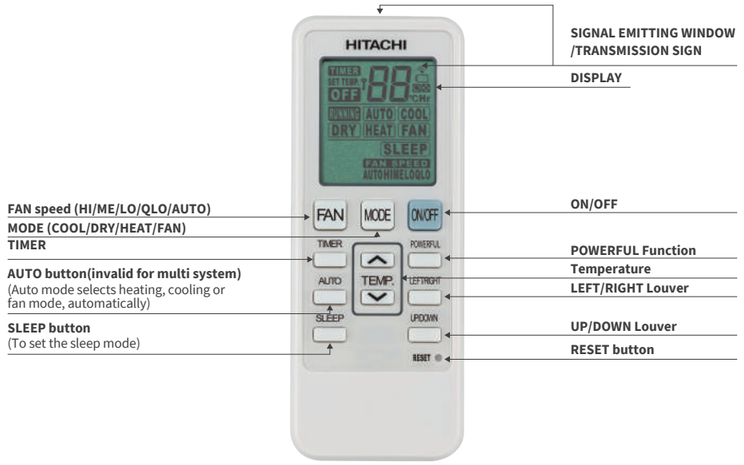
IDU			RPFC-2.0TNZ1NH	RPFC-3.0TNZ1NH	RPFC-4.0TNZ1NH	RPFC-6.0TNZ1NH	RPFC-6.5TNZ1NH
ODU			RAS-2.0TNZGNH1	RAS-3.0TNZGNH1	RAS-4.0TNZGMH1	RAS-6.0TNZGMH1	RAS-6.5TNZGMH1
Power supply (Outdoor)		V/Ph/Hz	220~240/1/50	220~240/1/50	380~415/3/50	380~415/3/50	380~415/3/50
Max. input consumption		W	2,405	3,255	4,272	6,479	8,234
Max. input current		A	11.0	15.5	8.9	12.1	16.6
Cooling	Capacity	W	4,689	6,536	9,648	12,869	14,613
	Capacity	Btu/h	16,000	22,300	32,920	43,910	49,860
	Input	W	1,790	2,430	3,483	4,564	5,412
	Current	A	7.5	10.2	7.1	8.8	10.0
	EER	W/W	2.62	2.69	2.77	2.82	2.70
Indoor fan motor	Qty		1	1	1	1	1
	Input	W	73	175	229	243	243
	Speed(Hi/Med/Lo)	r/min	850/720/630	1280/1100/920	1260/1130/1000	1200/1100/1000	1200/1100/1000
Indoor air flow Rated(Hi/Med/Lo)		m^3/h	800/700/600	1400/1100/900	1700/1650/1500	2000/1800/1600	2000/1800/1600
Indoor noise level (Hi/Med/Lo)		dB(A)	41/38/36	52/50/46	57/54/52	53/52/50	53/52/50
Indoor unit	Dimension (WxHxD)	mm	990×230×680	990×230×680	1285×230×680	1580×230×680	1580×230×680
	Packing(WxHxD)	mm	1100×350×820	1100×350×820	1400×350×820	1690×350×820	1690×350×820
	Net/Gross weight	kg	28/35	30/36	40/47	46/54	46/54
Drainage water pipe diameter		mm	ODΦ25	ODΦ25	ODΦ25	ODΦ25	ODΦ25
Controller			Remote controller	Remote controller	Remote controller	Remote controller	Remote controller
Operation temperature		℃	16~30	16~30	16~30	16~30	16~30
Qty'per 20' /40' /40'HQ (Indoor unit)			84/168/196	84/168/196	66/132/154	42/84/98	42/84/98
Compressor	Type		ROTARY	ROTARY	ROTARY	ROTARY	ROTARY
	Rated current(RLA)	A	7.2	11.4	5.9	7.8	9.2
	Refrigerant oil	ml	ATMOS-RB68EP/600	α68HES-H/570	α68HES-H/2600	α68HES-H/1600	α68HES-H/1600
Outdoor fan motor	Qty		1	1	1	2	2
	Input	W	41	118	160	74/74	145/145
	Speed	r/min	910	880/830/540	880/740/660	900/800/700	700/600/500
Outdoor noise level (sound pressure)		dB(A)	54	56	62	55	58
Throttle type			Throttle Valve	Throttle Valve	Throttle Valve	Capillary	Capillary
Outdoor unit	Dimension (WxHxD)	mm	810×585×280	860×665×310	885×795×366	950×1050×340	950×1386×340
	Packing (WxHxD)	mm	940×640×420	990×730×450	1050×890×500	1110×1200×460	1110×1530×460
	Net/Gross weight	kg	42/45	51/56	67/71	96/103	106/116
Refrigerant type /Quantity	Type		R410A	R410A	R410A	R410A	R410A
	Charged volume	kg	1.30	1.58	2.60	2.40	3.10
Refrigerant piping	Liquid side/Gas side	mm(inch)	Φ6.35/Φ12.7(1/4'/1/2')	Φ9.52/Φ15.88(3/8'/5/8')	Φ9.52/Φ19(3/8"/3/4")	Φ9.52/Φ19.05(3/8"/3/4")	Φ9.52/Φ19.05(3/8"/3/4")
	Max. pipe length	m	20	30	30	50	50
	Max. difference in level	m	15	15	20	30	30
Ambient temperature	Cooling	℃	-15~43	-15~43	-15~43	-15~43	-15~43
Qty'per 20' /40' /40'HQ (Outdoor unit)		Set	102/204/272	90/186/186	44/92/96	26/53/106	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)

CONTROLLER

REMOTE CONTROLLER

HCRA31NEWH



WIRED CONTROLLER

HCWA21NEWH