INVERTER SCROLL CHILLER

ULTIMATE INVERTER COMPRESSOR

As the core technology of the air conditioning system, the Ultimate Inverter Compressor of MULTI V 5 boasts its ultimate efficiency and durability, designed based on the unique technology and innovation of LG HVAC.

All Inverter

Provide high efficiency with low vibration and low noise

Six By-pass Valves

Prevent compressor damage due to excessively compressed refrigerant more efficiently than 4 by-pass valves

01. Vapor Injection

Wide operating range via two-stage compression

02. Enhanced Bearing with PEEK Material

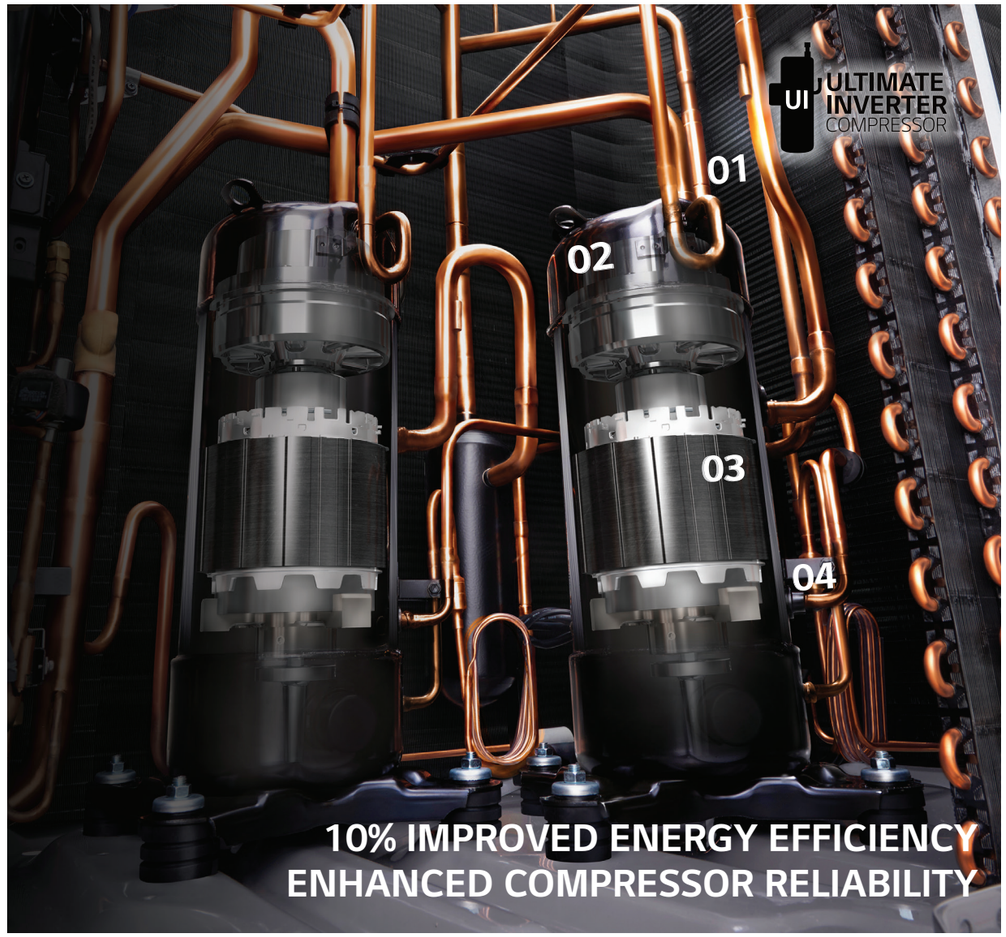
Newly invented system motivated by PEEK (Polyetheretherketone) bearing used for aero engine to increase operation range and durability

03. Wide Operation Range from 30 to 130 Hz

Improved part load efficiency at all operation ranges

04. HiPOR™ (High Pressure Oil Return)

Resolve compressor efficiency loss caused by oil return



Smart Farm

Small Industry (Process Water)

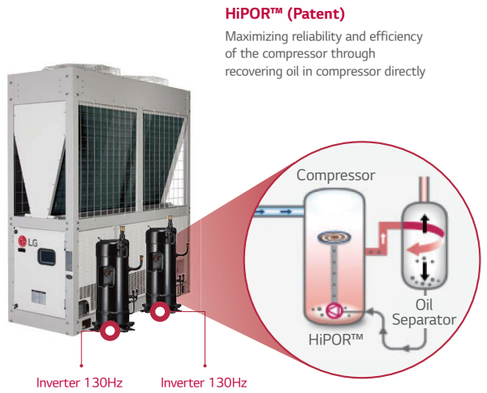
Hotel / Office

All Inverter Scroll Compressor

All inverter scroll compressor with HiPOR™ (Patent) is applied to improve full load and part load energy efficiency.

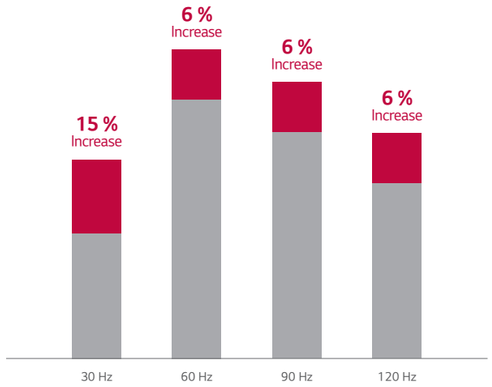
All Inverter System

Wide operation frequency range 30 ~ 130Hz



Compressor Efficiency

Compressor efficiency by Hz is increased through HiPOR™ application

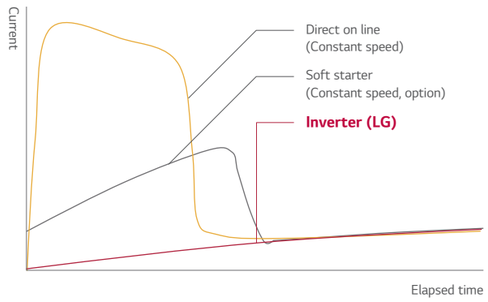


※ Test condition at Tc=54.4°C, Te=7.2°C

App. Inverter Comp. vs Constant Speed Comp.

Inverter compressor is more stable and efficient solution than Constant speed compressor.

Comparison of starting type



Compressor	Starting type	Starting current (Is / FLA*, %)
Constant speed	Direct on line	About 650 %
	Soft starter	200 ~ 350 %
Inverter (LG)	Inverter	No inrush current

* FLA : Full load ampere

Inverter's feature & benefits

When starting

Reduce starting torque below full load torque
➠ **Mechanical wear↓**

Decrease starting current under FLA
➠ **Circuit breaker capacity↓**

When operating

Low electric loss due to high value of the power factor**
➠ **Energy efficient**

Low power input in part load
➠ **High SEER**

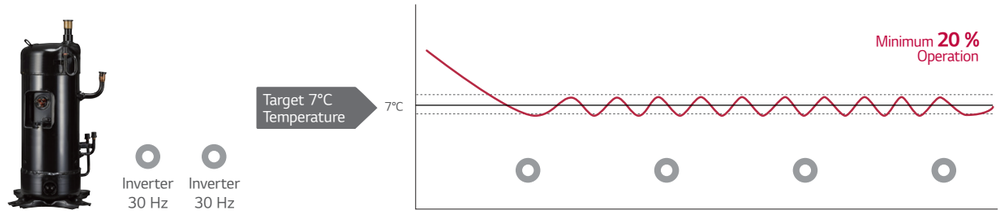
Continuously adjust compressor output according to the load (Compressor 15~125Hz)
➠ **Save energy**

** Power factor : Ratio between active power(kW) and total power(kVA)

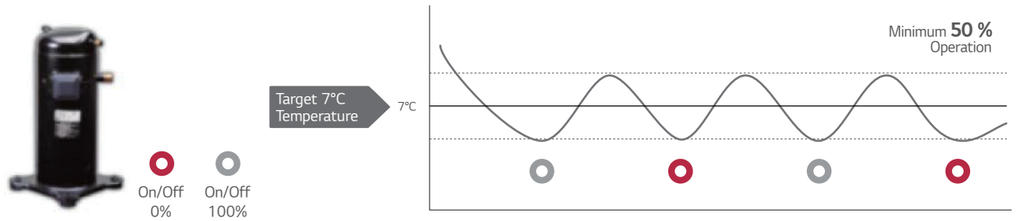
Lower Load Operation

20% part load operation and minimized water outlet temperature haunting with Inverter scroll compressor.

LG Inverter Scroll Compressor



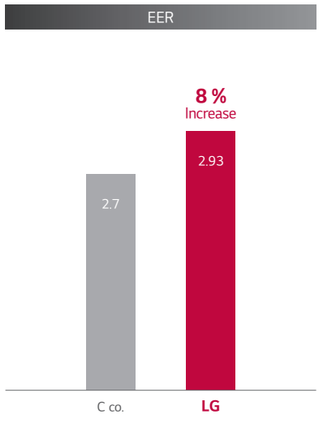
Normal On/Off Multi Compressor System



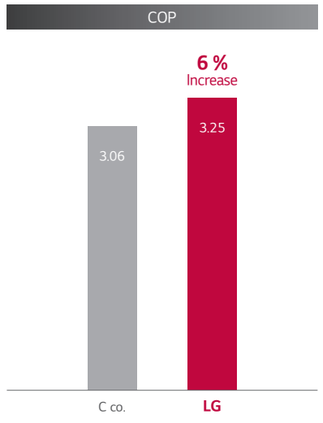
High Energy Efficiency

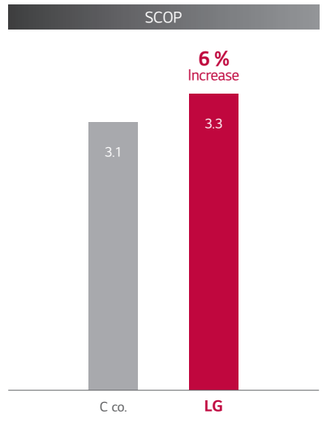
All inverter scroll compressors with Multi V technologies improve energy efficiency.

Cooling Performance



Heating Performance



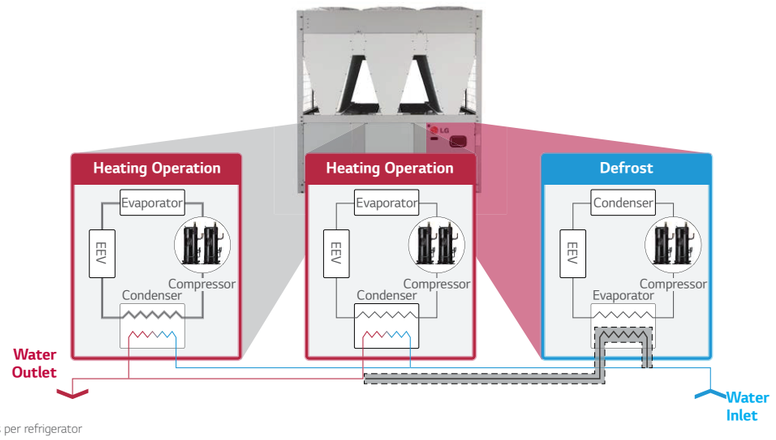


※ 65 kW Heat pump model comparison

Continuous Heating Operation

Continuous heating minimizes the decrease of water outlet temperature during defrosting for multi circuit model.

Multi cycle can defrost each cycle individually to supply hot water continuously multi cycle.

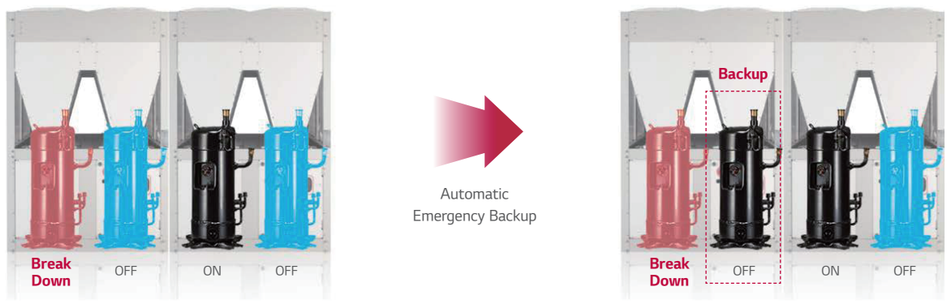


* Applied up to 6 scroll compressors per refrigerator

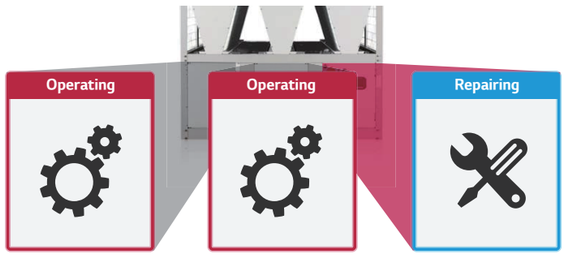
Back Up Operation

If one compressor or one cycle needs to be repaired, backup operation helps the whole system to operate continuously.

All Inverter System



Cycle back up



Corrosion Resistance (Black Fin)

'Black Fin' heat exchanger is highly corrosion resistant, designed to perform in corrosive environments such as contaminated and humid condition.

Black Fin

- Longer lifespan, lower operational costs
- Strengthened corrosion resistant coating

Hydrophilic Coating

The hydrophilic coating minimizes moisture build up on the fin.

Corrosion Resistant Black Coating

The black coating provides strong protection from corrosion.

Aluminum Fin

Black Box Function

Quick service can be done because operation data can be saved for 180 seconds before system failure.

Without Black Box Function

Check many failure causes and error codes in person

Take much service time and undergo trial and error

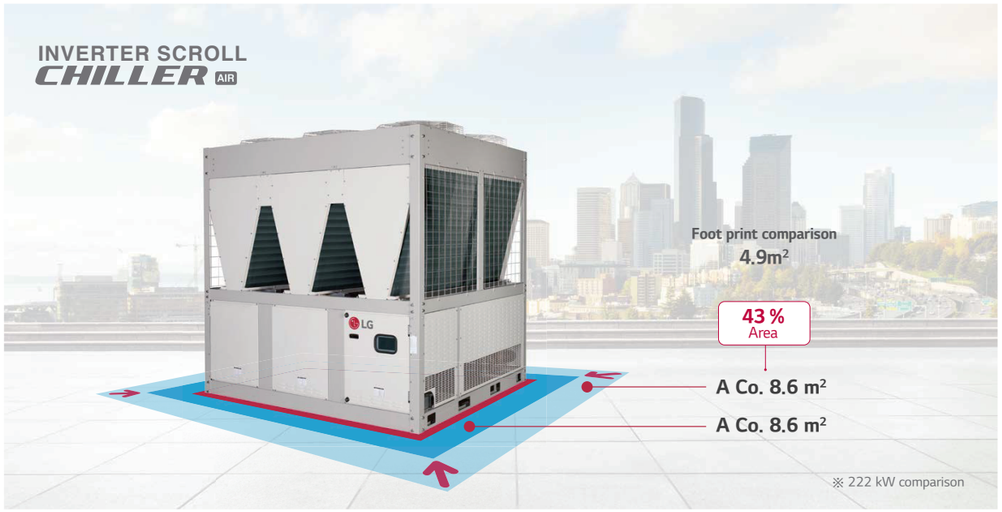
With Black Box Function

Search for the failure cause conveniently using recorded data

Save service time and diagnose it more accurately

Compact Size

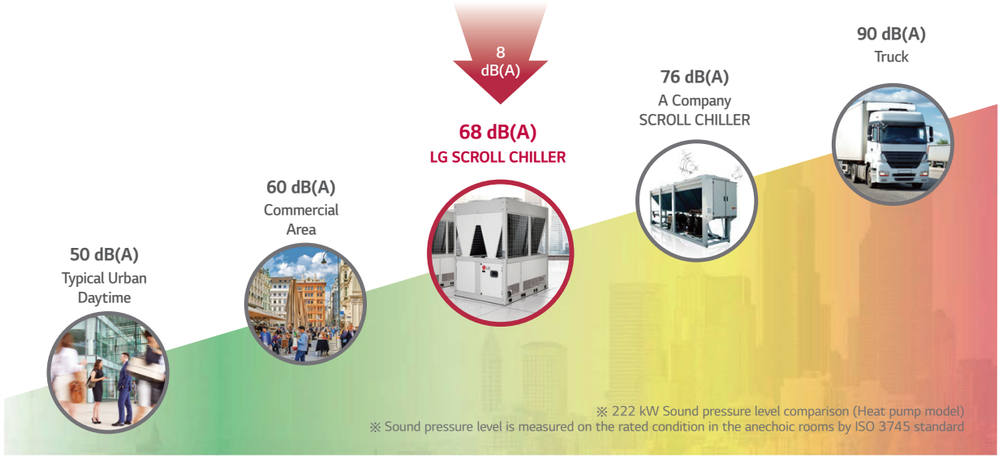
Compact size reduces concern about installation and service space.



Low Noise Level

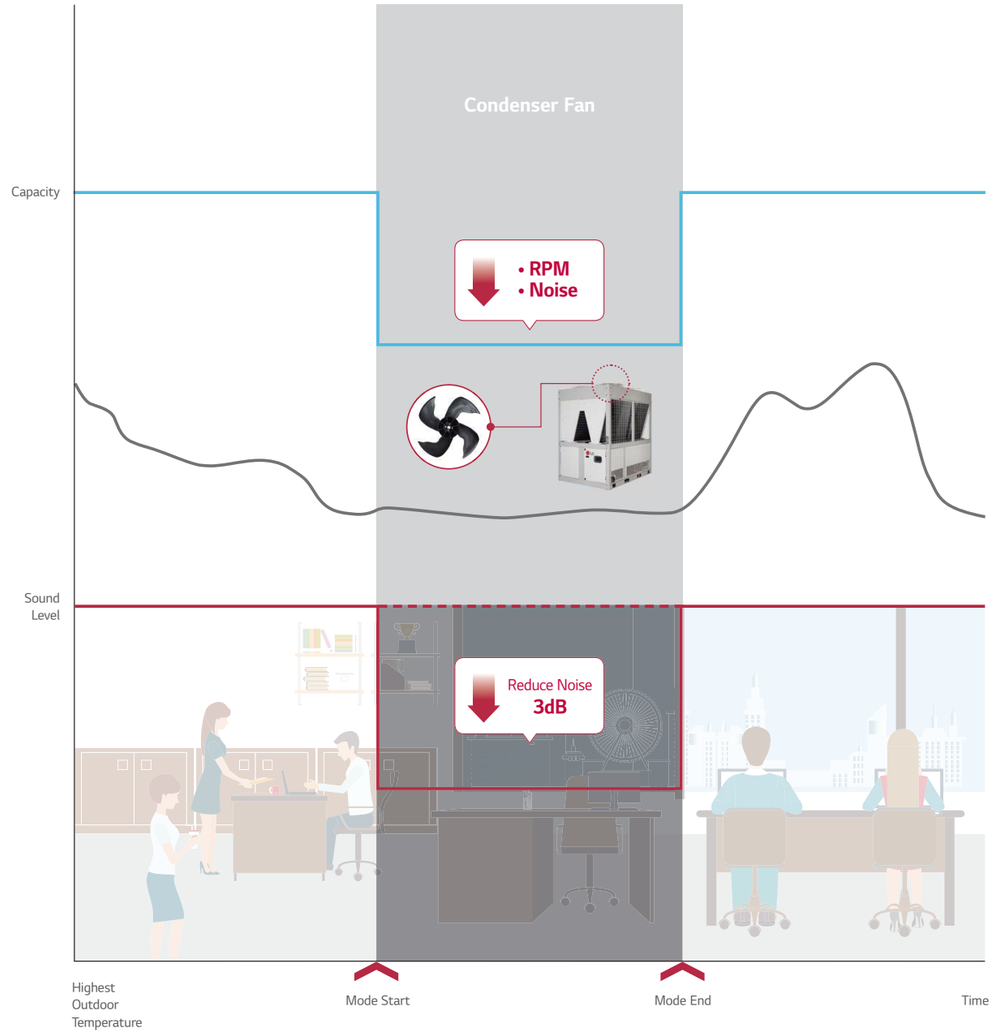
Lower noise can reduce noise pollution and provide a quieter environment.

Noise Comparison



Silent Operation Function (Cooling Mode)

Silent operation function can reduce noise levels at night time by adjusting the fan RPM.



ACHH020LBAB / ACHH023LBAB
ACHH033LBAB / ACHH040LBAB


LG participates in the ECP programme for EUROVENT VRF program. Check ongoing validity of certification : www.eurovent-certification.com

Heat pump model

INVERTER SCROLL CHILLER			ACHH020LBAB	ACHH023LBAB	ACHH033LBAB	ACHH040LBAB
			H/P	H/P	H/P	H/P
Power		Phase,Lines,V	3,4,380~415	3,4,380~415	3,4,380~415	3,4,380~415
Capacity	Cooling	kW	65	74	114	130
		RT	18.5	21	32.4	37
	Heating	kW	70.3	82	120	140.6
		RT	20	23	34	40
Input Power	Cooling	kW	22.2	27.4	36.8	44.4
	Heating	kW	21.6	27.3	35.3	43.3
Max operating Current		A	39	48	72	78
Efficiency	Cooling	W/W	2.93	2.70	3.10	2.93
	Heating	W/W	3.25	3.00	3.40	3.25
SEER		W/W	4.40	4.20	4.50	4.40
SCOP		W/W	3.30	3.30	3.30	3.30
Sound Pressure		dBA	67	68	68	68
Sound power	Cooling	dBA	86	87	87	90
	Heating		86	87	88	90
Compressor	Type	-	Scroll	Scroll	Scroll	Scroll
	No. of Compressor	EA	2	2	4	4
	Oil Type	-	PVE	PVE	PVE	PVE
	Oil charge	cc	1,400 x 2	1,400 x 2	1,400 x 4	1,400 x 4
	Sump Heater	W	60 x 2	60 x 2	60 x 4	60 x 4
Refrigrant	Type	-	R410A	R410A	R410A	R410A
	Amount of Charged	Kg	7.0 kg x 2	7.0 kg x 2	7.0 kg x 4	7.0 kg x 4
Evaporator	Type	-	plate	plate	plate	plate
	Pressure drop	kPa	21.5	28.7	18.7	21.5
	Operating maximum pressure (Refrigrant / Water)	kg/cm²	42/10	42/10	42/10	42/10
	Standard Flow (Cooling/Heating)	LPM	186/200	211/235	327/345	372/400
	Inlet/Outlet diameter (Water pipe)	mm	50A/50A	50A/50A	65A/65A	65A/65A
Fan motor	Type	-	BLDC	BLDC	BLDC	BLDC
	No. of Fan	EA	2	2	4	4
	No. of Vanes	EA	4	4	4	4
	Air Flow Rate	CMM	210 x 2 @1,000 rpm	210 x 2 @1,000 rpm	210 x 4 @1,000 rpm	210 x 4 @1,000 rpm
	Motor power	W	900 x 2	900 x 2	900 x 4	900 x 4
Expansion unit		-	EEV	EEV	EEV	EEV
Weight		kg	520	520	970	970
Dimension	W	mm	765	765	1,528	1,528
	H	mm	2,293	2,293	2,293	2,293
	D	mm	2,154	2,154	2,154	2,154
Footprint		m² / RT	0.089	0.078	0.102	0.089
Protection Devices	High/Low Pressure	-	•	•	•	•
	Anti Frost	-	•	•	•	•
Remote Control		-	Modbus	Modbus	Modbus	Modbus
Power	Power Line	mm²	25.0mm² x 5C	25.0mm² x 5C	50.0mm² x 5C	50.0mm² x 5C
Outlet Temperature	Cooling	℃	5~20	5~20	5~20	5~20
	Heating	℃	30~55	30~55	30~55	30~55
Ambient Temperature	Cooling	℃	-15~48	-15~48	-15~48	-15~48
	Heating	℃	-30~35	-30~35	-30~35	-30~35
Earth Leakage Breaker		A	75	75	125	125

Notes :
1. Due to our policy of innovation some specifications may be changed without prior notification.
2. Capacities and Inputs are based on the following conditions
   Cooling : Outdoor air temp. 35°C, Water inlet temp. 12°C, Water Outlet temp. 7°C
   Heating : Outdoor air temp. 7°C, Water inlet temp. 40°C, Water Outlet temp. 45°C
3. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard.
   Sound power level is measured ISO 9614:2009 by sound intensity method. Therefore, these values can be increased owing to ambient conditions during operation.

ACHH045LBAB / ACHH050LBAB
ACHH060LBAB / ACHH067LBAB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Heat pump model

INVERTER SCROLL CHILLER			ACHH045LBAB	ACHH050LBAB	ACHH060LBAB	ACHH067LBAB
			H/P	H/P	H/P	H/P
Power		Phase,Lines,V	3,4,380~415	3,4,380~415	3,4,380~415	3,4,380~415
Capacity	Cooling	kW	148	171	195	222
		RT	42.1	48.6	55.4	63.1
	Heating	kW	164	180	210.9	246
		RT	47	51	60	70
Input Power	Cooling	kW	54.8	55.2	66.6	82.2
	Heating	kW	54.7	52.9	64.9	82
Max operating Current		A	96	108	117	144
Efficiency	Cooling	W/W	2.70	3.10	2.93	2.70
	Heating	W/W	3.00	3.40	3.25	3.00
SEER		W/W	4.20	4.50	4.40	4.20
SCOP		W/W	3.30	3.30	3.30	3.30
Sound Pressure		dBA	68	68	68	68
Sound power	Cooling	dBA	91	88	91	92
	Heating		91	88	91	92
Compressor	Type	-	Scroll	Scroll	Scroll	Scroll
	No. of Compressor	EA	4	6	6	6
	Oil Type	-	PVE	PVE	PVE	PVE
	Oil charge	cc	1,400 x 4	1,400 x 6	1,400 x 6	1,400 x 6
	Sump Heater	W	60 x 4	60 x 6	60 x 6	60 x 6
Refrigrant	Type	-	R410A	R410A	R410A	R410A
	Amount of Charged	Kg	7.0 kg x 4	7.0 kg x 6	7.0 kg x 6	7.0 kg x 6
Evaporator	Type	-	plate	plate	plate	plate
	Pressure drop	kPa	28.7	18.7	21.5	28.7
	Operating maximum pressure (Refrigrant / Water)	kg/cm²	42/10	42/10	42/10	42/10
	Standard Flow (Cooling/Heating)	LPM	411/470	490/518	558/600	633/705
	Inlet/Outlet diameter (Water pipe)	mm	65A/65A	65A/65A	65A/65A	65A/65A
Fan motor	Type	-	BLDC	BLDC	BLDC	BLDC
	No. of Fan	EA	4	6	6	6
	No. of Vanes	EA	4	4	4	4
	Air Flow Rate	CMM	210 x 4 @1,000 rpm	210 x 6 @1,000 rpm	210 x 6 @1,000 rpm	210 x 6 @1,000 rpm
	Motor power	W	900 x 4	900 x 6	900 x 6	900 x 6
Expansion unit		-	EEV	EEV	EEV	EEV
Weight		kg	970	1,430	1,430	1,430
Dimension	W	mm	1,528	2,291	2,291	2,291
	H	mm	2,293	2,293	2,293	2,293
	D	mm	2,154	2,154	2,154	2,154
Footprint		m² / RT	0.078	0.101	0.089	0.078
Protection Devices	High/Low Pressure	-	•	•	•	•
	Anti Frost	-	•	•	•	•
Remote Control		-	Modbus	Modbus	Modbus	Modbus
Power	Power Line	mm²	50.0mm² x 5C	95.0mm² x 5C	95.0mm² x 5C	95.0mm² x 5C
Outlet Temperature	Cooling	℃	5~20	5~20	5~20	5~20
	Heating	℃	30~55	30~55	30~55	30~55
Ambient Temperature	Cooling	℃	-15~48	-15~48	-15~48	-15~48
	Heating	℃	-30~35	-30~35	-30~35	-30~35
Earth Leakage Breaker		A	125	200	200	200

Notes :
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   Heating : Outdoor air temp. 7°C, Water inlet temp. 40°C, Water Outlet temp. 45°C
3. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard.
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