LG

INVERTER SCROLL CHILLER AIR

R32

LG

WHY LG INVERTER SCROLL CHILLER

By applying world class EHP technology of MULTI V, high efficient and reliable operation has been achieved.

Inverter technologies of LG EHP*

- Twin All Inverter and HiPOR™**

Twin All Inverter

- Improved partial load operation

Wide operation Frequency range 30 ~ 120 Hz

* EHP : Electric Heat Pump
** HiPOR™ : High Pressure Oil Return

Pressure control

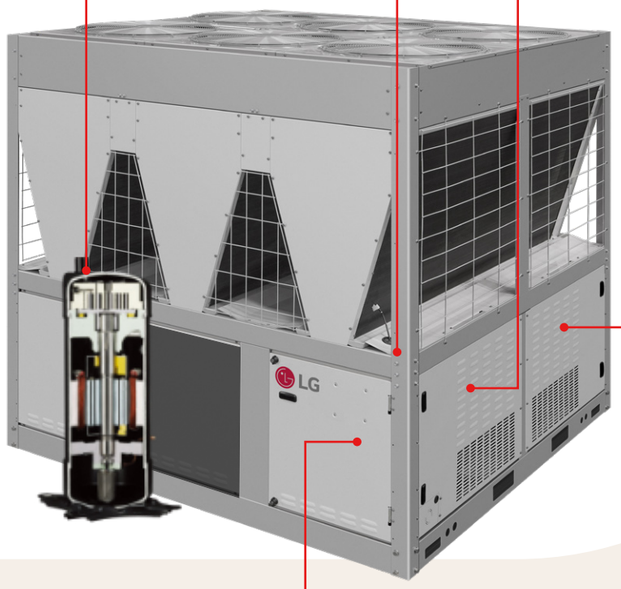
- More precise and reliable operation
- Applied to MULTI V control logic

Temperature Sensor + Pressure Sensor

R-32 refrigerant

- Zero ODP* & low GWP** (1/3rd of R-410A)

* ODP : Ozone Depletion Potential
**GWP: Global Warming Potential



Advanced Compressor Technology

R32 compressor

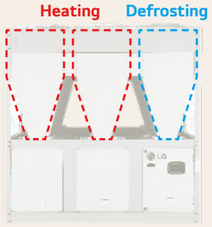
- Improved capacity **Max. 7%↑ (90 Hz)** compared to previous model's compressor
- Accurate oil management and control with an HiPOR™ Technology

Refrigerant-cooling heatsink

- Removes more heat from inverter PCB with explosion-proof construction of Control box
- Applied to MULTI V cycle component

Continuous heating operation

- Continue heating when defrosting



Residential Buildings / Hotel

Office / School

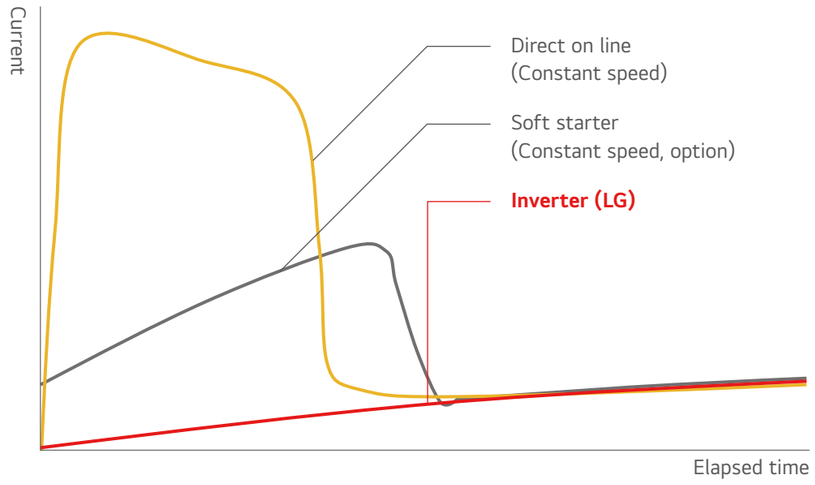
Factory / Swimming Pool

HIGH EFFICIENT INVERTER TECHNOLOGIES

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 (I_s / 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
➔ **Less burden to motor**

When operating

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

Low power input in part load
➔ **High SCOP, High SEER**

Continuously adjust compressor output according to the load
➔ **Save energy**

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

Advanced Compressor Technology

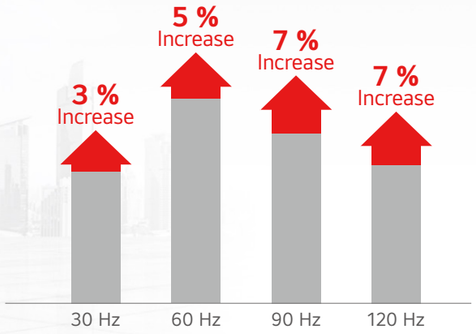
All inverter scroll compressor has higher performance by Hz.

All Inverter System

Wide operation frequency range **30 ~ 120 Hz**

Compressor Performance

Compared to previous model, compressor has higher capacity by Hz.

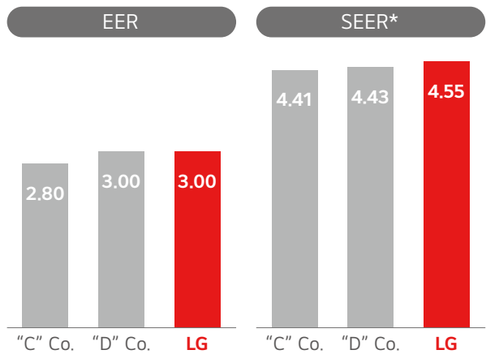


※ Test condition at Tc = 37.9℃ (100.0℉)
Te = 7.2℃ (45.0℉)

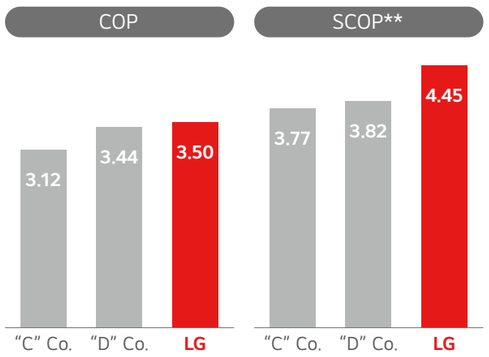
High Energy Efficiency

All Inverter scroll compressors with MULTI V technologies improve energy efficiency.

Cooling Efficiency



Heating Performance

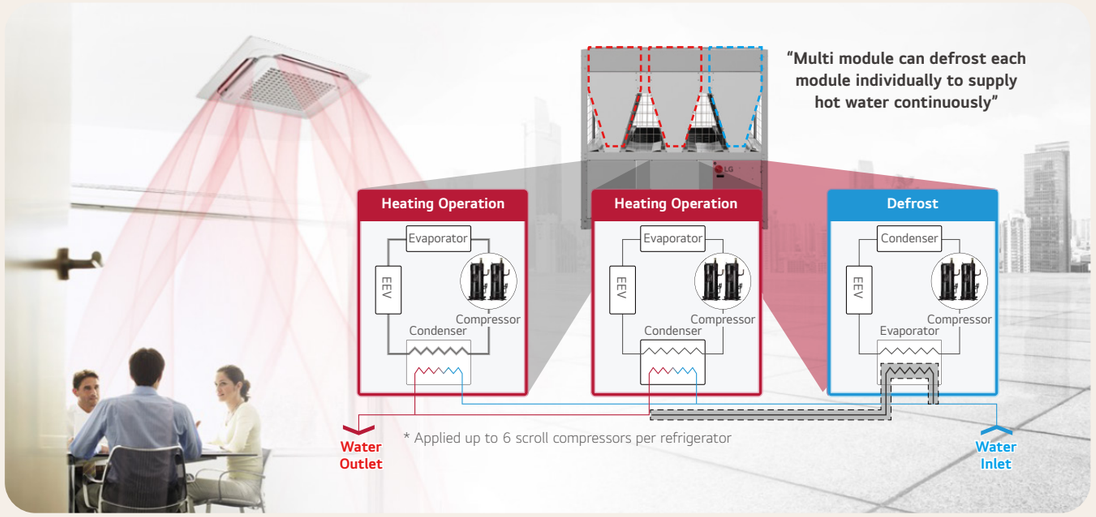


※ KCHH060LDGC model comparison
* SEER : Seasonal energy efficiency ratio
** SCOP : Seasonal coefficient of performance (Average, LT)

RELIABILITY & STABILITY

Continuous Heating Operation

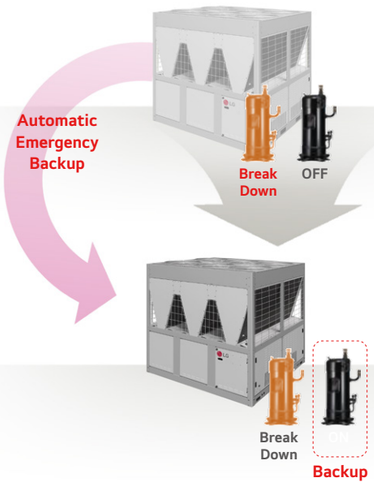
Continuous heating minimizes the decrease of water outlet temperature during defrosting for multi module.



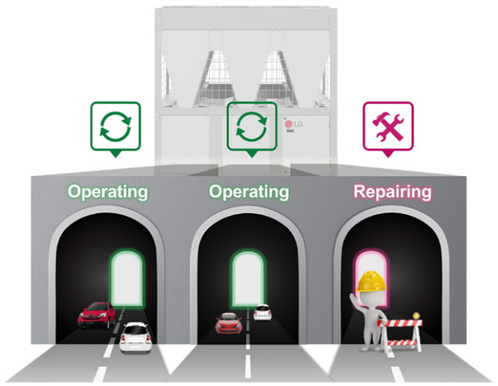
Back Up Operation

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

Compressor back up

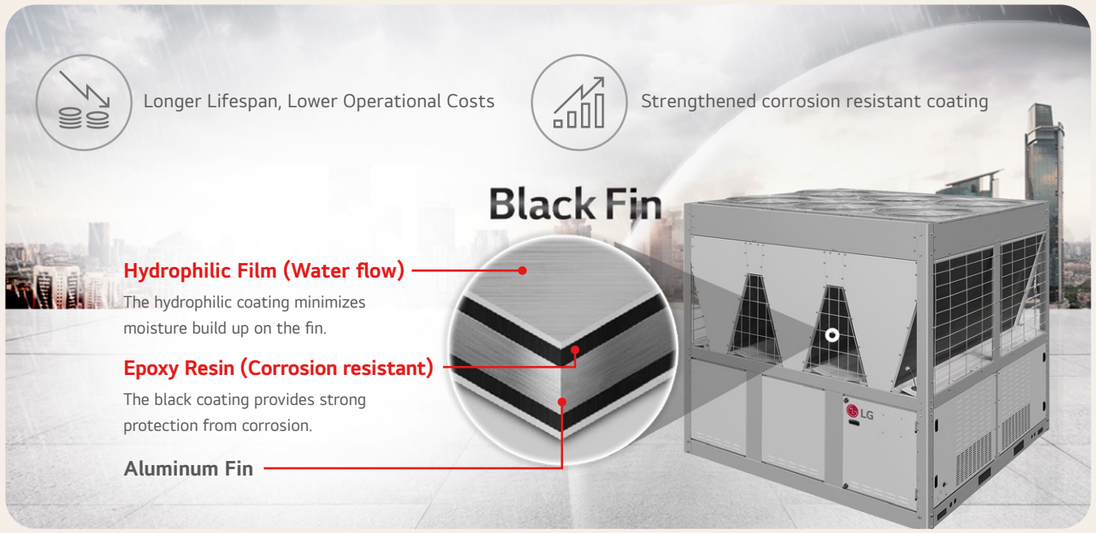


Cycle back up



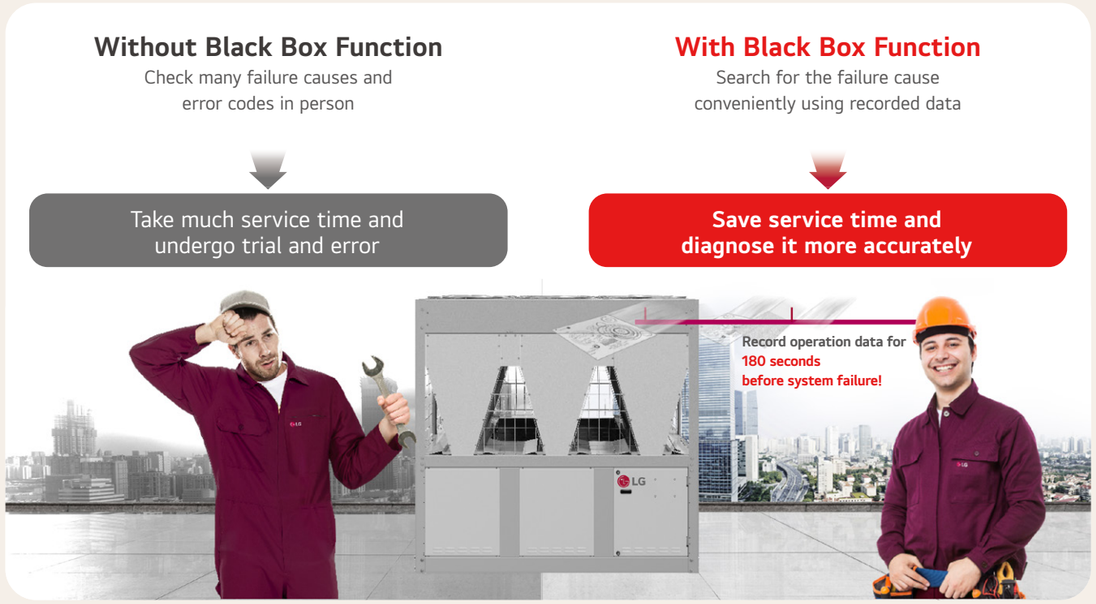
Corrosion Resistance (Black Fin)

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



Black Box Function

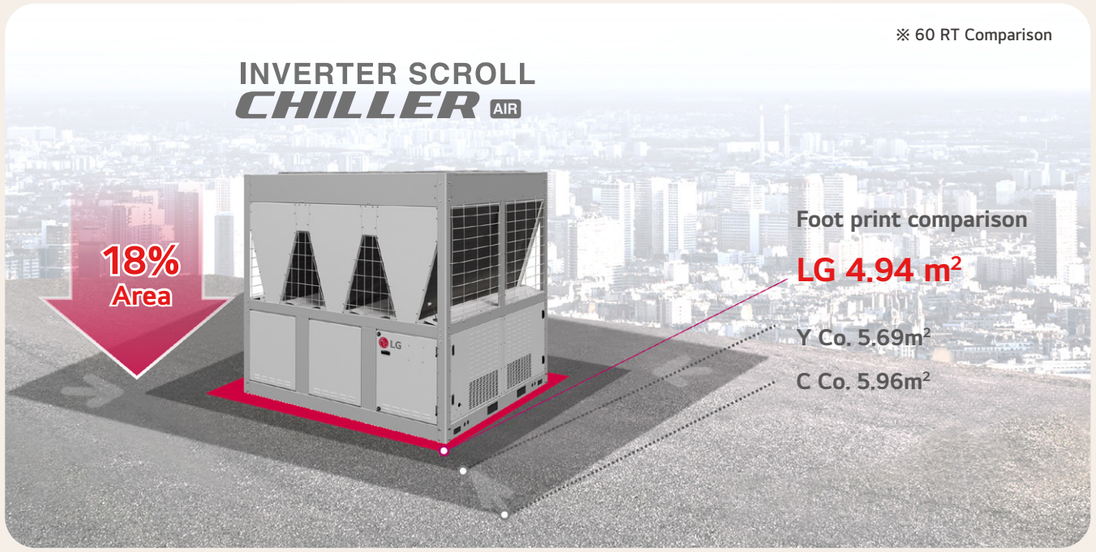
Quick service can be done because operation data can be saved for 180 seconds before system failure.



CONVENIENCE

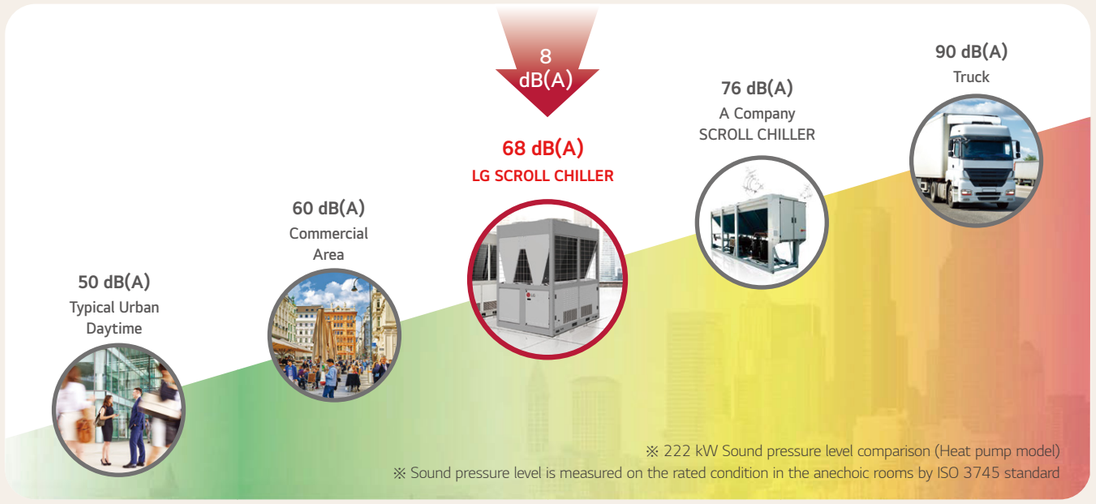
Compact Size

Compact size reduces concern about installation and service space.



Low Noise Level

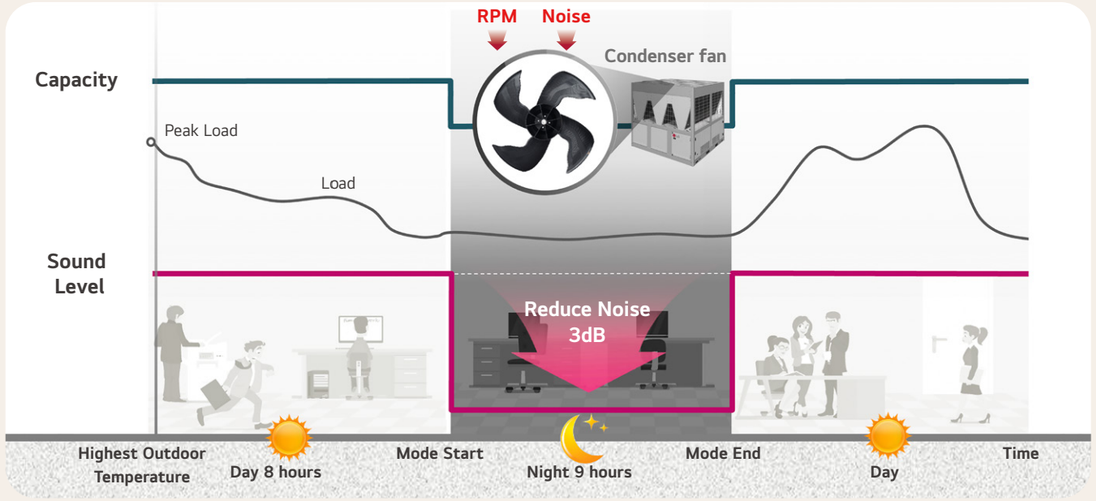
Lower noise can remove complains from noise pollution and provide a quieter environment.



※ 60 RT Sound pressure level comparison
※ Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard

Night Silent Operation

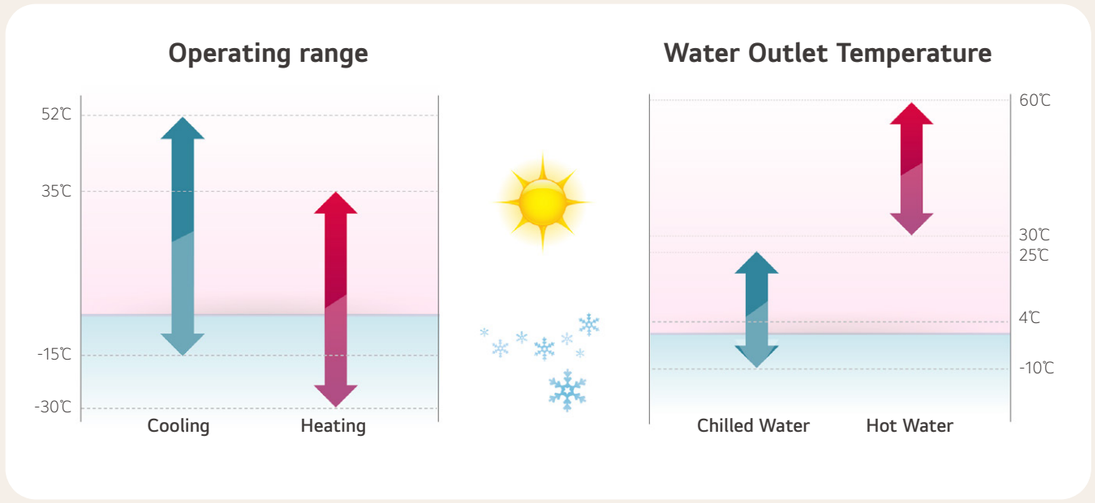
Night low noise function can reduce noise levels at night time by adjusting the fan RPM.



※ 20 RT Comparison
※ This function requires DIP switch setting. For more details, please refer to installation and owners manual.
※ Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Results may vary depending on environment.
※ If chiller RPM is changed, the cooling capacity may be reduced.

Wider Operation Range

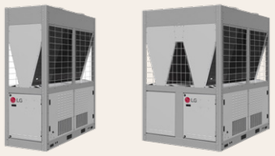
ISC R32 can supply wider range of water temperature. Chilled water temperature become -10 ~ 25℃ and hot water temperature range become 30~60℃.



* 4 ~ -10℃ : Low Temperature Function with Anti-freeze
(Ethylene Glycol : More than 30%, Propylene Glycol More than 35%)

SPECIFICATION

KCHH017LDGC / KCHH020LDGC
KCHH023LDGC / KCHH033LDGC

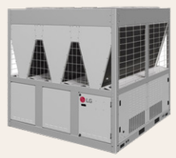


LG participates in the ECP programme for EUROVENT LCP-HP program. Check ongoing validity of certification : www.eurovent-certification.com

CATEGORY		UNITS	KCHH017LDGC	KCHH020LDGC	KCHH023LDGC	KCHH033LDGC
Power Supply	Case 1	V, Phase, Hz	380-415, 3, 50	380-415, 3, 50	380-415, 3, 50	380-415, 3, 50
	Limit Range of Voltage	V	323 ~ 477	323 ~ 477	323 ~ 477	323 ~ 477
	Case 2	V, Phase, Hz	380, 3, 60	380, 3, 60	380, 3, 60	380, 3, 60
	Limit Range of Voltage	V	342 ~ 418	342 ~ 418	342 ~ 418	342 ~ 418
Capacity	Cooling	kW	57.00	65.00	74.00	114.0
	Heating	kW	60.00	70.00	82.00	120.0
Power Input	Cooling	kW	18.39	21.67	26.43	36.77
	Heating	kW	16.67	20.00	24.12	33.33
Efficiency	Cooling	W/W	3.10	3.00	2.80	3.10
	Heating	W/W	3.60	3.50	3.40	3.60
SEER		W/W	4.70	4.55	4.40	4.70
SCOP (Average, LT)		W/W	4.45	4.45	4.45	4.45
SCOP (Average, MT)		W/W	3.25	3.25	3.25	3.25
Sound Pressure Levels (Cooling)		dB(A)	67.0	67.0	68.0	68.0
Sound Power Levels (Cooling)		dB(A)	84.0	86.0	87.0	87.0
Compressor	Type	-	Inverter Scroll	Inverter Scroll	Inverter Scroll	Inverter Scroll
	No. of Compressor	EA	2	2	2	4
	Oil Type	-	FW68L (PVE)	FW68L (PVE)	FW68L (PVE)	FW68L (PVE)
	Oil Charge	cc x No.	1,200 x 2	1,200 x 2	1,200 x 2	1,200 x 4
Refrigerant	Type	-	R32	R32	R32	R32
	Amount of Charged	kg x No.	4.7 x 2	4.7 x 2	4.7 x 2	4.7 x 4
	GWP	-	675	675	675	675
	t-CO_2eq	-	6.345	6.345	6.345	12.69
Evaporator	Type	-	Plate	Plate	Plate	Plate
	Pressure drop	kPa	18.7	21.5	28.7	18.7
	Operating Maximum pressure (Refrigerant / Water)	kg/cm²	42 / 10	42 / 10	42 / 10	42 / 10
	Water Flow Rate Standard (Cooling / Heating)	LPM	163 / 171	186 / 200	211 / 235	327 / 345
	Inlet /Outlet diameter (Water pipe)	mm	50 A / 50 A	50 A / 50 A	50 A / 50 A	65 A / 65 A
Fan motor	Type	-	BLDC	BLDC	BLDC	BLDC
	No. of Fan	EA	2	2	2	4
	No. of Vanes	EA	6	6	6	6
	Motor power	kW x No.	1.5 x 2	1.5 x 2	1.5 x 2	1.5 x 4
Weight		kg	521	521	521	972
Dimension	W	mm	765	765	765	1,528
	H	mm	2,210	2,210	2,210	2,210
	D	mm	2,154	2,154	2,154	2,154
Remote Control		-	Modbus	Modbus	Modbus	Modbus
Guaranteed Load Capacity Range		-	20% ~ 100%	20% ~ 100%	20% ~ 100%	20% ~ 100%

Note
1. Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
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 amblent conditions during operation.
4. Performances are based on the following conditions: Capacitles and inputs are based on the following conditions
   • Cooling: Outdoor air temp. 35℃, Water inlet temp. 12℃, Water Outlet temp. 7℃
   • Heating: Outdoor air temp. 7℃, Water inlet temp. 40℃, Water Outlet temp. 45℃

KCHH040LDGC / KCHH045LDGC
KCHH050LDGC / KCHH060LDGC / KCHH067LDGC



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CATEGORY		UNITS	KCHH040LDGC	KCHH045LDGC	KCHH050LDGC	KCHH060LDGC	KCHH067LDGC
Power Supply	Case 1	V, Phase, Hz	380-415, 3, 50	380-415, 3, 50	380-415, 3, 50	380-415, 3, 50	380-415, 3, 50
	Limit Range of Voltage	V	323 ~ 477	323 ~ 477	323 ~ 477	323 ~ 477	323 ~ 477
	Case 2	V, Phase, Hz	380, 3, 60	380, 3, 60	380, 3, 60	380, 3, 60	380, 3, 60
	Limit Range of Voltage	V	342 ~ 418	342 ~ 418	342 ~ 418	342 ~ 418	342 ~ 418
Capacity	Cooling	kW	130.0	148.0	171.0	195.0	222.0
	Heating	kW	140.0	164.0	180.0	210.0	246.0
Power Input	Cooling	kW	43.33	52.87	55.16	65.00	79.30
	Heating	kW	40.00	48.24	50.00	60.00	72.40
Efficiency	Cooling	W/W	3.00	2.80	3.10	3.00	2.80
	Heating	W/W	3.50	3.40	3.60	3.50	3.40
SEER		W/W	4.55	4.40	4.70	4.55	4.40
SCOP (Average, LT)		W/W	4.45	4.45	4.45	4.45	4.45
SCOP (Average, MT)		W/W	3.25	3.25	3.25	3.25	3.25
Sound Pressure Levels (Cooling)		dB(A)	68.0	68.0	68.0	68.0	68.0
Sound Power Levels (Cooling)		dB(A)	90.0	91.0	88.0	91.0	92.0
Compressor	Type	-	Inverter Scroll	Inverter Scroll	Inverter Scroll	Inverter Scroll	Inverter Scroll
	No. of Compressor	EA	4	4	6	6	6
	Oil Type	-	FW68L (PVE)	FW68L (PVE)	FW68L (PVE)	FW68L (PVE)	FW68L (PVE)
	Oil Charge	cc x No.	1,200 x 4	1,200 x 4	1,200 x 6	1,200 x 6	1,200 x 6
Refrigerant	Type	-	R32	R32	R32	R32	R32
	Amount of Charged	kg x No.	4.7 x 4	4.7 x 4	4.7 x 6	4.7 x 6	4.7 x 6
	GWP	-	675	675	675	675	675
	t-CO_2eq	-	12.69	12.69	19.035	19.035	19.035
Evaporator	Type	-	Plate	Plate	Plate	Plate	Plate
	Pressure drop	kPa	21.5	28.7	18.7	21.5	28.7
	Operating Maximum pressure (Refrigerant / Water)	kg/cm²	42 / 10	42 / 10	42 / 10	42 / 10	42 / 10
	Water Flow Rate Standard (Cooling / Heating)	LPM	372 / 400	411 / 470	491 / 518	558 / 600	617 / 705
	Inlet /Outlet diameter (Water pipe)	mm	65 A / 65 A	65 A / 65 A	65 A / 65 A	65 A / 65 A	65 A / 65 A
Fan motor	Type	-	BLDC	BLDC	BLDC	BLDC	BLDC
	No. of Fan	EA	4	4	6	6	6
	No. of Vanes	EA	6	6	6	6	6
	Motor power	kW x No.	1.5 x 4	1.5 x 4	1.5x 6	1.5x 6	1.5x 6
Weight		kg	972	972	1,422	1,422	1,422
Dimension	W	mm	1,528	1,528	2,291	2,291	2,291
	H	mm	2,210	2,210	2,210	2,210	2,210
	D	mm	2,154	2,154	2,154	2,154	2,154
Remote Control		-	Modbus	Modbus	Modbus	Modbus	Modbus
Guaranteed Load Capacity Range		-	20% ~ 100%	20% ~ 100%	20% ~ 100%	20% ~ 100%	20% ~ 100%

Note
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4. Performances are based on the following conditions: Capacitles and inputs are based on the following conditions
   • Cooling: Outdoor air temp. 35℃, Water inlet temp. 12℃, Water Outlet temp. 7℃
   • Heating: Outdoor air temp. 7℃, Water inlet temp. 40℃, Water Outlet temp. 45℃