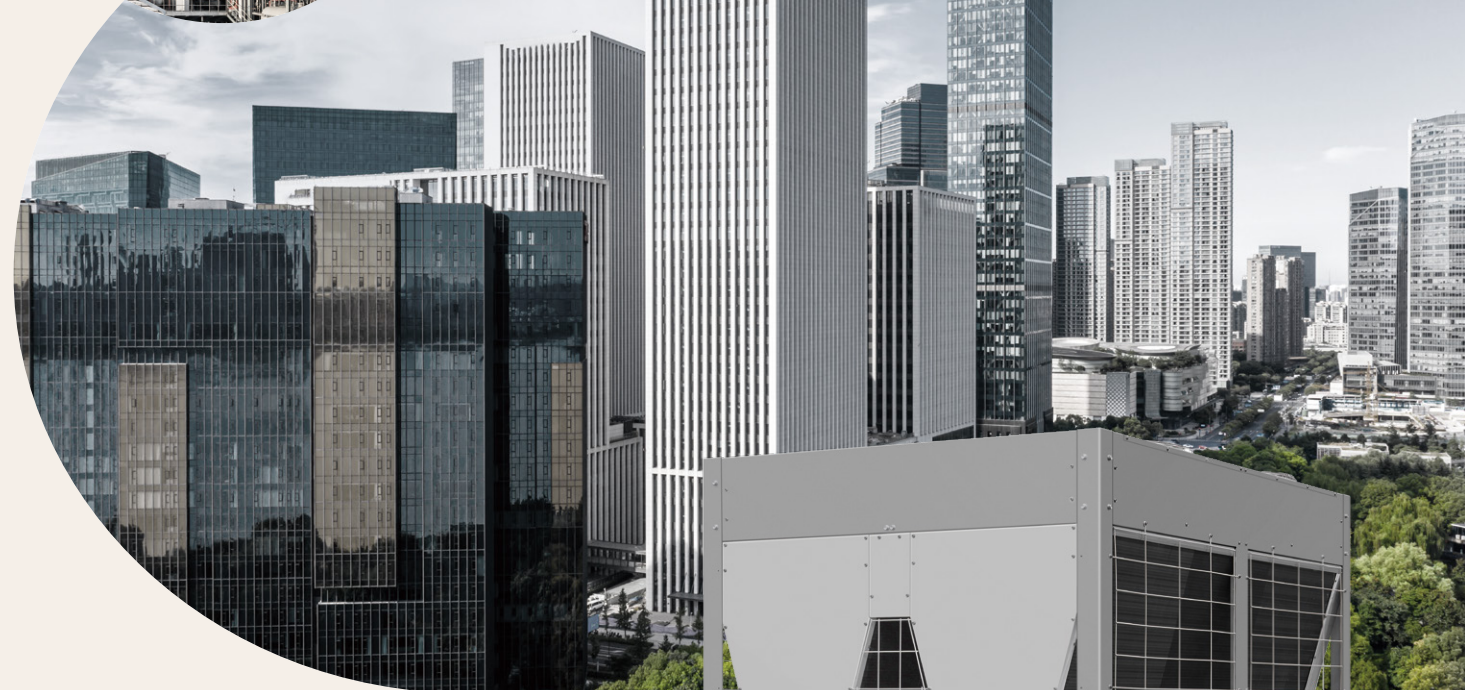
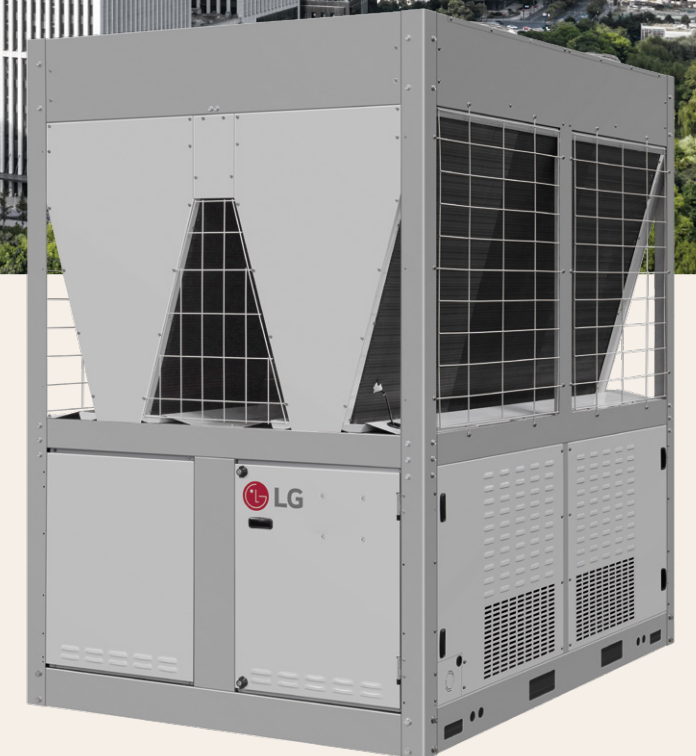




# INVERTER SCROLL *CHILLER* AIR



# WHY LG INVERTER SCROLL CHILLER

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

## ① Inverter technologies of LG EHP\*

- Twin All-Inverter and HiPOR™\*\*

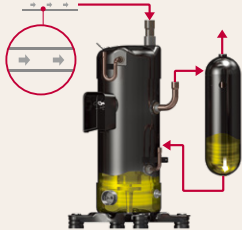
### Twin All-Inverter



- Improved partial load operation\*\*\*  
Wide operation  
Frequency range 30 ~ 120 Hz

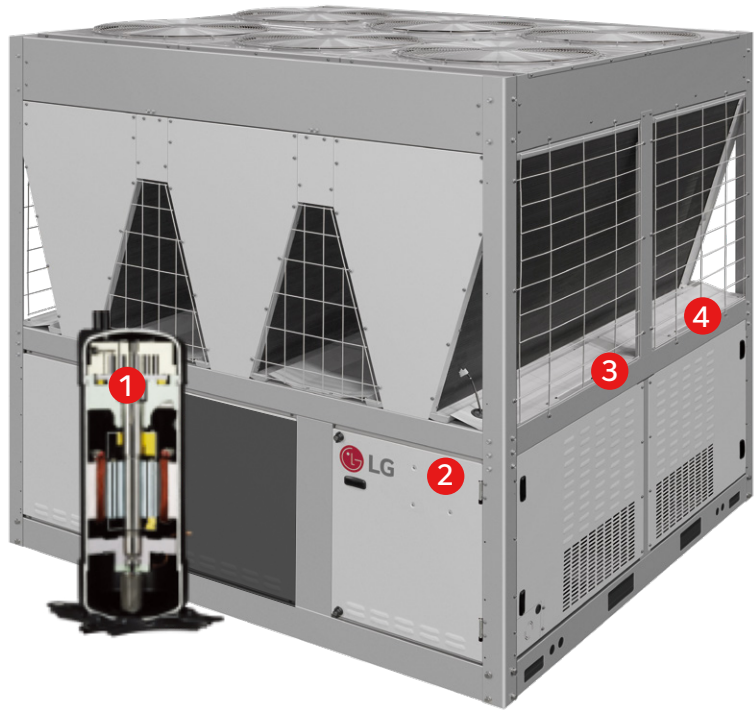
\* EHP : Electric Heat Pump  
\*\* HiPOR™ : High Pressure Oil Return  
\*\*\* : Compared to constant speed scroll compressor

### 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



## ② Refrigerant-cooling heatsink

- Removes more heat from inverter PCB of Control box\*
- Applied to MULTI V cycle component

\* : Compared to Fan-cooling heat sink method

## ③ Eco-friendly R32 refrigerant

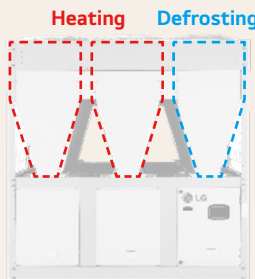
- Zero ODP\* & low GWP\*\* (1/3rd of R-410A)

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



## ④ Continuous heating operation

- Continue heating when defrosting



## Residential Buildings / Hotel



## Office / School



## Factory / Swimming Pool

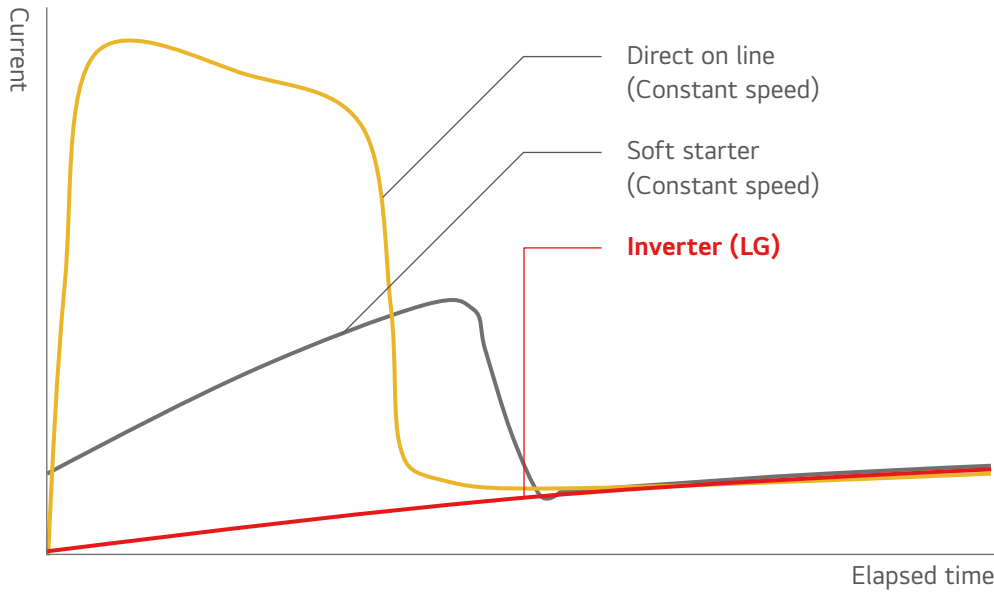


# HIGH EFFICIENT INVERTER TECHNOLOGIES

## 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 <sub>s</sub> / 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 control.

### All-Inverter System\*

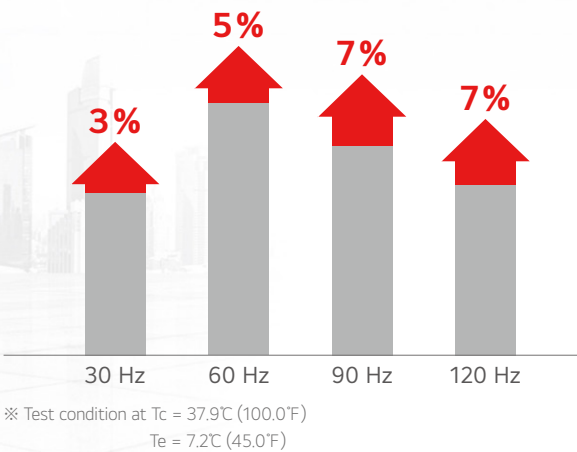
Wide operation frequency range 30 ~ 120 Hz



\* : Compressor and fan : Inverter  
\*\* : ACHH Series

### Compressor Performance

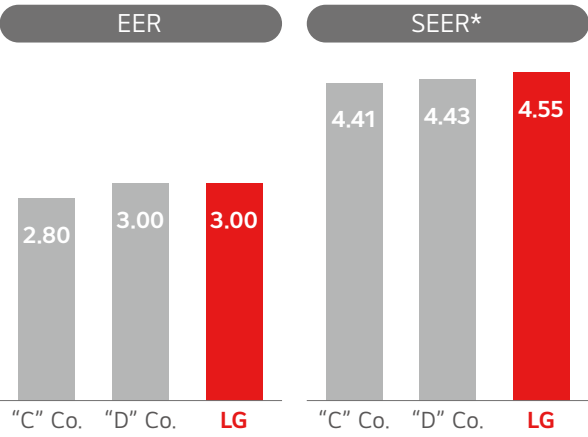
Compared to previous model\*\*, compressor has higher capacity by Hz.



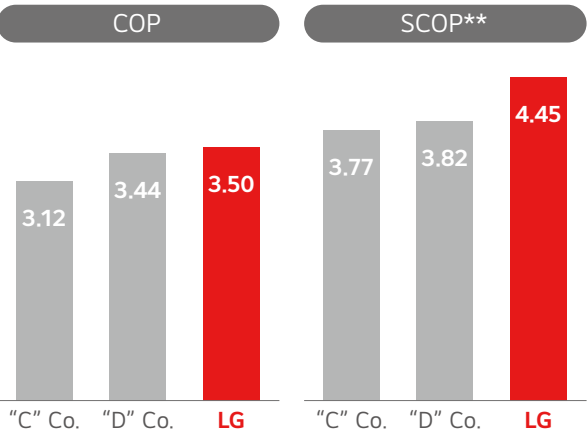
## High Energy Efficiency

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

### Cooling Efficiency



### Heating Performance

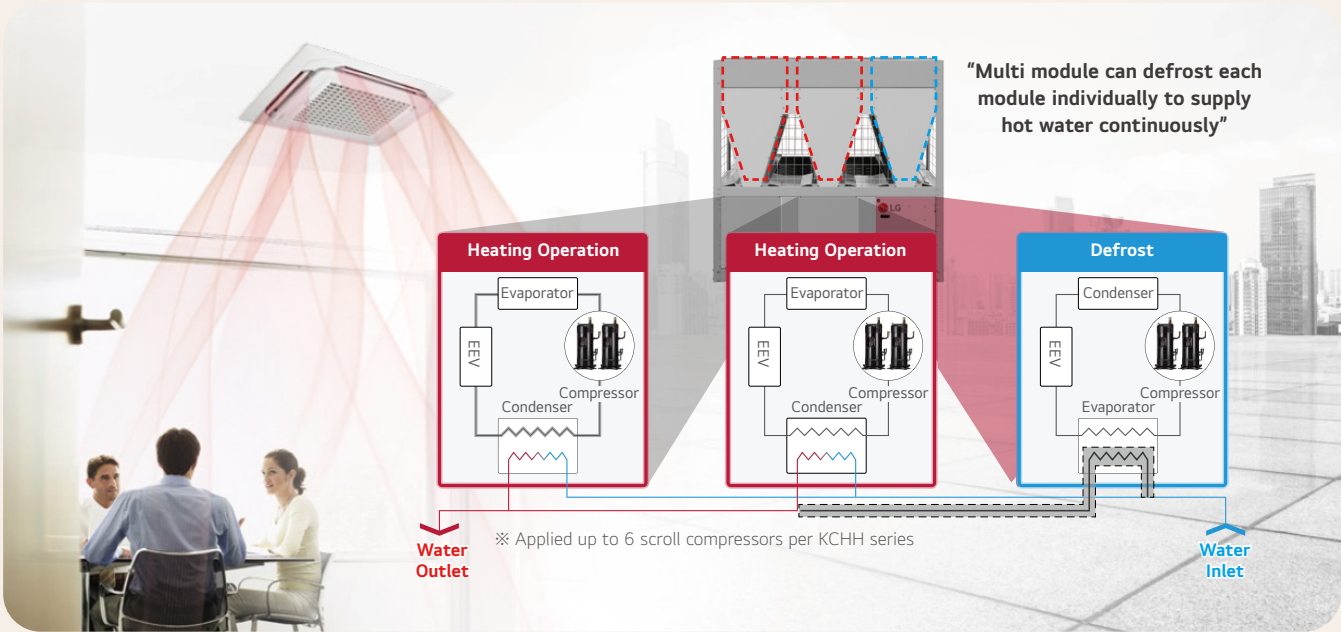


※ KCHH060LDGC model comparison  
\* SEER : Seasonal energy efficiency ratio  
\*\* SCOP : Seasonal coefficient of performance (Average, LT)

# RELIABILITY & STABILITY

## Continuous Heating Operation

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



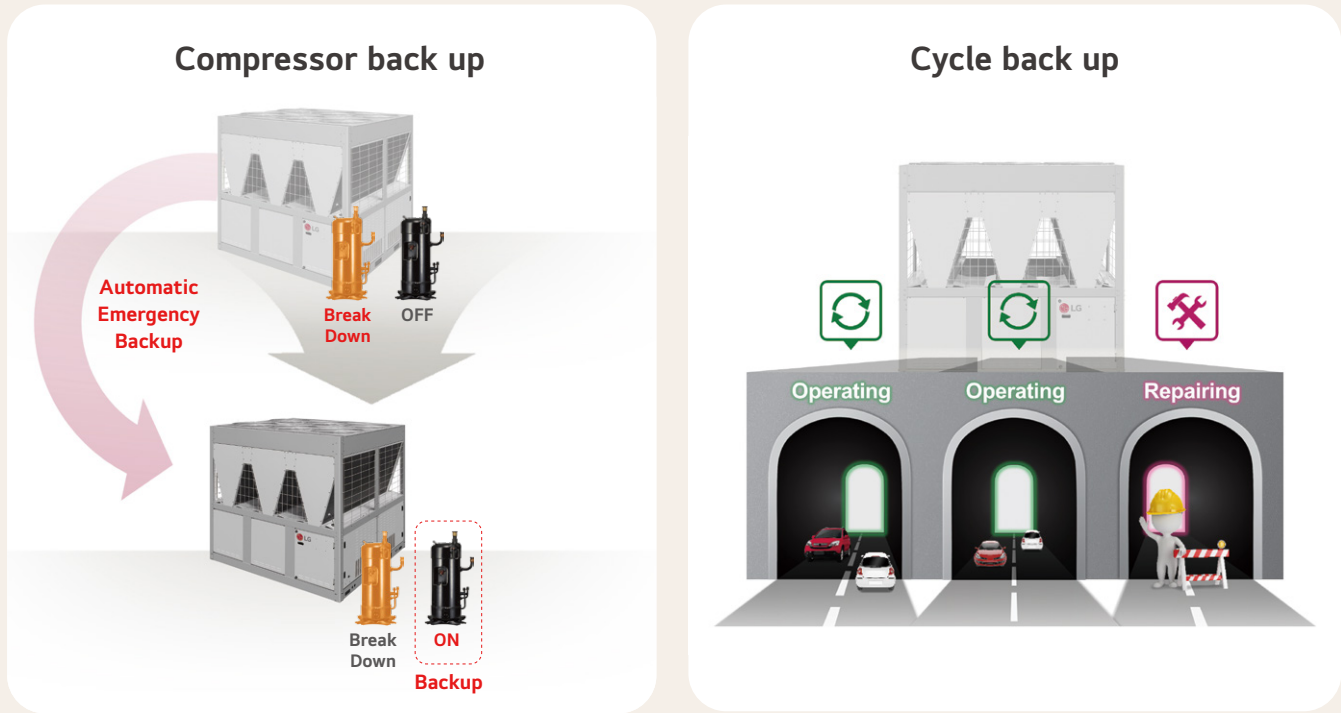
## Corrosion Resistance (Black Fin)

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



## 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.



## Black Box Function

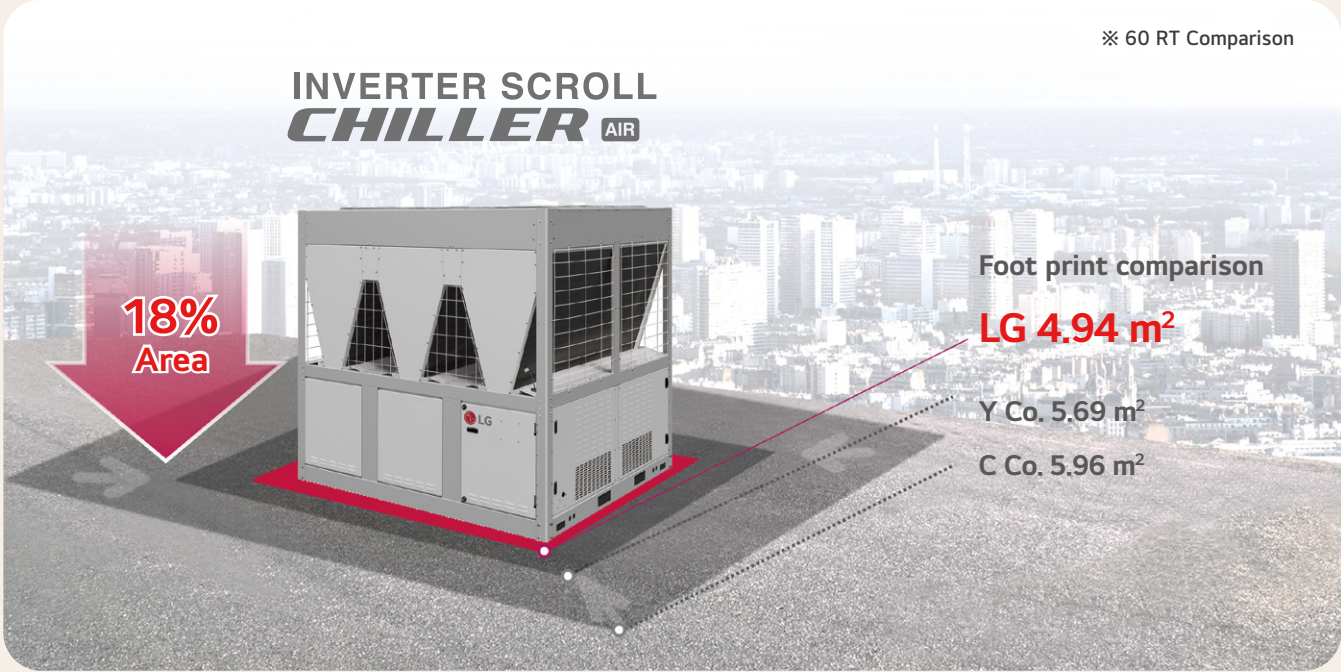
Quick service can be done because operation data can be saved for 180 seconds before system failure.



# 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.



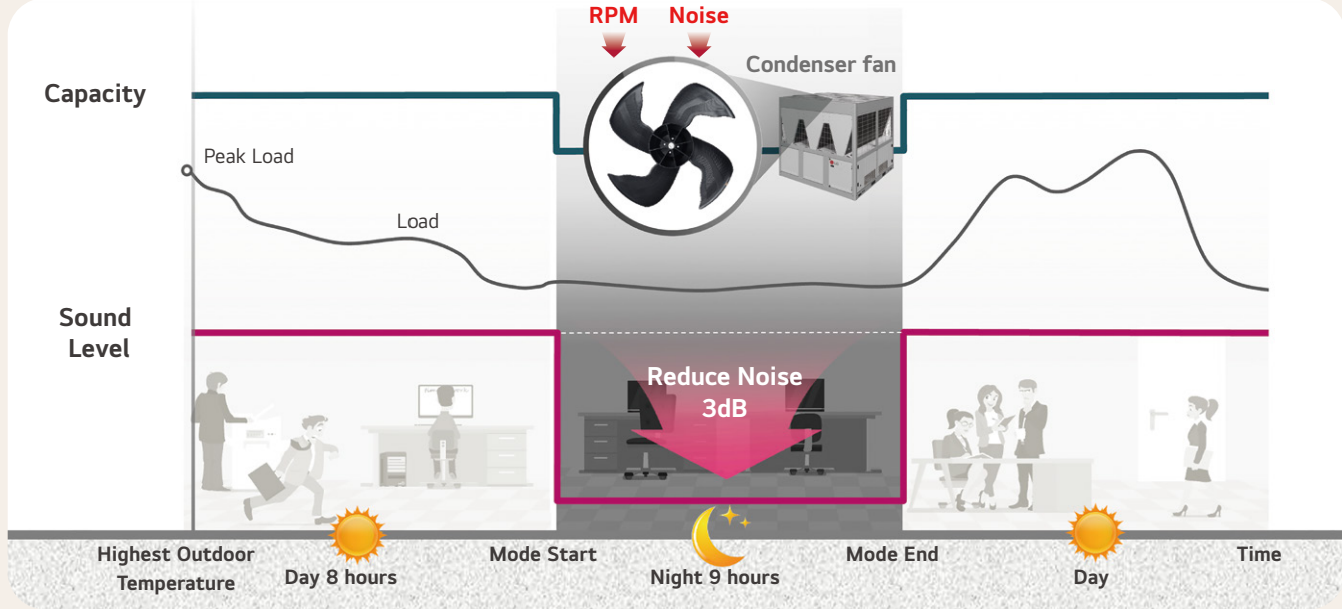
※ 222 kW Sound pressure level comparison (Heat pump model)

※ 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.



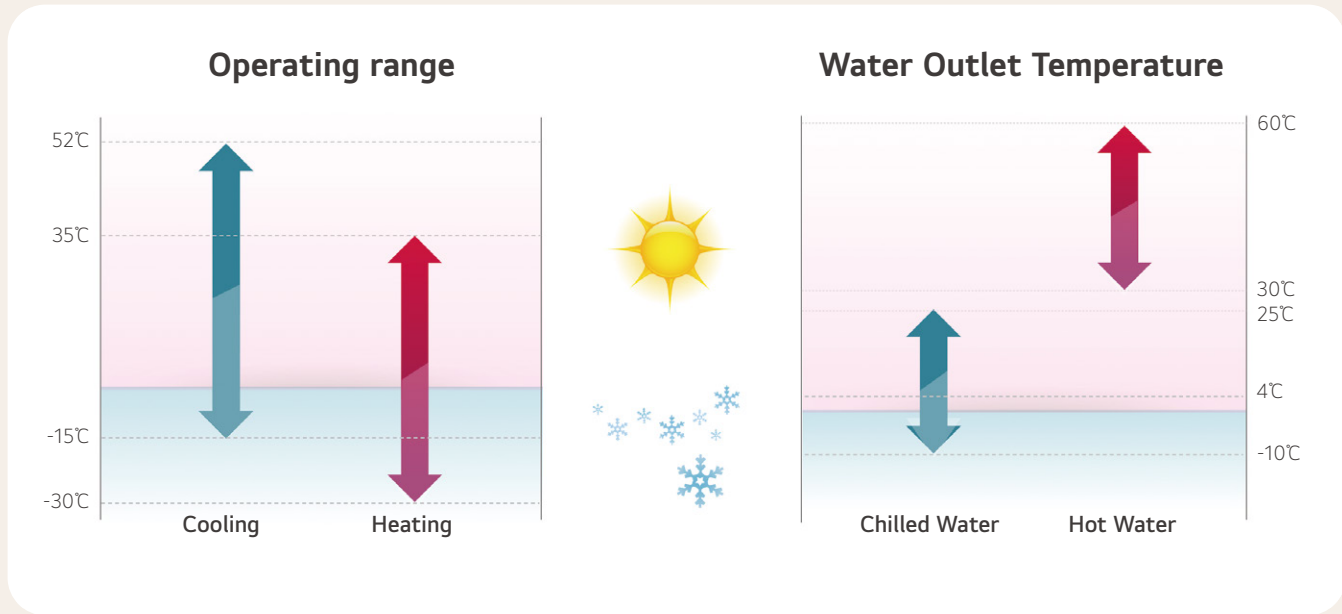
※ This function requires DIP switch setting. For more details, please refer to installation and owners manual.

※ 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°C and hot water temperature range become 30 ~ 60°C.



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

SPECIFICATION

KCHH017LDGC / KCHH020LDGC  
KCHH023LDGC / KCHH033LDGC

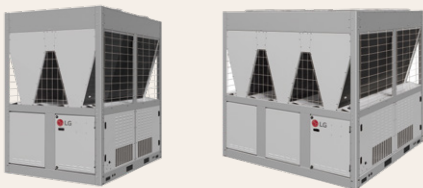


LG participates in the ECP programme for EUROVENT LCP-HP program. Check ongoing validity of certification : [www.eurovent-certification.com](http://www.eurovent-certification.com)

| 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 <sub>2</sub> eq                             | -                  | 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/cm <sup>2</sup> | 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
- Due to our policy of innovation some specifications may be changed without notification.
  - 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.
  - 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.
  - Performances are based on the following conditions: Capacities 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



LG participates in the ECP programme for EUROVENT LCP-HP program. Check ongoing validity of certification : [www.eurovent-certification.com](http://www.eurovent-certification.com)

| 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 <sub>2</sub> eq                             | -                  | 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/cm <sup>2</sup> | 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%      |

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  - 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.
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    - Heating: Outdoor air temp. 7℃, Water inlet temp. 40℃, Water Outlet temp. 45℃