

# LG

# ERV

Energy Recovery Ventilator  
0CEE0-01J(Replaces 0CEE0-01H)

# TOTAL HVAC SOLUTION PROVIDER

## ENGINEERING PRODUCT DATA BOOK

**ERV**

Residential Ventilation Unit

**General information**

**Product Data**

**ERV**


Residential Ventilation Unit

## **General information**

**1. Model Line-up**

**2. Nomenclature**

# 1. Model Line-up

Power Supply (Phase, V, Hz)	Model Name	Nominal Capacity (CMH)	Appearance
<p>1Φ 220-240V 50/60Hz</p>	<p>LZ-H015GBA6 LZ-H020GBA6</p>	<p>150 200</p>	

## 2. Nomenclature

<b>Model Name</b>	<b>LZ</b>	<b>H</b>	<b>015</b>	<b>G</b>	<b>B</b>	<b>A</b>	<b>6</b>
No.	1	2	3	4	5	6	7

No.	Signification
1	<b>Indicates that this is LG's ventilation system</b>
2	<b>Heat Exchange Type</b> H : Total Heat Recovery
3	<b>Capacity</b> EX) 015 : 150 CMH, 020: 200 CMH
4	<b>Electric standard (Volts, Freq., Phase)</b> G : 220-240V, 50/60Hz, 1Ø
5	<b>Model Type</b> B : Ceiling Concealed Type
6	<b>Function</b> A : Basic
7	<b>Development Sequence</b>

# **ERV**

## **Residential Ventilation Unit**

### **Product Data**

- 1.List of Functions**
- 2.Specifications**
- 3.Operation Range**
- 4.Dimensions**
- 5.Wiring Diagrams**
- 6.Electrical Characteristics**
- 7.P-Q Curve**
- 8.Characteristic Curve**
- 9.External Static Pressure(E.S.P)**
- 10.Sound Pressure Level**

# 1. List of Functions

## ◆ Basic functions of Indoor Unit

Category	Function	LZ-H015GBA6 LZ-H020GBA6
Ventilation	Bypass Operation	O
	Heat Exchange Mode	O
	Seasonal Auto Operation	O
	Airflow steps by Ventilation Mode (Heat Exchange/Bypass/Auto)	3 / 3 / 3
	Airflow steps by Air conditioning Mode (Cooling/Heating/Auto)	- / - / -
Air Purification	Pre-Filter	O
	Fine Dust Filter	O
	UVnano	O
	Humidification	X
Reliability	Self Diagnosis	O
	Hot start	X
Convenience	CO <sub>2</sub> fan control	O
	CO <sub>2</sub> level display (Remote controller)	O
	CO <sub>2</sub> level monitoring (Central controller)	O
	Fine dust level display (Outdoor/Indoor)	O
	Fast ventilation	O
	Filter Check Alarm	O
	Energy saving ventilation operation	O
	Auto Restart	O
	Child Lock	O
	Forced Operation	O
	Sleep Timer	O
	Turn On/Off Reservation	O
Schedule	O	
Interlocking air conditioner	Night Time Free Cooling	O
	Auto operation mode interlocking air conditioner	O
	Fast cleaning indoor air operation	O
	Air conditioner / ventilator control by single wired remote controller	O
	Delayed Operation (Delay time setting function)	O
	Interlock operation during IDU defrost	O
Installation	Group Control	O
	E.S.P Setting	O
	Test Function	O
	OA,EA Motorizes Damper Control	O
	Change OUTDOOR AIR / RETURN AIR SIDE	X
Special Functions	Wi-Fi Control	Accessory
	Central Control (LGAP)	O

**Note**

1. O : Applied, X : Not applied

Accessory : Ordered and purchased separately the accessory package referring to the model name provided and install at field.  
Accessory line-ups varies by region, so check your local catalogue or local sales material.

2. Some functions can be limited by remote controller, please refer to the remote control manual.

# 1. List of Functions

## ◆ Network Solution Accessory List

TYPE	Product Name	Model	LZ-H015GBA6 LZ-H020GBA6
Wired Remote Controller	Standard II (White)	PREMTB001	O
	Standard II (Black)	PREMTBB01	O
	Standard III (White)	PREMTB101	O
	Standard III (Black)	PREMTBB11	O
	Premium (English/Portuguese/Spanish/French)	PREMTA000	O
	Premium (English/Italian/Russian/Chinese)	PREMTA000A	O
	Premium (English/German/Polish/Czech)	PREMTA000B	O
	Deluxe	PREMTA200	X
	Deluxe	PREMTA201	X
Dry Contact	Simple (1 Input) Dry Contact	PDRYCB000	O
	Simple (1 Input) Dry Contact	PDRYCB100	O
	Dry Contact for Modbus (WITH CASE)	PDRYCB500	X
	Dry Contact for Modbus (WITHOUT CASE)	PDRYCB510	O
Gateway	PI485 (WITHOUT CASE)	PNF-P14A0C	X
		PHNFP14A0	O
	PI485 (WITH CASE)	PNF-P14A0R	X
		PSNFP14A0	X
	Modbus RTU	PMBUSB00A	O
Central Controller	Simple AC Ez	PQCSZ250S0	O
		PCS-Z150S0	X
	AC Ez Touch	PACEZA000	O
		PACEZB000	X
	AC Smart 5	PACS5A000	O
	ACP 5	PACP5A000	O
	AC Manager 5	PACM5A000	O
Accessory	Group control wire (0.25m)	PZCWRCG3	O
		PCW-QG00A	X
	Extension Wire (10m)	PZCWRC1	O
		PCW-QE10A	X
	Wi-Fi Modem	PWFMD200	O
	Independent Power Module	PRIP0	X
	Refrigerant Leakage Detection (R410A)	PRLDNVS0	X
	CO2 Sensor	AHCS100H0	Embedded
	Fine Dust Filter (ISO ePM1 75% (F7 Filter))	AHFT100H0	X
		AHFT035H0 (250CMH)	X
		AHFT050H0 (350, 500CMH)	X
		AHFT100H1 (800, 1000, 1500, 2000CMH)	X

**Note**

1. O: Possible, X: Impossible, - : Not applicable, Embedded : Included with product.
2. If you need more detail, please refer to the **BECON** PDB or the manual of product. (<http://partner.lge.com> > Select Your Region : Home> Doc.Library> Product > Control(BECON))

## 2. Specifications

Model			LZ-H015GBA6	LZ-H020GBA6
Power Supply		Ø, V, Hz	1, 220-240, 50/60	1, 220-240, 50/60
ERV Mode	Step	-	SH / H / L	SH / H / L
	Current	A	0.43 / 0.38 / 0.23	0.59 / 0.51 / 0.26
	Power Input	W	56 / 49 / 26	79 / 71 / 30
	Air Flow	CMH	150 / 150 / 80	200 / 200 / 100
	External Static Pressure	Pa	100 / 70 / 50	100 / 70 / 50
	Temperature Exchange Efficiency (Heating)(ErP)	%	85	82
	Temperature Exchange Efficiency (Heating)(JIS)	%	80 / 80 / 84	78 / 78 / 82
	Temperature Exchange Efficiency (Cooling)(JIS)	%	74 / 74 / 83	70 / 70 / 81
	Enthalpy Exchange Efficiency (Heating)(JIS)	%	79 / 79 / 83	75 / 75 / 81
	Enthalpy Exchange Efficiency (Cooling)(JIS)	%	74 / 74 / 80	68 / 68 / 76
	Sound Power Level	dB(A)	53 / 51 / 45	55 / 53 / 46
Sound Pressure Level	dB(A)	28 / 26 / 21	30 / 28 / 22	
Bypass Mode	Current	A	0.45 / 0.40 / 0.26	0.60 / 0.52 / 0.29
	Power Input	W	63 / 53 / 31	84 / 73 / 35
	Air Flow	CMH	150 / 150 / 80	200 / 200 / 100
	External Static Pressure	Pa	100 / 70 / 50	100 / 70 / 50
Operation Range	Outdoor Air Temperature / Relative Humidity	℃ / %	-10 ~ 40 / 20 ~ 80	-10 ~ 40 / 20 ~ 80
Dimension	W x H x D	mm	640 x 320 x 640	640 x 320 x 640
Net Weight		kg	23	23
Duct work	Size (Ø)	mm	125	125
	Qty	EA	4	4
Fan Motor	Supply Air Fan	RPM	1,850 / 1,710 / 1,300	2,050 / 1,910 / 1,400
	Exhaust Air Fan	RPM	1,750 / 1,600 / 1,250	1,910 / 1,770 / 1,320
	Max.	RPM	2,100	2,100
	Min.	RPM	1,000	1,000
Filter	Grade <sup>(1)</sup>	-	ePM <sub>1</sub> 95%	ePM <sub>1</sub> 95%
	Size(W x H x D)	mm	278 x 276 x 50	278 x 276 x 50

**Note**

1. Due to our policy of innovation some specifications may be changed without notification.
2. ERV mode: Total Heat Recovery Ventilation mode
3. Sound Level Values are measured at Noise Measuring chamber accordance with standard. Therefore, these values depend on the ambient conditions and values are normally higher in actual operation.  
The Sound pressure level at the air discharge port is about 8dB(A) higher than the unit's operating sound.
4. Temperature and Enthalpy Exchange Efficiency are based on the following conditions.  
Temperature Exchange Efficiency is tested at ErP heating condition.
  - Heating : Indoor Ambient Temp. 20°CDB / 12°CWB, Outdoor Ambient Temp. 7°CDB
 Temperature and Enthalpy Exchange Efficiency is tested at JIS heating and cooling conditions.
  - Cooling : Indoor Ambient Temp. 26.5°CDB / 64.5%RH, Outdoor Ambient Temp. 34.5°CDB / 75%RH
  - Heating : Indoor Ambient Temp. 20.5°CDB / 59.5%RH, Outdoor Ambient Temp. 5°CDB / 65%RH
5. (1) : ISO 16890

### 3. Operation Range

#### ■ Operation Range and details by temperature range

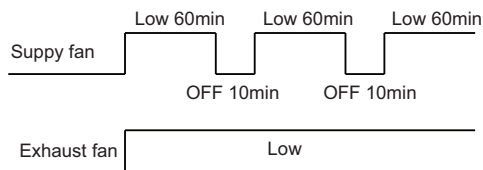
Operation range of ERV model is in the below table.

Operation Range			Operative	Normal Operation Range				Operative	
Outdoor Air Temperature			-10℃ ↓	-10℃ ~ 0℃	0℃ ~ 8℃	8℃ ~ 40℃	40℃ ~ 45℃	45℃ ↑	
Ventilation Mode			ERV	ERV	ERV	Set Operation Mode	ERV	ERV	
Fan Operation	Dip SW 5 Off (Default)	Exhaust	Low	Low	Set Air Flow Step	Set Air Flow Step	Intermittent*	Low	
		Supply	OFF	Low	Set Air Flow Step	Set Air Flow Step	Intermittent*	OFF	
	Dip SW 5 On	Exhaust	OFF	Low	Set Air Flow Step	Set Air Flow Step	Intermittent*	OFF	
		Supply	OFF	Low	Set Air Flow Step	Set Air Flow Step	Intermittent*	OFF	

**Note**

- Because there is a hysteresis range(2℃), the real temperature point at which the ventilation and fan operation mode changes could be different with this table.
- ERV ventilation : Energy(Total Heat) Recovery Mode  
It is the mode of ventilation with both supply/discharge through the total heat exchanger. It is adequate to use when the indoor/outdoor temperature difference is big.
- Bypass ventilation : General Ventilation Mode.  
It is the ventilation where the exhausted air is ventilated without going through the total heat exchanger. (Ventilation : O, Energy Recovery : X)  
It is adequate to use when the indoor contamination is severe.

**\* Intermittent Operation Control (Fan operation)**



# 4. Dimensions

## ◆ LZ-H015GBA6, LZ-H020GBA6

[Unit: mm]  
 Chassis code : ZR1  
 DWG No : TBX35786701\_Rev.02

Outdoor, side duct gradient 1/30 more.  
 (Prevention of rainwater penetration.)

3D VIEW

SA and RA side, installation of Flexible sound absorption ducts is recommended.  
 OA and EA side, Recommend adhesive insulator (PET10mm more).

**Note for PDB of indoor unit**

**Note**

- Unit should be installed in compliance with the installation manual in the product box.
- Unit should be grounded in accordance with the local regulations or applicable national codes.
- All electrical components and materials to be supplied from the site must comply with the local regulations or international codes.

**Symbols**

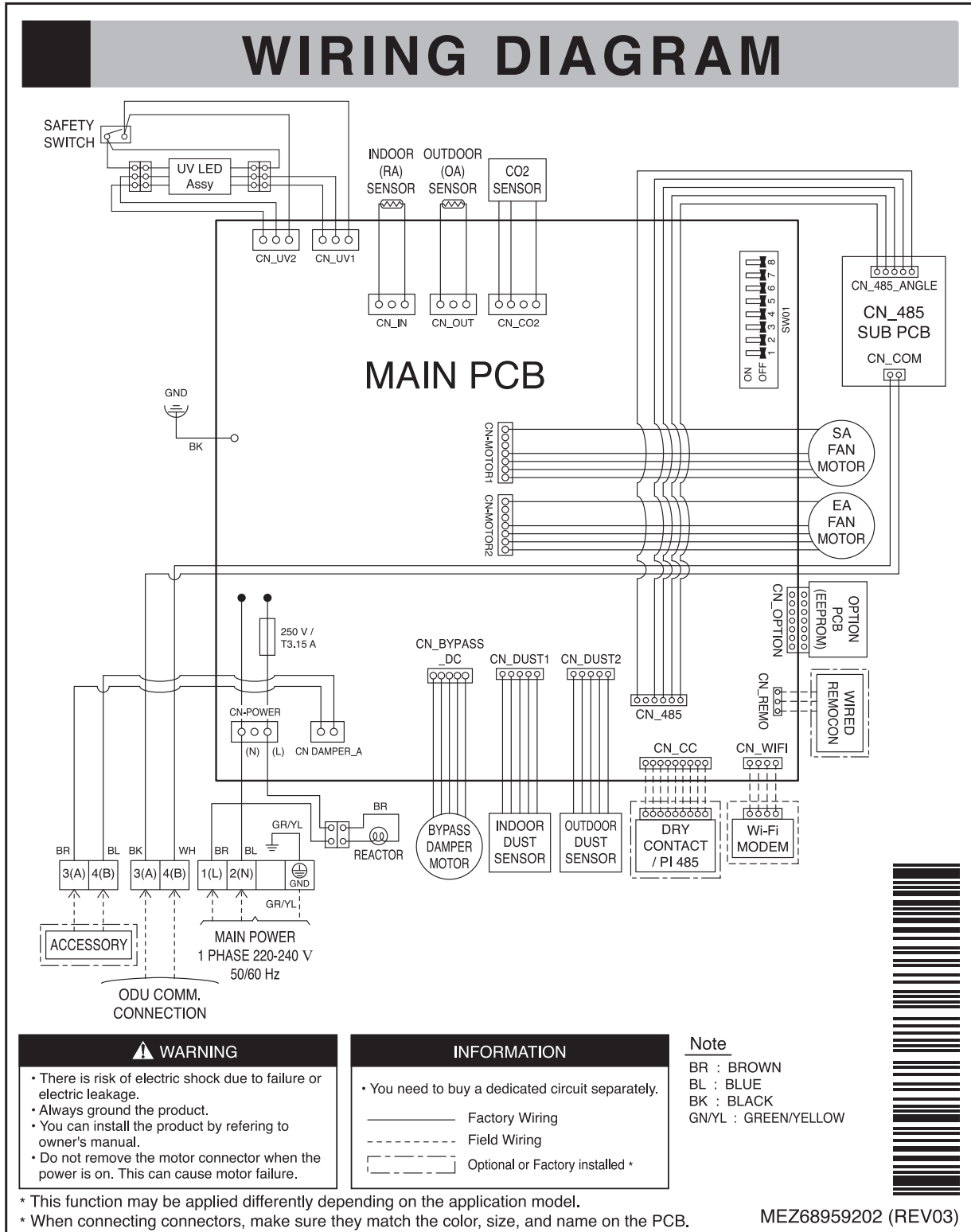
↑ Air flow Direction

⊕ Gravity Point

7	Bolt, Customized	Bolt for removing door	
6	Case Assembly, Indoor	C/Box	
5	EAI Ø 125-150/200CMH, Ø 150-250/300CMH)	Exhaust Air	
4	OAI Ø 125-150/200CMH, Ø 150-250/300CMH)	Outdoor Air	
3	SAI Ø 125-150/200CMH, Ø 150-250/300CMH)	Supply Air	
2	RAI Ø 125-150/200CMH, Ø 150-250/300CMH)	Return Air	
1	Door Assembly	Maintenance Door	
No.	Part Name		Description

# 5. Wiring Diagrams

## ◆ LZ-H015GBA6, LZ-H020GBA6



## 6. Electrical Characteristics

Model	Units				Power Supply		IFM		PI	
	Type	Hz	Volts	Voltage Range	MCA	MFA	kW	FLA	ERV	Bypass
LZ-H015GBA6	ZR1	50/60	220-240	Max. : 264 Min. : 198	0.24	15	0.03	0.19	56	63
LZ-H020GBA6					0.24	15	0.03	0.19	79	84

### Symbols

**MCA** : Minimum Circuit Amperes (A)

**kW** : Fan Motor Rated Output (kW)

**FLA** : Full Load Amperes (A)

**IFM** : Indoor Fan Motor

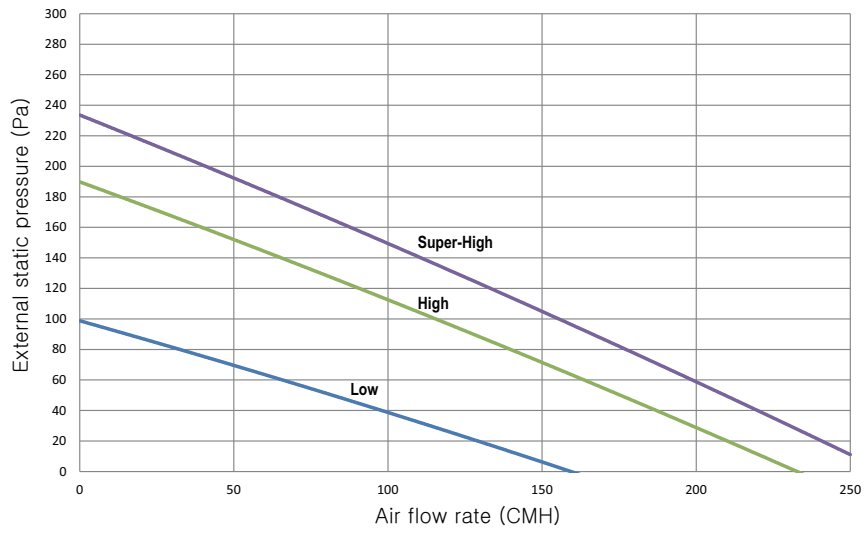
**PI** : Maximum Power Input (W)

### Note

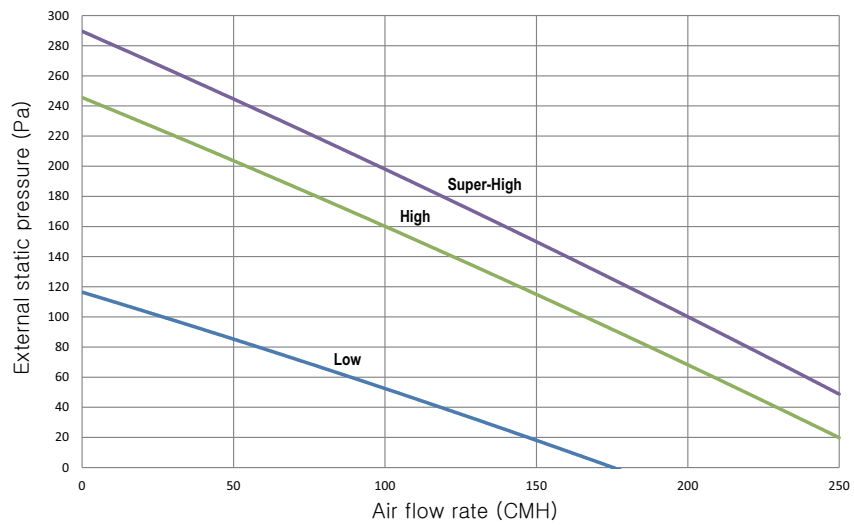
- Voltage range  
Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above the listed range limits.
- Maximum allowable voltage unbalance between phases is 2%.
- MFA/MCA  
MFA = 1.25 x FLA, MCA = MFA / 1.1  
(If MFA is smaller than minimum standard value, Use minimum standard value in region for selecting circuit breaker.)
- Select wire size based on the MCA
- Instead of fuse, use Circuit Breaker.

# 7. P-Q Curve

## ■ LZ-H015GBA6

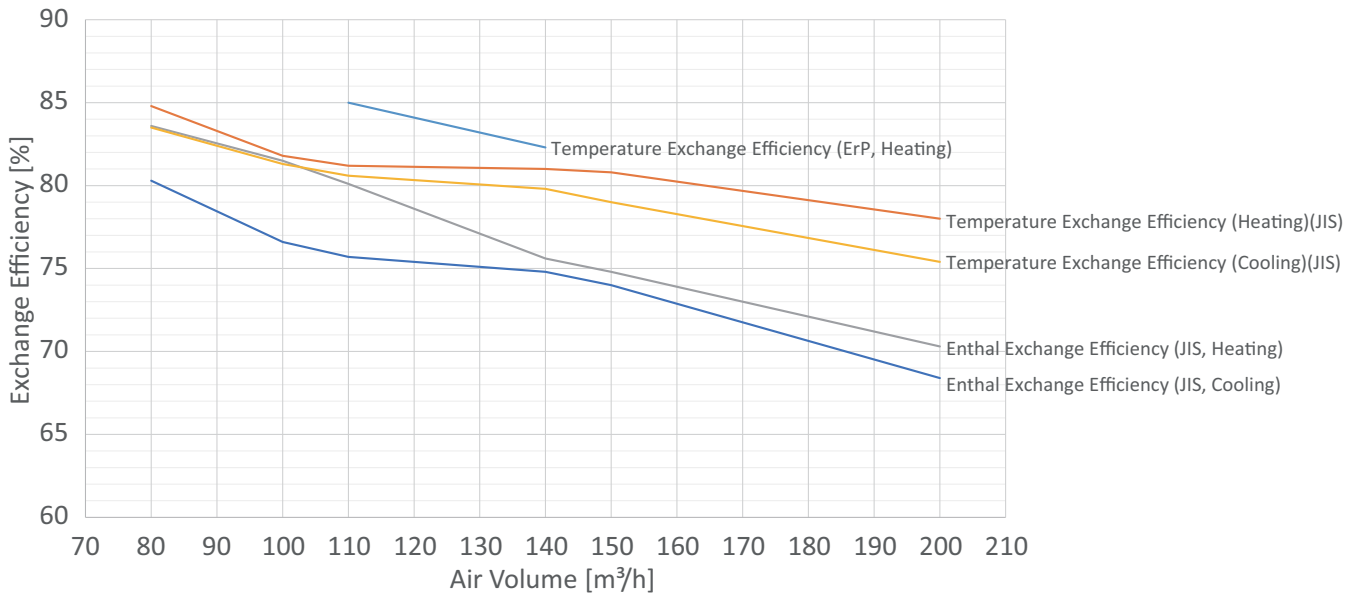


## ■ LZ-H020GBA6



## 8. Characteristic Curve

### ◆ LZ-H015GBA6, LZ-H020GBA6



	80	100	110	140	150	200
Temperature Exchange Efficiency (ErP, Heating)	-	-	85.0	82.3	-	-
Temperature Exchange Efficiency (Heating)(JIS)	84.8	81.8	81.2	81.0	80.8	78.0
Temperature Exchange Efficiency (Cooling)(JIS)	83.6	81.5	80.1	75.6	74.8	70.3
Enthal Exchange Efficiency (JIS, Heating)	83.5	81.3	80.6	79.8	79.0	75.4
Enthal Exchange Efficiency (JIS, Cooling)	80.3	76.6	75.7	74.8	74.0	68.4

## 9. External Static Pressure(E.S.P)

### ■ LZ-H015GBA6

Setting Mode [CMH]	External Static Pressure Pa (in.wg)											
	0 (0.0)		30 (0.1)		50 (0.2)		70 (0.3)		100 (0.4)		150 (0.6)	
	RPM											
	SA	EA	SA	EA	SA	EA	SA	EA	SA	EA	SA	EA
Super High [150]	1,340	1,200	1,510	1,380	1,610	1,490	1,710	1,600	1,850	1,750	2,090	2,000
High [150]	1,340	1,200	1,510	1,380	1,610	1,490	1,710	1,600	1,850	1,750	2,090	2,000
Low [80]	1,000	1,000	1,160	1,110	1,300	1,250	1,410	1,370	1,590	1,550	1,850	1,790

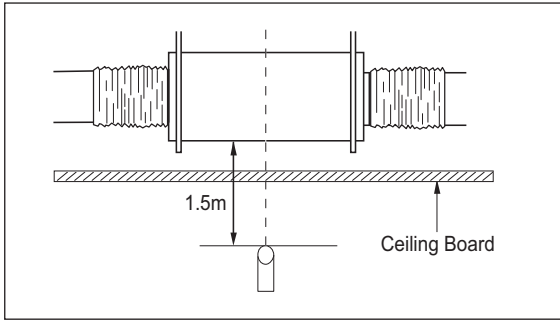
### ■ LZ-H020GBA6

Setting Mode [CMH]	External Static Pressure Pa (in.wg)											
	0 (0.0)		30 (0.1)		50 (0.2)		70 (0.3)		100 (0.4)		150 (0.6)	
	RPM											
	SA	EA	SA	EA	SA	EA	SA	EA	SA	EA	SA	EA
Super High [200]	1,630	1,460	1,760	1,600	1,840	1,690	1,910	1,770	2,050	1,910	2,250	2,120
High [200]	1,630	1,460	1,760	1,600	1,840	1,690	1,910	1,770	2,050	1,910	2,250	2,120
Low [100]	1,040	1,000	1,260	1,190	1,400	1,320	1,540	1,440	1,680	1,620	1,930	1,860

# 10. Sound Levels

## 10.1 Sound Pressure Level

### Overall

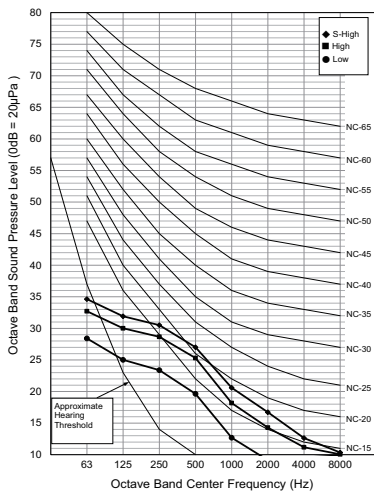


**Note**

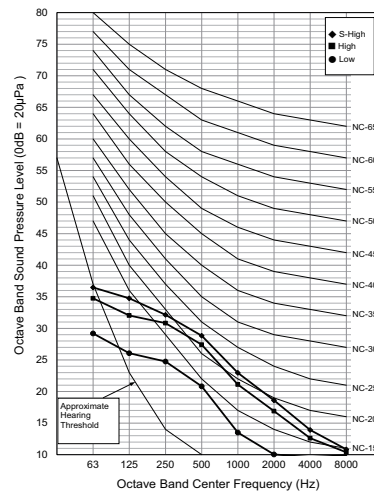
1. Sound measured at some distance away from the center of the unit.
2. Data is valid at free field condition.
3. Reference acoustic pressure 0dB = 20μPa.
4. Data is valid at nominal operation condition. Refer to the Model Specifications for nominal conditions (Power source and Ambient temperature, etc)
5. Sound levels can be increased in accordance with installation and operating conditions. (Static pressure mode, used air guide, Room target temperature setting, etc)
6. Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular room in which the equipment is installed.
7. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.

Model	Sound Levels [dB(A)]		
	Super High	High	Low
LZ-H015GBA6	28	26	21
LZ-H020GBA6	30	28	22

**LZ-H015GBA6**



**LZ-H020GBA6**



# 10. Sound Levels

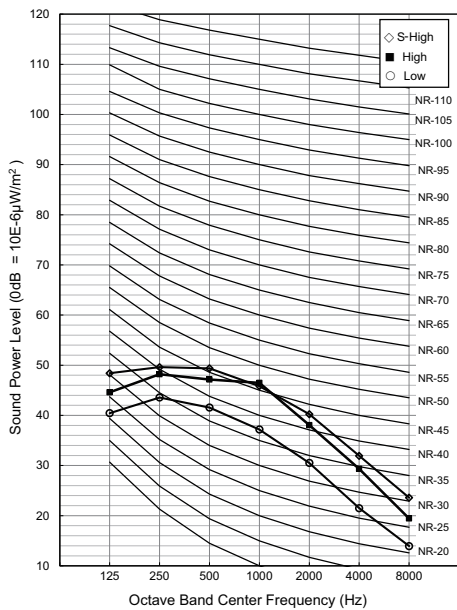
## 10.2 Sound Power Level

**Note**

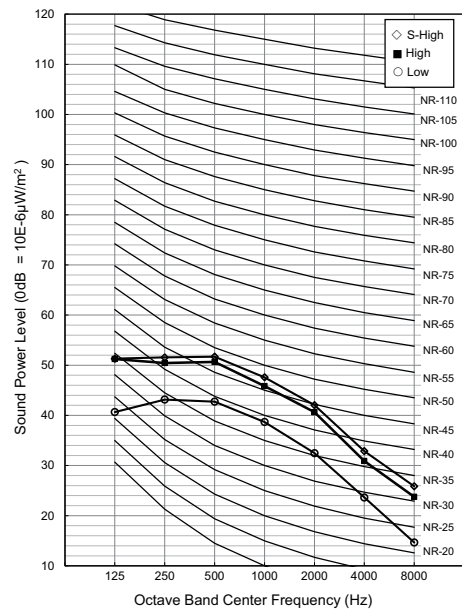
1. Data is valid at diffuse field condition.
2. Reference acoustic intensity 0dB =  $10E-6\mu W/m^2$
3. Sound power level is measured on the rated condition in the reverberation rooms. Refer to the Model Specifications for nominal conditions(Power source and Ambient temperature, etc)
4. Sound levels can be increased in accordance with installation and operating conditions.
5. Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of particular installed place in which the equipment in installed.
6. Sound power level is measured on the rated condition in accordance with ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation.

Model	Sound Levels [dB(A)]		
	Super High	High	Low
LZ-H015GBA6	53	51	45
LZ-H020GBA6	55	53	46

**LZ-H015GBA6**



**LZ-H020GBA6**



# **ERV**

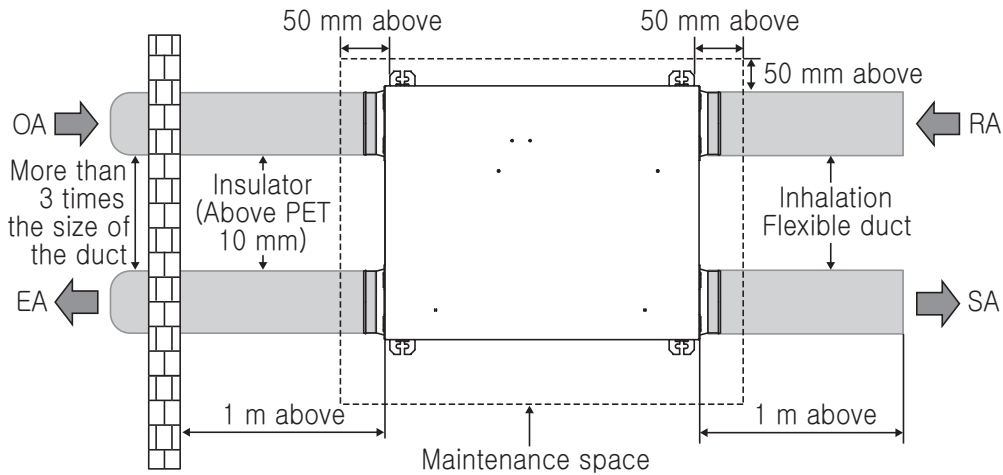
## **Residential Ventilation Unit**

### **Installation of Residential Ventilation Unit**

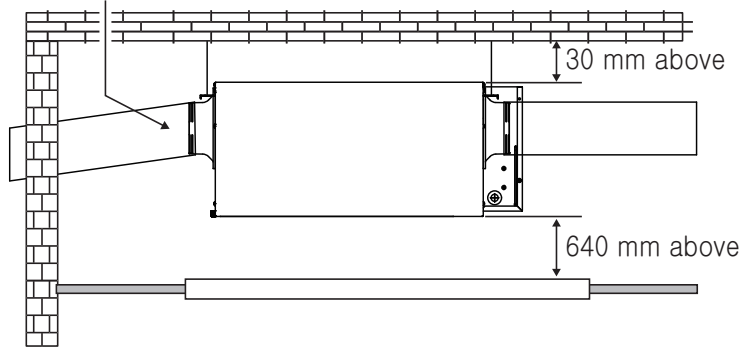
- 1.Installation Map**
- 2.Wiring Connection**
- 3.Group Control**
- 4.M.D(Motorized Damper) Installation Criteria**

# 1. Installation Map

## ◆ LZ-H015GBA6, LZ-H020GBA6



Duct slope: More than 1/30(wall side)  
obtaining of right distance  
(Preventing penetration of rain water)

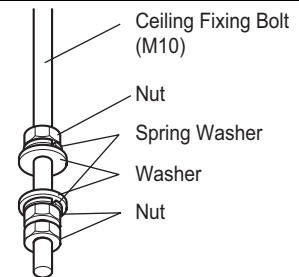


## ■ Installation of Main Body

### Assembly of washer, Nut

Tighten the commercial washer nut (more than 21mm for the outside diameter of M10, to the commercial ceiling fixing bolt (M10) as shown in the figure.

- For the ceiling fixing bolt, perform work less than 50mm under the ceiling fixing bracket.

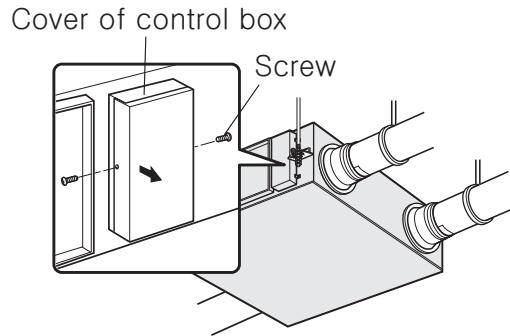


## 2. Wiring Connection

### Method to Connect Power Cord

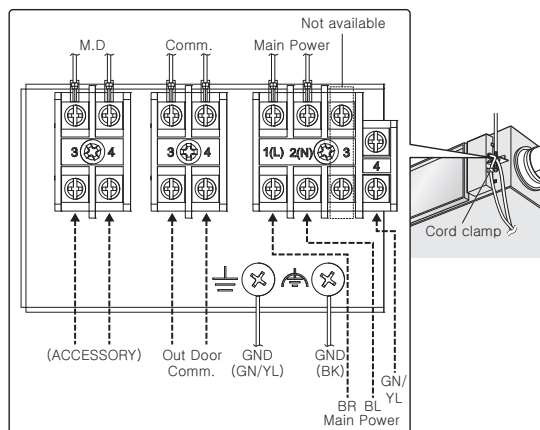
1. Release two screw and then open the cover of the control box.

- With reference to the above wiring diagram, accurately connect the main power cords into the terminal block.



2. After inserting the power cord into the bushing, fully insert it into the terminal block for connection.

- Fix the power cords with the clamp.
- Make sure that the power cords may not be removed by pulling them.



Capacity	150 / 200 CMH
Circuit Breaker	250 V / 5 A

#### **WARNING**

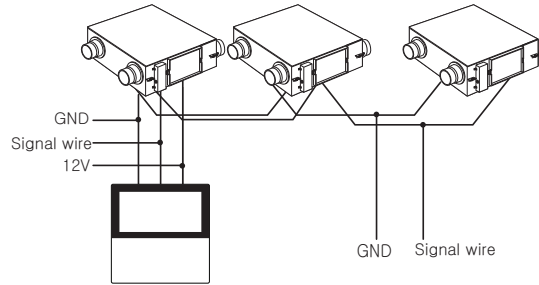
This appliance must be properly grounded.

#### **CAUTION**

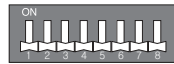
The power cord connected to the unit should be selected according to the following specifications.

### 3. Group control

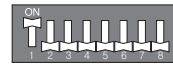
- When installing more than 2 units of air conditioner to one wired remote controller, please connect as the below figure.
  - If it is not event communication indoor unit, set the unit as slave.
  - Check for event communication through the product manual.



- When controlling multiple indoor units with event communication function with one remote controller, you must change the master/slave setting from the indoor unit.
- Alter the master/slave switch while power stays 'Off' and then turn the power 'On' after one minute from the alteration.
  - For ceiling type cassette and duct product group, change the switch setting of the indoor PCB.



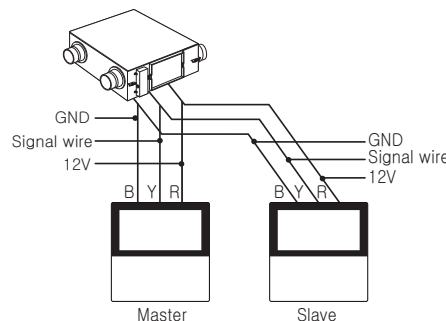
#1 switch Off: Master  
(Factory default setting)



#1 switch On: Slave

- For wall-mount type and stand type product, change the master/slave setting with the wireless remote controller.(Refer to wireless remote controller manual for detail)
- When installing 2 remote controllers to one indoor unit with event communication function, set the master/slave of the remote controller.(Refer to remote controller master/slave selection)
- When installing the group, some functions excluding basic operation setting, fan level min/mid/max, remote controller lock setting and time may be limited

- When installing more than 2 wired remote controllers to one air conditioner, please connect as the below picture.
  - When installing more than 2 units of wired remote controller to one air conditioner, set one wired remote controller as master and the others all as slaves, as shown in the below picture.
  - You cannot control the group as shown in the right for some product.
  - Refer to the product manual for more detail.



<When simultaneously connecting 2 sets of wired remote controller>

#### Note

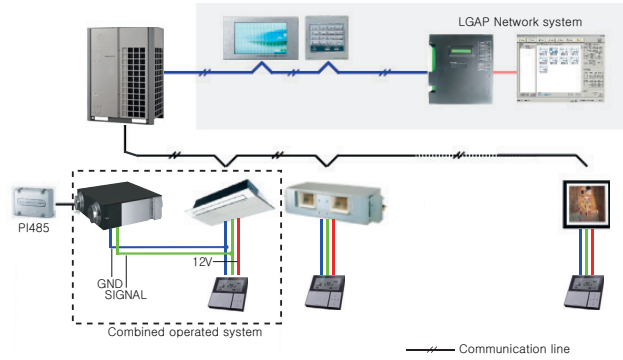
- When controlling in groups, set the master/slave of remote controller. Refer to Installer setting section on how to set master/slave for more detail.

### 3. Group control

This unit can be used as part of the combined operation system used together with indoor units (Multi-V system air conditioner), or as an independent system for processing outside air.

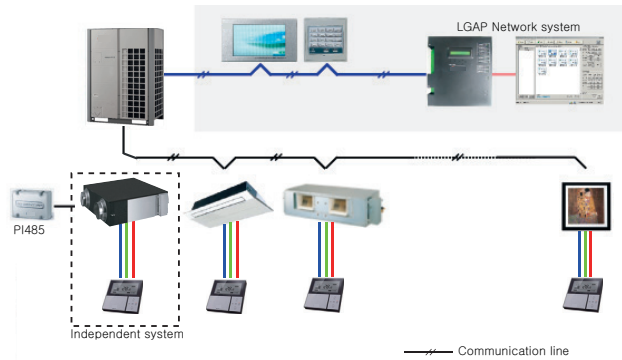
#### Combined operation system with Multi-V system

(connected with ventilation units and standard indoor units in a single refrigerant circuit)



#### Independent system

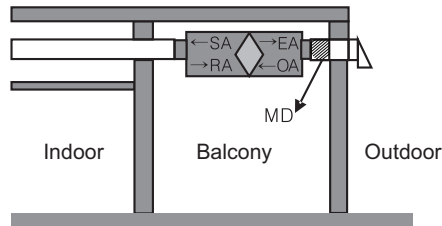
(connected only with a ventilation unit in a single refrigerant circuit)



## 4. M.D(Motorized damper) installation criteria

### ◆ Based on the M.D(Motorized Damper) installation

- Installed at the entrance of the outdoor duct(OA & EA) ventilation device.



### ◆ Outdoor temperature Conditions for normal product operation : -10 °C ~ 40 °C

- If the temperature is outside the operating range of the product, there is a risk of condensation occurring inside the ventilation device.
- Do not install it in a humid place such as a bathroom.
- Install MD(Motorized Damper) to prevent external air inflow.
- Do not operate the ventilation system during rain or strong winds as water may flow into the indoors.



**Air Solution**

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The air conditioners manufactured by LG have received ISO9001 certificate for quality assurance and ISO14001 certificate for environmental management system.  
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