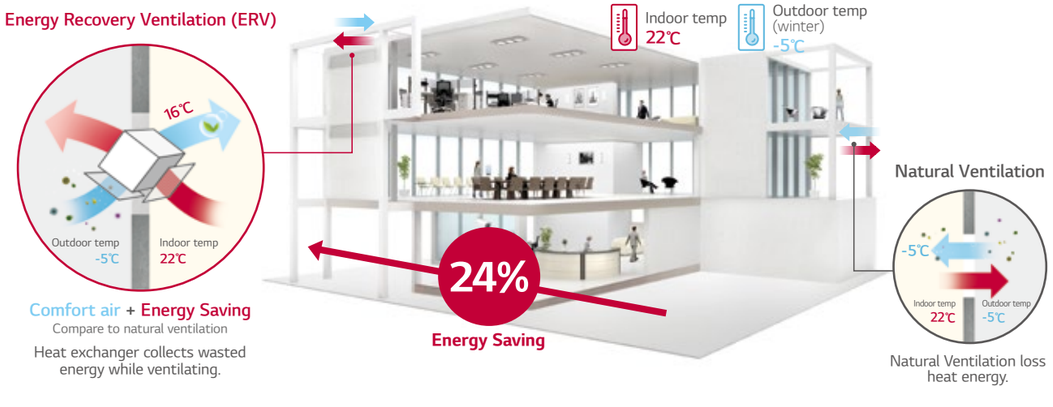
ENERGY RECOVERY VENTILATION (ERV)

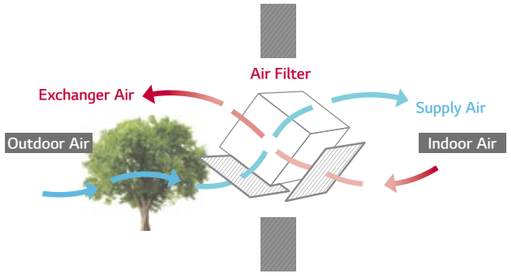
NECESSITY OF ERV



HIGH EFFICIENCY

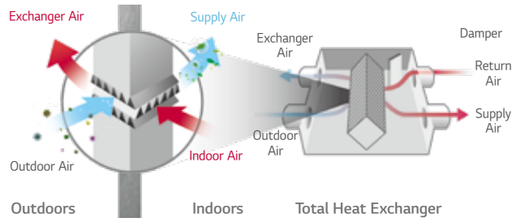
High Efficiency Heat Exchanger

Efficiency and comfort is ensured through the high-efficiency energy recovery central core which recovers energy from the indoor air and transfers it to the fresh incoming air without mixing the air stream.



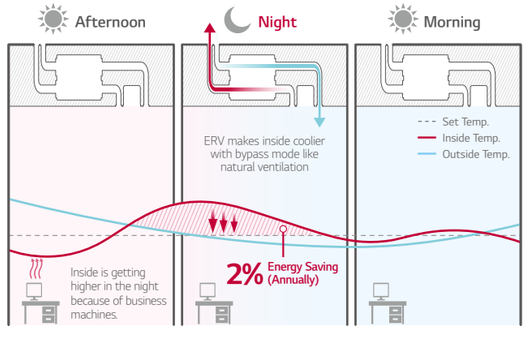
Exhaust System

The exhaust system uses a high static sirocco fan to effectively remove contaminants from indoor air. Supply and exhaust air flows are completely separated in the heat exchanger, allowing the LG ERV to filter out impurities before supplying outdoor air to ensure indoor air is fresh and healthy.



Night Time Free Cooling

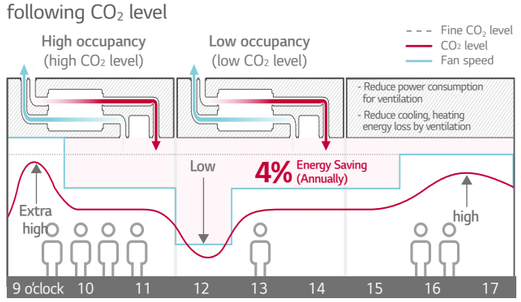
During summer nights, indoor heat can be discharged outdoors and cool outdoor air can be brought indoors for energy savings.



※ This function is operated with 'Night Time Free Cooling' on remote controller. (with MULTI V only)
※ Energy saving ratio can be differed by weather condition.
※ Test Condition
- Office (49,000ft²) / Occupancy : 30 / Area : London, UK
- ERV (1000 CMH) + MULTI V 4 (12HP) Unit Combination
- Other conditions are subject to BREEAM.

CO_2 Auto Operation

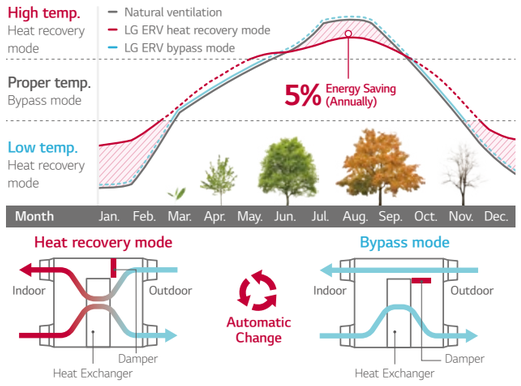
LG ERV reduces energy loss with auto fan speed control following CO_2 level



※ This function is operated with 'Night Time Free Cooling' on remote controller. (with MULTI V only)
※ Energy saving ratio can be differed by weather condition.
※ Test Condition - Office (49,000ft²) / Occupancy : 30 / Area : London, UK
- ERV (1000 CMH) + MULTI V 4 (12HP) Unit Combination
- Other conditions are subject to BREEAM.

Seasonal Auto Operation

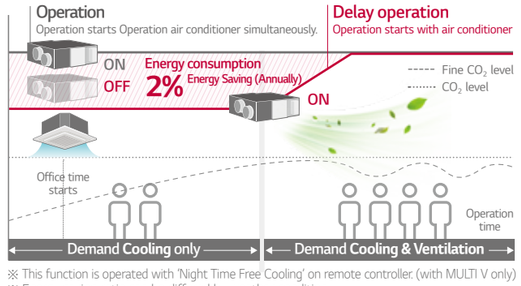
LG ERV senses outdoor temperature and operates automatically following weather condition.



※ This function is operated with 'Auto' mode by wired remote control.
※ Energy saving ratio can be differed by weather condition.
※ Test Condition: - Office (49,000ft²) / Occupancy : 30 / Area : London, UK
- ERV (1,000 CMH) + MULTI V 4 (12HP) Unit Combination
- Other conditions are subject to BREEAM.

Delay Operation

When the air conditioner and ERV are switched on simultaneously, delay operation can reduce unnecessary heating and cooling energy loss by slowing down automatic ERV operation.



※ This function is operated with 'Night Time Free Cooling' on remote controller. (with MULTI V only)
※ Energy saving ratio can be differed by weather condition.
※ Test Condition - Office (49,000ft2) / Occupancy : 30 / Area : London, UK
- ERV (1000 CMH) + MULTI V 4 (12HP) Unit Combination
- Other conditions are subject to BREEAM.

COMFORT & RELIABILITY

CO_2 Level Monitoring

CO_2 sensor senses CO_2 level in the room. Users can monitor CO_2 level on new wired remote controller, and ERV controls the fan speed automatically following the level.

CO_2 Level Visualization

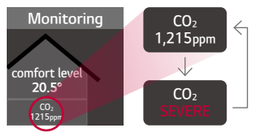
CO_2 sensor senses indoor CO_2 level and displays it on new wired remote controller.

Main display

If the CO_2 level is above 900ppm in the room, the red mark is on.

Further information

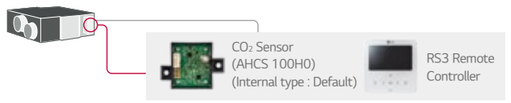
CO_2 level and room condition are displayed continuously.

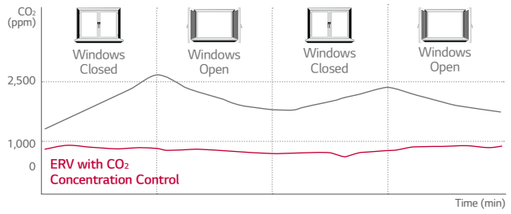


※ The remote controller screen image may change.
※ Applicable to only Standard III, Premium remote controller.

CO_2 Concentration Control

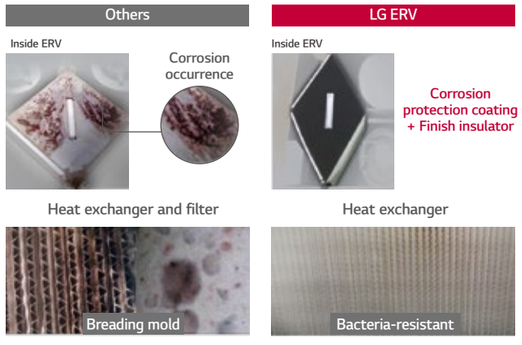
Using CO_2 sensor, LG ERV controls exhaust air flow automatically to keep indoor air fresh under settled CO_2 concentration.





High Durability

LG ERV durability is increased through bacteria-resistant material of heat exchanger and corrosion protection coating. It prevents shortening product life due to corrosion and mold and supplies high quality air to inside by minimizing the bacteria.



CONVENIENCE

Easy Control

Wired remote controller is easy for usage.

Easy
- Navigation buttons, easy to use.
- Easy installation setting

Convenient
- Flexible display
- Dual display with air conditioner.
- Zoom selected directory to increase legibility.

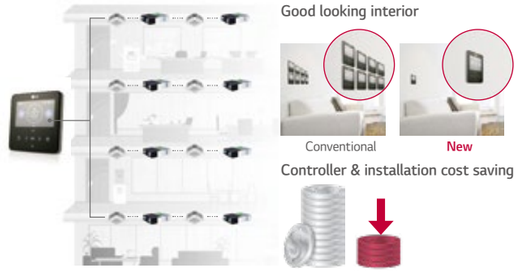
Visible
- Indoor CO_2 level
- Alarm for filter change / Remained time to change filters

Group Control

1 wired remote controller up to 16 ERV (Including air conditioner). It is convenient for large common space such as lobby.

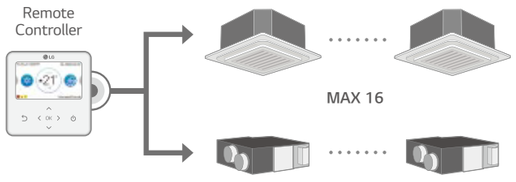
Several units combination

16 units group control is available with 1 remote controller.



Interlocking with Air Conditioning System

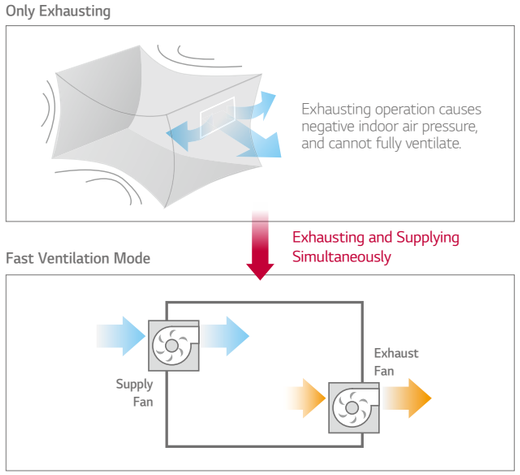
- LG ERV can be interlocked with air conditioners and controlled individually.
- This function can be operated when the system is connected with 1 remote controller.



CONVENIENCE

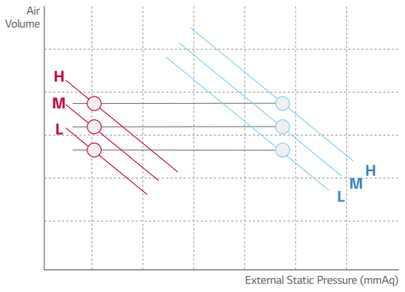
Fast Ventilation Mode

Fast ventilation mode prevents the spread of contaminants under negative indoor pressure, and makes indoor air fresh and comfortable quickly.



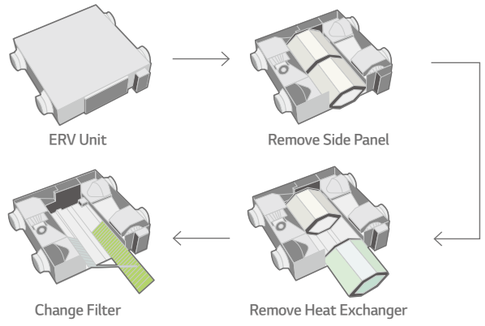
External Static Pressure Control

The high static pressure fan can control the air volume depending on the length of the duct. It is also easy to control the pressure level by using the remote controller for a more flexible duct installation and easier testing.



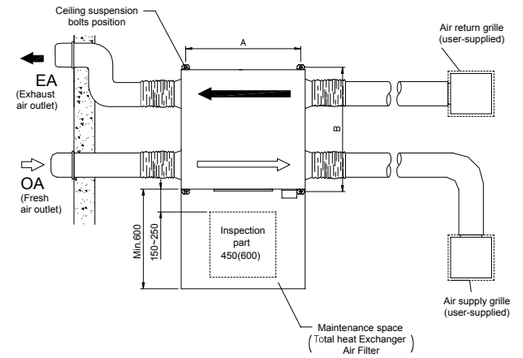
Easy Cleaning and Filter Change

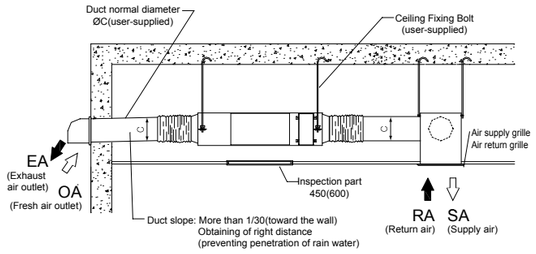
Filter can be conveniently changed and cleaned.



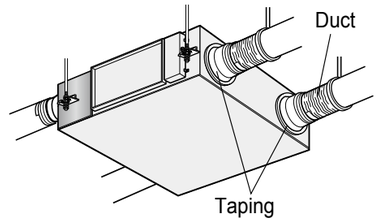
Installation Scene

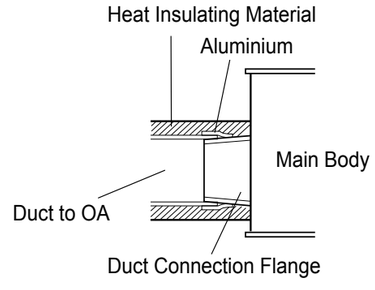
LZ-H025GBA4 / LZ-H035GBA5 / LZ-050GBA5





Connection of Duct





ERV

LZ-H025GBA4 / LZ-H035GBA5
LZ-H050GBA5

Model			Unit	LZ-H025GBA4	LZ-H035GBA5	LZ-H050GBA5
Dimensions (W x H x D)	Body		mm		988 x 273 x 1,014	
Weight	Body		kg		44	
Power Supply			Ø, V, Hz		1, 220-240, 50/60	
Normal Air flow			m³/h	250	350	500
ERV Mode	Operating Step				Super-high / High / Low	
	Current	SH / H / L	A	0.70 / 0.60 / 0.42	1.05 / 0.90 / 0.50	1.65 / 1.56 / 0.80
	Power Input	SH / H / L	W	97 / 87 /52	150 / 125 / 60	247 / 230 / 95
	Air Flow	SH / H / L	m³/h	250 / 250 / 150	350 / 350 / 210	500 / 500 / 320
	External Static Pressure	SH / H / L	Pa	100 / 70 / 50	150 / 100 / 50	150 / 100 / 50
	Temperature Exchange Efficiency	SH / H / L	%	80 / 80 / 83	80 / 80 / 82	79 / 79 / 82
	Enthalpy Exchange Efficiency	Heating (SH / H / L)	%	70 / 70 / 72	75 / 75 / 80	75 / 75 / 78
		Cooling (SH / H / L)	%	66 / 66 / 68	71 / 71 / 75	68 / 68 / 75
	Energy Label	A+ to G Scale		A	B	B
	Sound Pressure Level	SH / H / L	dB(A)	29 / 28/ 24	35 / 32 / 26	37 / 36 / 28
	Sound Power Level	SH / H / L	dB(A)	50	53 / 50 / 42	57 / 56 / 46
Bypass Mode	Operating Step				Super-high / High / Low	
	Current	SH / H / L	A	0.70 / 0.60 / 0.42	1.05 / 0.90 / 0.50	1.65 / 1.56 / 0.80
	Power Input	SH / H / L	W	97 / 87 /52	150 / 125 / 60	247 / 230 / 95
	Air Flow	SH / H / L	m³/h	250 / 250 / 150	350 / 350 / 210	500 / 500 / 320
	External Static Pressure	SH / H / L	Pa	100 / 70 / 50	150 / 100 / 50	150 / 100 / 50
	Sound Pressure Level	SH / H / L	dB(A)	29 / 29/ 25	35 / 33 / 26	37 / 37 / 28
Duct Work		Qty	EA		4	
		Size (Ø)	mm		Ø200	
Supply Air Fan		Qty	EA		1	
		Type			Direct-Drive Sirocco	
Exhaust Air Fan		Qty	EA		1	
		Type			Direct-Drive Sirocco	
Filters		Qty	EA		2	
		Type			Cleanable fibrous fleeces	
		Size (W x H x D)	mm		855 x 10 x 166	

Note : 1. ERV mode : Total Heat Recovery Ventilation mode
2. Refer to dimensional drawings.
3. Noise level :
- The operating conditions are assumed to be standard.
- Sound measured at 1.5m below the center the body.
- 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.
- The sound level at the air discharge port is about 8 dB(A) higher than the unit's operating sound.
4. Temperature and Enthalpy Exchange Efficiency at cooling Indoor Temperature : 26.5°C DB, 64.5% RH, Outdoor Temperature : 34.5°C DB, 75% RH
5. Temperature and Enthalpy Exchange Efficiency at heating Indoor Temperature : 20.5°C DB, 59.5% RH, Outdoor Temperature : 5°C DB, 65% RH
6. Temperature Exchange efficiency is tested at heating condition.

Accessories

Chassis	LZ-H025GBA4	LZ-H035GBA5	LZ-H050GBA5
Drain Pump		-	
Cassette Cover		-	
Refrigerant Leakage Detector		-	
EEV Kit		-	
Independent Power Module		-	
Robot Cleaner		-	
Pre Filter (Washable)		-	
Ion Generator		-	
CO_2 Sensor		○	
Ventilation Kit		-	
IR Receiver		-	
Zone Controller		-	
Dry Contact (with additional accessory)		PDRYCB000 (1 point contact) PDRYCB500 (Modbus)	
External Input (1 point)		-	
Wi-Fi		-	

※ ○ : Applied, - : Not applied
Option : Refer to model name in table

ERV

LZ-H080GBA5 / LZ-H100GBA5
LZ-H150GBA5 / LZ-H200GBA5

Model			Unit	LZ-H080GBA5	LZ-H100GBA5	LZ-H150GBA5	LZ-H200GBA5
Dimensions (W x H x D)	Body		mm	1,101 x 405 x 1,230		1,353 x 815 x 1,230	
Weight	Body		kg	63		130	
Power Supply			Ø, V, Hz	1, 220-240, 50/60		1, 220-240, 50/60	
Normal Air flow			m³/h	800	1,000	1,500	2,000
ERV Mode	Operating Step			Super-high / High / Low		Super-high / High / Low	
	Current	SH / H / L	A	2.13 / 1.75 / 1.00	2.92 / 2.38 / 1.40	4.26 / 3.50 / 2.00	5.92 / 4.76 / 2.80
	Power Input	SH / H / L	W	328 / 266 / 144	463 / 370 / 208	660 / 530 / 290	926 / 740 / 420
	Air Flow	SH / H / L	m³/h	800 / 800/ 660	1,000 / 1,000 / 800	1,500 / 1,500 / 1,200	2,000 / 2,000 / 1,600
	External Static Pressure	SH / H / L	Pa	160 / 100 / 50	160 / 100 / 50	160 / 100 / 50	160 / 100 / 50
	Temperature Exchange Efficiency	SH / H / L	%	82 / 82 / 83	80 / 80 / 81	82 / 82 / 83	80 / 80 / 81
	Enthalpy Exchange Efficiency	Heating (SH / H / L)	%	73 / 73 / 76	71 / 71/ 73	73 / 73 / 76	71 / 71/ 73
		Cooling (SH / H / L)	%	66 / 66 / 70	64 / 64 / 67	66 / 66 / 70	64 / 64 / 67
	Sound Pressure Level	SH / H / L	dB(A)	40 / 36 / 32	40 / 37 / 33	43 / 39 / 35	43 / 40 / 36
	Sound Power Level	SH / H / L	dB(A)	56 / 53 / 47	59 / 56 / 52	59 / 56 / 50	62 / 59 / 55
Bypass Mode	Operating Step			Super-high / High / Low		Super-high / High / Low	
	Current	SH / H / L	A	2.13 / 1.75 / 1.00	2.92 / 2.38 / 1.40	4.26 / 3.50 / 2.00	5.92 / 4.76 / 2.80
	Power Input	SH / H / L	W	328 / 266 / 144	463 / 370 / 208	660 / 530 / 290	926 / 740 / 420
	Air Flow	SH / H / L	m³/h	800 / 800/ 660	1,000 / 1,000 / 800	1,500 / 1,500 / 1,200	2,000 / 2,000 / 1,600
	External Static Pressure	SH / H / L	Pa	160 / 100 / 50	160 / 100 / 50	160 / 100 / 50	160 / 100 / 50
	Sound Pressure Level	SH / H / L	dB(A)	41 / 37 / 33	41 / 38 / 34	44 / 40 / 36	44/ 41 / 37
Duct Work		Qty	EA	4		4 + 2	
		Size (Ø)	mm	Ø250		Ø250 + Ø350	
Supply Air Fan		Qty	EA	1		2	
		Type		Direct-Drive Sirocco		Direct-Drive Sirocco	
Exhaust Air Fan		Qty	EA	1		2	
		Type		Direct-Drive Sirocco		Direct-Drive Sirocco	
Filters		Qty	EA	2		4	
		Type		Cleanable fibrous fleeces		Cleanable fibrous fleeces	
		Size (W x H x D)	mm	1,148 x 6 x 245		1,148 x 6 x 245	

Note : 1. ERV mode : Total Heat Recovery Ventilation mode
2. Refer to dimensional drawings.
3. Noise level :
- The operating conditions are assumed to be standard.
- Sound measured at 1.5m below the center the body.
- 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.
- The sound level at the air discharge port is about 8 dB(A) higher than the unit's operating sound.
4. Temperature and Enthalpy Exchange Efficiency at cooling Indoor Temperature : 26.5°C DB, 64.5% RH, Outdoor Temperature : 34.5°C DB, 75% RH
5. Temperature and Enthalpy Exchange Efficiency at heating Indoor Temperature : 20.5°C DB, 59.5% RH, Outdoor Temperature : 5°C DB, 65% RH
6. Temperature Exchange efficiency is tested at heating condition.

Accessories

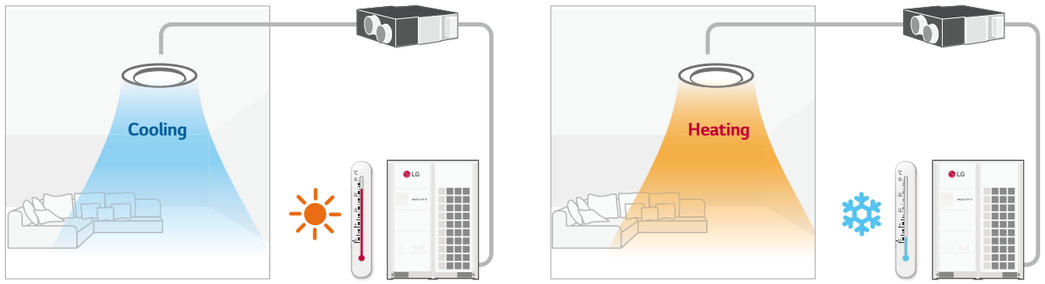
Chassis	LZ-H080GBA5	LZ-H100GBA5	LZ-H150GBA5	LZ-H200GBA5
Drain Pump		-		
Cassette Cover		-		
Refrigerant Leakage Detector		-		
EEV Kit		-		
Independent Power Module		-		
Robot Cleaner		-		
Pre Filter (Washable)		-		
Ion Generator		-		
CO_2 Sensor		○		
Ventilation Kit		-		
IR Receiver		-		
Zone Controller		-		
Dry Contact (with additional accessory)		PDRYCB000 (1 point contact) PDRYCB500 (Modbus)		
External Input (1 point)		-		
Wi-Fi		-		

※ ○ : Applied, - : Not applied
Option : Refer to model name in table

ERV WITH DX COIL

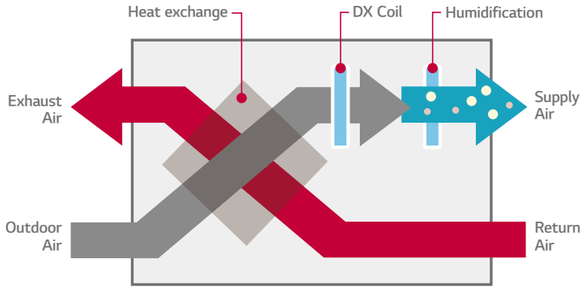
Providing Cool & Warm Fresh Air

During the summer, ERV DX can transform outdoor warm air into cool air for indoors, and it can prevent cold draft during the winter by supplying warm air.



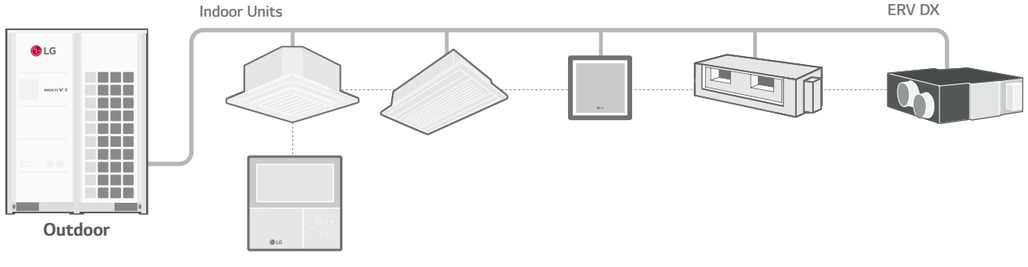
Total Air Conditioning Solution

LG ERV DX can be used as a Total Air Conditioning Solution. It can control condition of incoming air with the DX coil and humidifier for making comfortable indoor air. In the summer, LG ERV DX provides air conditioning by cooling and dehumidifying incoming air. During winter, warm air is provided by heating and humidifying incoming air.



Interlocking with MULTI V

LG ERV DX can be interlocked with MULTI V. It can be controlled individually by a wired remote controller connected to MULTI V indoor units.



ERV WITH DX COIL

LZ-H050GXH4 / LZ-H080GXH4
LZ-H100GXH4 / LZ-H050GXN4
LZ-H080GXN4 / LZ-H100GXN4

Model			LZ-H050GXH4	LZ-H080GXH4	LZ-H100GXH4	LZ-H050GXN4	LZ-H080GXN4	LZ-H100GXN4
Fresh Air Conditioning Load	Cooling	kW	4.93	7.46	9.12	4.93	7.46	9.12
	Heating	kW	6.73	9.80	11.72	6.73	9.80	11.72
Temperature Exchange Efficiency	SH / H / L	%	86 / 86 / 87	80 / 80 / 81	76 / 76 / 78	86 / 86 / 87	80 / 80 / 81	76 / 76 / 78
Enthalpy Exchange Efficiency	Cooling (SH / H / L)	%	61 / 61 / 63	50 / 50 / 53	45 / 45 / 50	61 / 61 / 63	50 / 50 / 53	45 / 45 / 50
	Heating (SH / H / L)	%	76 / 76 / 77	67 / 67 / 69	64 / 64 / 66	76 / 76 / 77	67 / 67 / 69	64 / 64 / 66
Operation Range	Outdoor air Temperature	°C	-15 ~ 45	-15 ~ 45	-15 ~ 45	-15 ~ 45	-15 ~ 45	-15 ~ 45
Air Flow Rate	Heat Exchange Mode (SH / H / L)	CMH	500 / 500 / 440	800 / 800 / 640	1,000 / 1,000 / 820	500 / 500 / 440	800 / 800 / 640	1,000 / 1,000 / 820
	Bypass Mode (SH / H / L)	CMH	500 / 500 / 440	800 / 800 / 640	1,000 / 1,000 / 820	500 / 500 / 440	800 / 800 / 640	1,000 / 1,000 / 820
Fan	External Static Pressure (SH / H / L)	Pa	160 / 120 / 100	140 / 90 / 70	110 / 70 / 60	180 / 150 / 110	170 / 120 / 80	150 / 100 / 70
Humidifier	System		Natural Evaporating Type			-		
	Amount	kg/h	2.70	4.00	5.40	-		
	Pressure Feed Water	Mpa	0.02 ~ 0.49			-		
Sound Pressure	Heat Exchange Mode (SH / H / L)	dB(A)	38 / 36 / 33	39 / 37 / 34	40 / 38 / 35	39 / 37 / 35	41 / 38 / 36	41 / 39 / 36
	Bypass Mode (SH / H / L)	dB(A)	39 / 37 / 34	40 / 38 / 35	40 / 38 / 35	39 / 37 / 35	41 / 38 / 36	41 / 39 / 36
Refrigerant			R410A					
Power Supply		Ø, V, Hz	1, 220-240, 50/60					
Power Input (Nominal)	Heat Exchange Mode (SH / H / L)	kW	0.25 / 0.20 / 0.15	0.42 / 0.35 / 0.25	0.48 / 0.42 / 0.27	0.25 / 0.20 / 0.15	0.42 / 0.35 / 0.25	0.48 / 0.42 / 0.27
	Bypass Mode (SH / H / L)	kW	0.25 / 0.20 / 0.15	0.42 / 0.35 / 0.25	0.48 / 0.42 / 0.27	0.25 / 0.20 / 0.15	0.42 / 0.35 / 0.25	0.48 / 0.42 / 0.27
Nominal Running Current (RLA)	Heat Exchange Mode (SH / H / L)	A	1.5 / 1.3 / 1.0	2.5 / 2.0 / 1.5	3.6 / 3.2 / 2.3	1.5 / 1.3 / 1.0	2.5 / 2.0 / 1.5	3.6 / 3.2 / 2.3
	Bypass Mode (SH / H / L)	A	1.5 / 1.3 / 1.0	2.5 / 2.0 / 1.5	3.6 / 3.2 / 2.3	1.5 / 1.3 / 1.0	2.5 / 2.0 / 1.5	3.6 / 3.2 / 2.3
Heat Exchange System			Air to air cross flow total heat (Sensible + Latent heat) exchange			Air to air cross flow total heat (Sensible + Latent heat) exchange		
Heat Exchange Element			Specially processed non-flammable paper			Specially processed non-flammable paper		
Air Filter			Multidirectional fibrous fleeces			Multidirectional fibrous fleeces		
Dimensions	W x H x D	mm	1,667 x 365 x 1,140			1,667 x 365 x 1,140		
Net Weight		kg	105			98		
Piping Connection	Liquid	mm	Ø6.35			Ø6.35		
	Gas	mm	Ø12.7			Ø12.7		
	Water	mm	Ø6.35			-		
	Drain Pipe (Internal Dia.)	mm (inch)	Ø25 (1)			Ø25 (1)		
Connection Duct Diameter		mm	Ø250			Ø250		

Note : 1. Cooling Capacity Test condition - Indoor temperature : 27°C DB, 19°C WB / Outdoor temperature : 35°C DB
2. Heating Capacity Test condition - Indoor temperature : 20°C DB / Outdoor temperature : 7°C DB, 6°C WB
3. Humidifying capacity is based on the following conditions - Indoor temperature : 20°C DB, 15°C WB / Outdoor temperature : 7°C DB, 6°C WB
4. Cooling and heating capacities are based on the following conditions. : Fan is based on High and Super-high.
5. The operating sound measured at the point 1.5 m below the center of the unit is converted to that measured at an anechoic chamber.
6. The specifications, designs and information here are subject to change without notice.

Accessories

Chassis	LZ-H050GXH4	LZ-H080GXH4	LZ-H100GXH4	LZ-H050GXN4	LZ-H080GXN4	LZ-H100GXN4
Drain Pump	-					
Cassette Cover	-					
Refrigerant Leakage Detector	PRLDNVS0					
EEV Kit	-					
Independent Power Module	-					
Robot Cleaner	-					
Pre Filter (Washable)	-					
Ion Generator	-					
CO_2 Sensor	AHCS100H0					
Ventilation Kit	-					
IR Receiver	-					
Zone Controller	-					
Dry Contact (with additional accessory)	PDRYCB000 (1 point contact) PDRYCB500 (Modbus)					
External Input (1 point)	○					
Wi-Fi	-					

※ ○ : Applied, - : Not applied
Option : Refer to model name in table