




CITY-MULTI®
LOSSNAY SYSTEM

A photograph of a modern conference room. In the foreground, several black office chairs with silver bases are arranged around a long, light-colored wooden conference table. In the background, there is a large whiteboard on a stand, a tall green potted plant, and a window with blinds. The ceiling has a circular air vent. The overall atmosphere is professional and clean.

Lossnay System

LGH-FRVX2 Series

A commercially oriented system that can be used to deliver high performance and functions virtually anywhere.

Model	Airflow	300 CFM	380 CFM	470 CFM	600 CFM	940 CFM	1200 CFM
 LGH-F300/380/470/600RVX2	 LGH-F940/1200RVX2	●	●	●	●	●	●

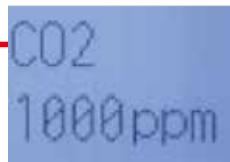
A new generation of controls, with more flexible commissioning and two plug-and-play CO₂ sensors.

PZ-62DR-EA




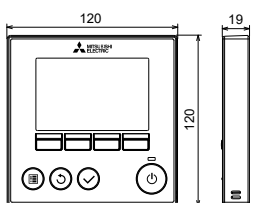

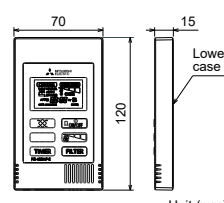
Pure white color matches your office wall or decoration.

“Lossnay” logo is indicated to distinguish with Mr.Slim or Citi Multi remote controller.



CO₂ indication

Remote controller settings and functions

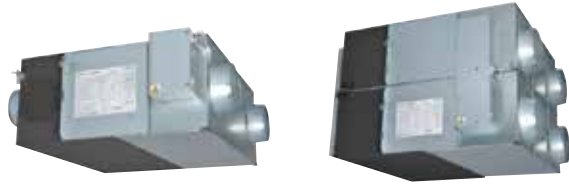
Function	PZ-62DR-EA	PZ-43SMF-E
	  Unit (mm)	  Unit (mm)
Fan speed selection	4 fan speeds and Auto (Auto is available when using a CO ₂ sensor)	2 of 4 fan speeds
Control with a CO ₂ sensor (Mitsubishi Electric)	Yes (Fan speed automatically changes from 25% to 100% depending on the CO ₂ concentration*)	No
Control with a CO ₂ sensor (Field supply)	Yes (Fan speed automatically changes from 25% to 100% depending on the CO ₂ concentration*)	No
Ventilation mode selection	Energy recovery/Bypass/Auto	Energy recovery/Bypass/Auto
Night-purge	Yes	No
Function setting from remote controller	Yes	No
Bypass temp. free setting	Yes	No
Multi-stage airflow control	Yes (Both supply and exhaust fan speeds can be set separately from 25% to 100% in 5% pitches)	No
ON/OFF timer	Yes	Yes
Auto-off timer	Yes	No
Weekly timer	Yes	No
Fan speed timer	Yes	No
Operation restrictions (ON/OFF, ventilation mode, fan speed)	Yes	No
Operation restrictions (fan speed skip setting)	Yes	No
Screen contrast adjustment	Yes	No
Language selection	Yes	No (English only)
CO ₂ concentration indication	Yes (available when using our manufactured CO ₂ sensor)	No
Filter cleaning sign	Yes (maintenance interval can be changed)	Yes
Lossnay core cleaning sign	Yes (maintenance interval can be changed)	No
Error indication	Yes (displays model name, serial number, contact information)	Yes
Error history	Yes	No
OA/RA/SA temp. display	Yes	No

*When using a CO₂ sensor, upper and lower limits may be changed.

LOSSNAY

LGH-FRVX2 Series

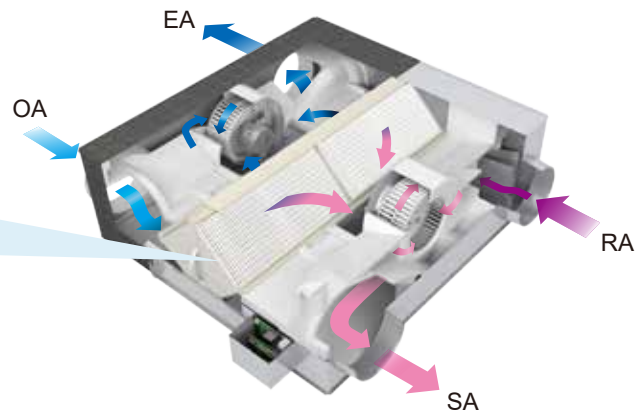
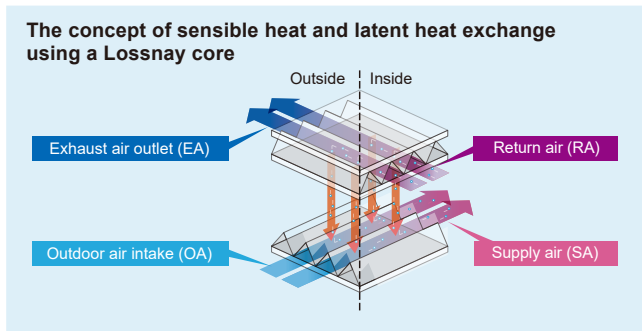
LGH-F300/380/470/600/940/1200RVX2



Lossnay ventilation systems are renowned industry-wide for their efficiency. They offer environment friendly energy recovery and humidity control, and enable air-conditioning systems to simultaneously provide optimum room comfort and energy savings.

Indoor air quality inside a building is optimized through temperature and humidity exchange by lossnay

Lossnay is a total heat exchange ventilation system that uses paper characteristics to perform temperature (sensible heat) and humidity (latent heat) exchange.



What can be improved by introducing Lossnay?

- Ventilation with maximized comfort

In summer

Air similar to the conditions of cooled (dehumidified) indoor air is supplied.

	LOSSNAY	Conventional ventilator
Dry bulb temperature (°F)	83.0	91.4
Absolute humidity (lb/lb(DA))	0.0158	0.0201
Relative humidity (%)	65	63
Enthalpy (Btu/lb(DA))	29.6	36.4
Total energy recovery (kW)	5.4	0
Outdoor air load (kW)	5.4	10.8
Outdoor air load ratio (%)	50	100

Room air		Outdoor air	
Dry bulb temperature	78.8°F	Dry bulb temperature	91.4°F
Absolute humidity	0.0105 lb/lb(DA)	Absolute humidity	0.0201 lb/lb(DA)
Relative humidity	50%	Relative humidity	63%
Enthalpy	22.7 Btu/lb(DA)	Enthalpy	36.4 Btu/lb(DA)

Heat recovery calculation
 Indoor supply-air temperature (°F) = Outdoor temperature (°F) - (Outdoor temperature (°F) - Indoor temperature (°F)) × Temp recovery efficiency (%)
 Calculation example : 83°F = 91.4°F - (91.4°F - 78.8°F) × 67%

*The above applies to the case of LGH-F600RVX2-E (fan speed 4).

In winter

Air similar to the conditions of heated (humidified) indoor air is supplied.

	LOSSNAY	Conventional ventilator
Dry bulb temperature (°F)	56.1	32.0
Absolute humidity (lb/lb(DA))	0.0051	0.0019
Relative humidity (%)	54	50
Enthalpy (Btu/lb(DA))	11.3	2.0
Total energy recovery (kW)	7.4	0
Outdoor air load (kW)	4.1	11.5
Outdoor air load ratio (%)	36	100

Room air		Outdoor air	
Dry bulb temperature	68.0°F	Dry bulb temperature	32.0°F
Absolute humidity	0.0073 lb/lb(DA)	Absolute humidity	0.0019 lb/lb(DA)
Relative humidity	50%	Relative humidity	50%
Enthalpy	16.6 Btu/lb(DA)	Enthalpy	2.0 Btu/lb(DA)

Heat recovery calculation
 Indoor supply-air = (Indoor temperature (°F) - Outdoor temperature (°F)) × Temp recovery efficiency (%) + Outdoor temperature (°F)
 Calculation example : 56°F = (68°F - 32°F) × 67% + 32°F

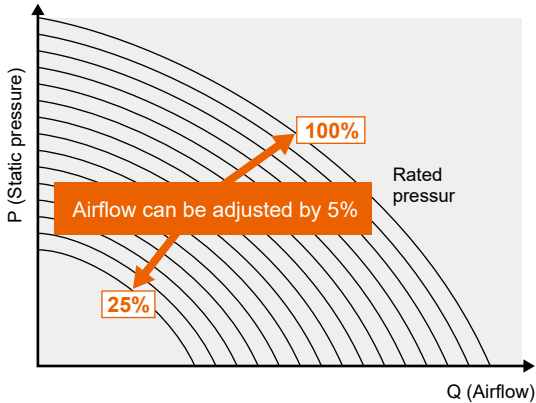
*The above applies to the case of LGH-F600RVX2-E (fan speed 4).

Key Features

Improved airflow range

- Variable air control

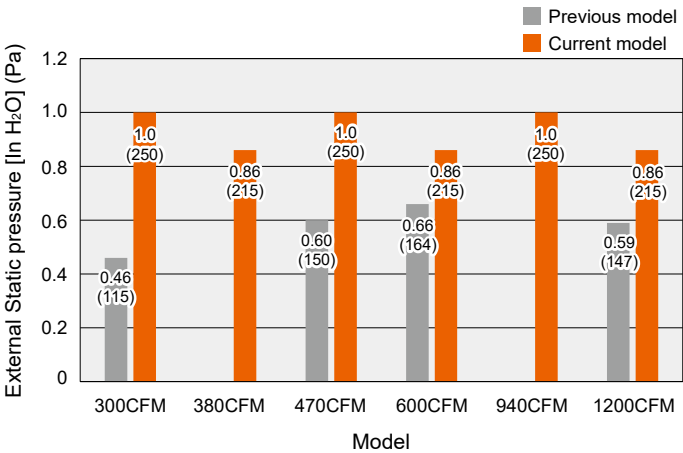
The default fan speed value (Fan speed 1: 25%, Fan speed 2: 50%, Fan speed 3: 75%, and Fan speed 4: 100%) of both supply air and exhaust air can be adjusted flexibly. Within the range between 25% and 100%, airflow can be adjusted by 5% increments to satisfactorily meet the designed airflow rate.



Improved static pressure

- External static pressure

External static pressure has been improved compared to previous models. By increasing the external static pressure, highly flexible duct work becomes possible thus renewal from existing equipment is easy.

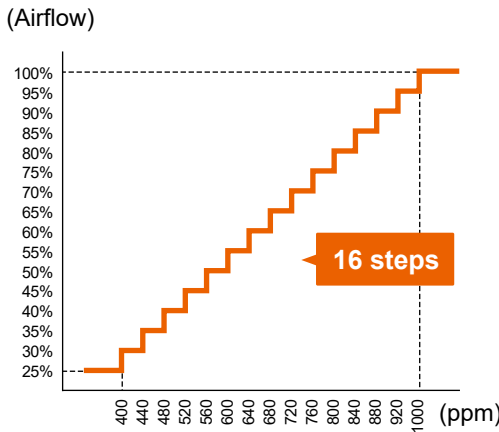


Airflow control by CO₂ sensor

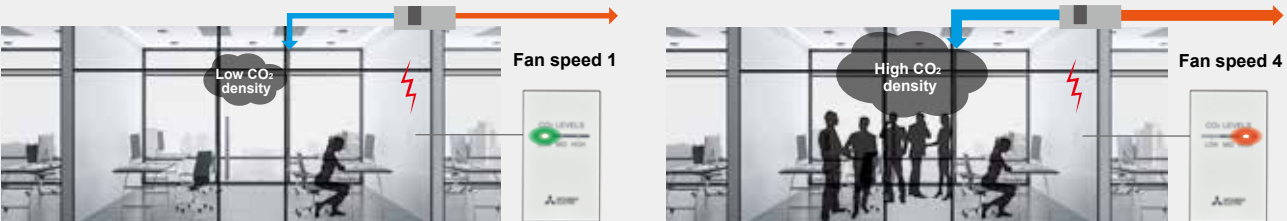
- CO₂ sensor

Fan speed automatically changes from 25% to 100% (16 steps) depending on the level of CO₂ concentration.

A CO₂ sensor connected directly to a lossnay FRVX2 unit optimizes the fan speed according to the level of CO₂ detected. It improves total heat exchange efficiency and contributes to energy saving.



Fan speed automatically changes depending on CO₂ concentration



Features

Night purge function

During the summer season, the Night Purge function draws cooler outside air into the room at night. This energy conservation mode reduces the load when the air conditioning is started up the next morning. With the current models, the start condition, airflow and operation time for Night Purge operation can be set*1 as desired to flexibly answer to the operating environment requests that vary with each customer.

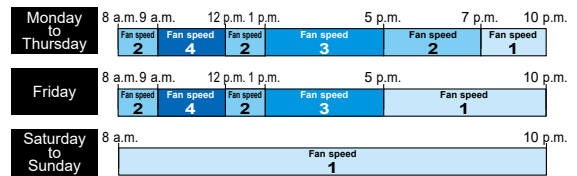
*1: Settings can only be made using the PZ-62DR-EA

Operating time	Start condition <small>(inside-outside temperature difference)</small>	Fan speed
Can be set to any desired time	Can be set between 0°F (0K (Kelvin)) and 12.6°F (7K)*2 (1.8°F (1K) increments)	Can be selected from 4 fan speeds (1 to 4)

*2: Difference 1K (Kelvin) = 1°C=1.8°F

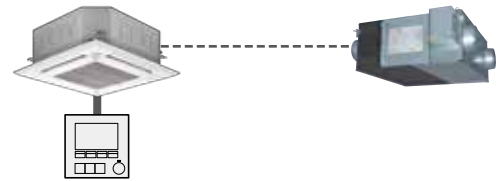
Weekly timer

The operation pattern for each day of the week, ON/OFF and airflow can be set using the weekly timer function (up to eight zones per day). Operation control contributes to enhanced energy-saving operation. With a wider range of airflow, the Lossnay FRVX2 units are able to optimize ventilation not just at different times of the day, but on different days of the week as well, for further energy savings.



Greater airflow range settings

Lossnay units can be operated by using Mr. Slim's or City Multi's remote controllers. When the low speed is selected on the remote controller, this model allows you to select from two fan speeds; Fan speed 1 or 2.



Mr. Slim City Multi	Low	Fan speed 1 or 2*
	High	Fan speed 3 or 4*

*Factory setting

Duct connection in two different directions (OA & EA sides)

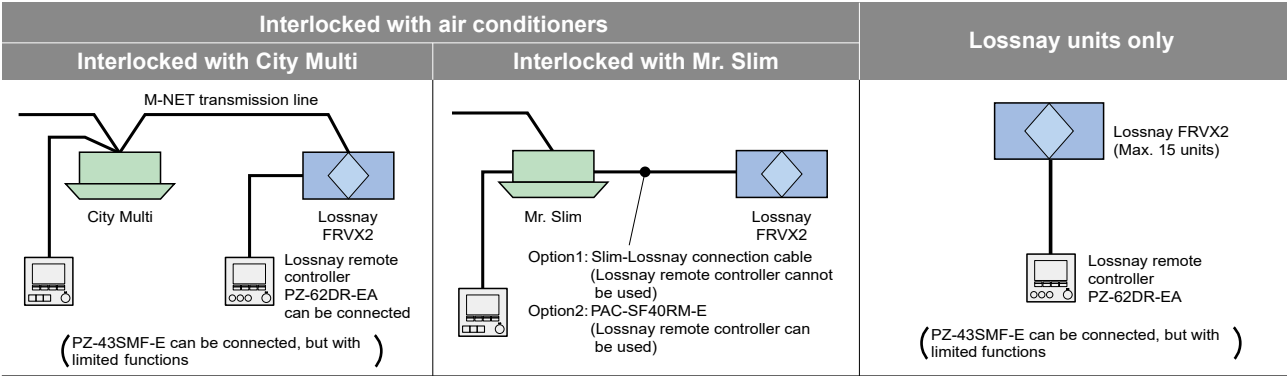
Ducts can be connected to the outdoor vent in two different directions, thanks to collars and aperture plates that can be interchangeably placed in two different positions. This flexibility allows for installations close to the surface of a wall and helps to avoid any blockage of the stale air exhaust vent by an obstruction of some kind. This makes both planning and installation much simpler.

Standard installation	Installation with duct direction changed	
<p>Space is necessary to prevent the influx of rainwater.</p> <p style="text-align: center;">EA ↓ ↑ OA</p>	<p>Can be installed close to the surface of the wall.</p> <p style="text-align: center;">EA ↓ ↑ OA</p>	<p>Installations where the stale air exhaust aperture would be blocked by lighting or air conditioning units can be avoided.</p> <p style="text-align: center;">EA ↓ ↑ OA</p>
<p>Flange Plate</p>	<p style="text-align: center;">Exchangeable</p> <p>Remove the flange (factory-standard direction) and the side panel plate and switch their places. They are both equipped with screw stoppers to make the switch extremely simple. The direction of the ducts can only be changed on the outside (OA and EA). It cannot be changed on the inside (SA and RA).</p>	

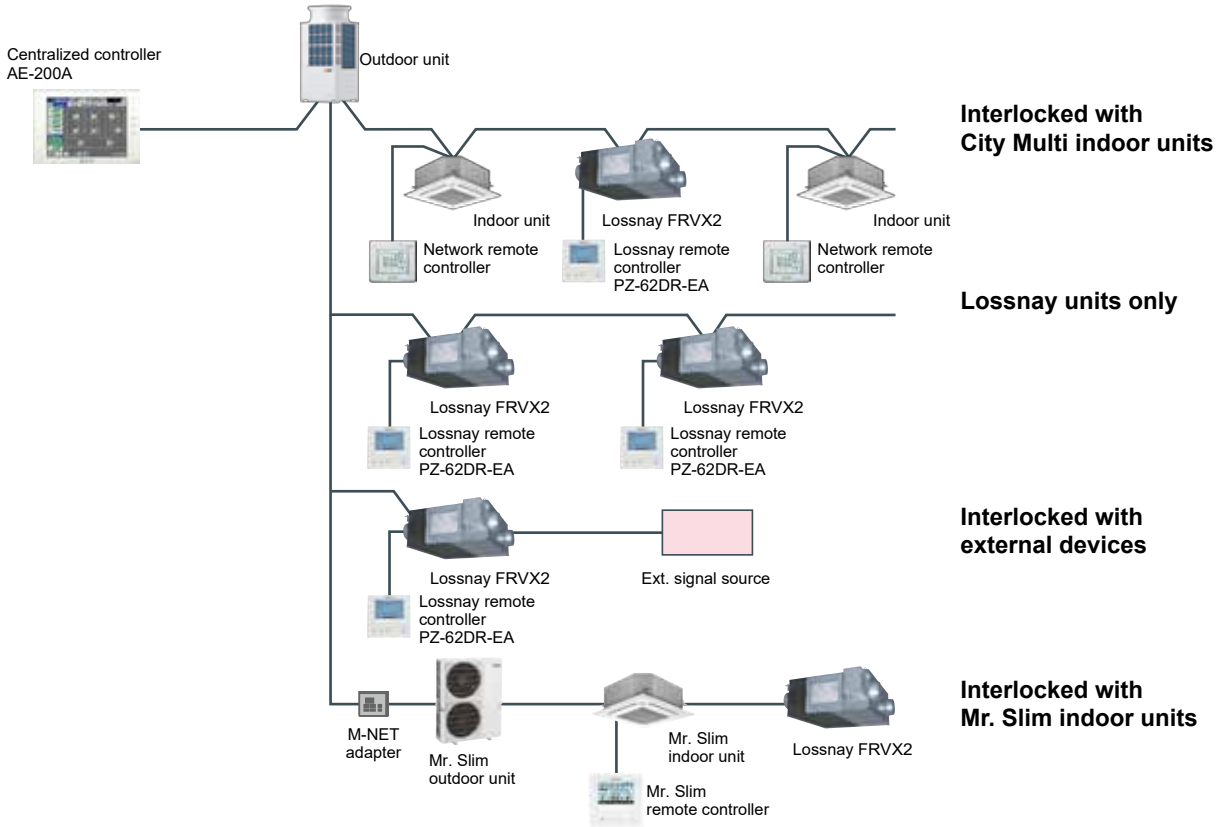
Controller system

Control setting

- Simple control setting with PZ-62DR-EA remote controller



Centralized controller system

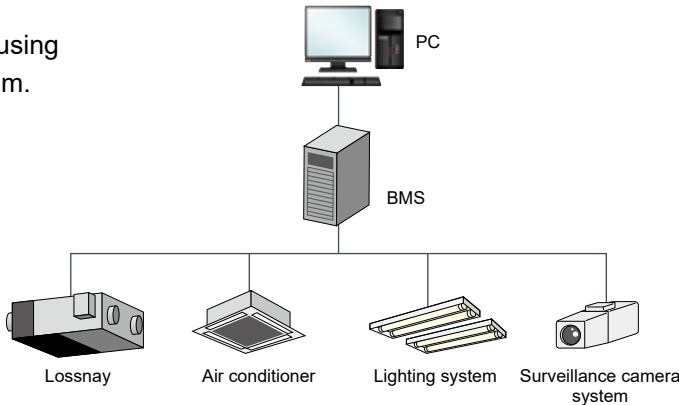


Control with a BMS

The airflow of the Lossnay unit can be changed by using a 0-10V signal from the building management system.

Connection example: BMS (Building Management System)

Input voltage [VDC]	Fan speed	Fan speed change from remote controller
0 - 1.0	-	Available
1.5 - 2.5	1	Not available
3.5 - 4.5	2	Not available
5.5 - 7.0	3	Not available
8.5 - 10.0	4	Not available



SPECIFICATIONS / DIMENSIONS

Model		LGH-F300RVX2-E				LGH-F380RVX2-E							
Electric power supply		Single phase 208-230V 60Hz				Single phase 208-230V 60Hz							
Ventilation mode		Heat recovery mode				Heat recovery mode							
Fan speed		100%	75%	50%	25%	100%	75%	50%	25%				
Input power (W)		235	111	48	17	340	165	65	20				
Airflow	(CFM)	300	225	150	75	380	285	190	95				
	(m ³ /h)	510	382	255	127	646	484	323	161				
Specific fan power		(W/CFM)	0.78	0.49	0.32	0.23	0.89	0.58	0.34	0.21			
External static pressure (Pa)	(InH ₂ O)	1.00	0.56	0.25	0.06	0.86	0.48	0.22	0.06				
	(Pa)	250	141	63	16	215	121	54	14				
Exchange efficiency (%)	Temperature		65.5	70.0	76.0	83.0	65.0	69.5	75.0	82.0			
	Enthalpy	Heating	63.0	66.5	74.0	81.5	61.0	65.5	71.0	78.0			
		Cooling	50.0	53.5	58.0	65.0	49.0	53.5	60.0	68.0			
Noise (dB)		37.0	31.0	22.0	18.0	38.0	31.0	24.0	19.0				
External dimension H×W×D	in	34-15/16 x 40 x 13-1/32				35-3/4 x 37-9/16 x 15-29/32							
	mm	888 x 1016 x 331				908 x 954 x 404							
Net weight		lbs(kg)				75 (34)				90 (41)			

Model		LGH-F470RVX2-E				LGH-F600RVX2-E							
Electric power supply		Single phase 208-230V 60Hz				Single phase 208-230V 60Hz							
Ventilation mode		Heat recovery mode				Heat recovery mode							
Fan speed		100%	75%	50%	25%	100%	75%	50%	25%				
Input power (W)		425	220	110	47	515	270	120	47				
Airflow	(CFM)	470	353	235	118	600	450	300	150				
	(m ³ /h)	799	599	399	200	1019	765	510	255				
Specific fan power		(W/CFM)	0.90	0.62	0.47	0.40	0.86	0.60	0.40	0.31			
External static pressure (Pa)	(InH ₂ O)	1.00	0.56	0.25	0.06	0.86	0.48	0.22	0.05				
	(Pa)	250	141	63	16	215	121	54	13				
Exchange efficiency (%)	Temperature		69.0	73.0	77.5	84.5	67.0	73.0	76.5	81.0			
	Enthalpy	Heating	64.0	69.0	75.0	83.0	64.0	68.5	74.5	80.0			
		Cooling	51.0	57.0	64.0	72.0	50.0	56.5	64.5	71.0			
Noise (dB)		40.0	34.0	26.0	20.0	41.0	35.0	27.0	20.0				
External dimension H×W×D	in	45-1/16 x 39-1/2 x 15-29/32				45-1/16 x 48-1/2 x 15-29/32							
	mm	1144 x 1004 x 404				1144 x 1231 x 404							
Net weight		lbs(kg)				110 (50)				123 (56)			

Model		LGH-F940RVX2-E				LGH-F1200RVX2-E							
Electric power supply		Single phase 208-230V 60Hz				Single phase 208-230V 60Hz							
Ventilation mode		Heat recovery mode				Heat recovery mode							
Fan speed		100%	75%	50%	25%	100%	75%	50%	25%				
Input power (W)		850	440	220	94	1030	540	240	94				
Airflow	(CFM)	940	705	470	235	1200	900	600	300				
	(m ³ /h)	1597	1198	799	399	2039	1529	1019	510				
Specific fan power		(W/CFM)	0.90	0.62	0.47	0.40	0.86	0.60	0.40	0.31			
External static pressure (Pa)	(InH ₂ O)	1.00	0.56	0.25	0.06	0.86	0.48	0.22	0.05				
	(Pa)	250	141	63	16	215	121	54	13				
Exchange efficiency (%)	Temperature		69.0	73.0	77.5	84.5	67.0	73.0	76.5	81.0			
	Enthalpy	Heating	64.0	69.0	75.0	83.0	64.0	68.5	74.5	80.0			
		Cooling	51.0	57.0	64.0	72.0	50.0	56.5	64.5	71.0			
Noise (dB)		43.0	36.0	28.0	20.0	43.0	37.0	28.0	20.0				
External dimension H×W×D	in	45-1/16 x 39-1/2 x 31-13/16				45-1/16 x 48-1/2 x 31-13/16							
	mm	1144 x 1004 x 808				1144 x 1231 x 808							
Net weight		lbs(kg)				225 (102)				251 (114)			

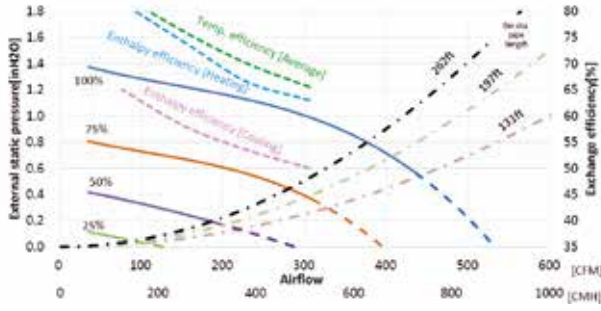
*The running current, the input power, the efficiency and the noise are based on the rating airflow.

*The noise is measured at 59 in (1.5 m) under the center of the unit in an anechoic chamber.

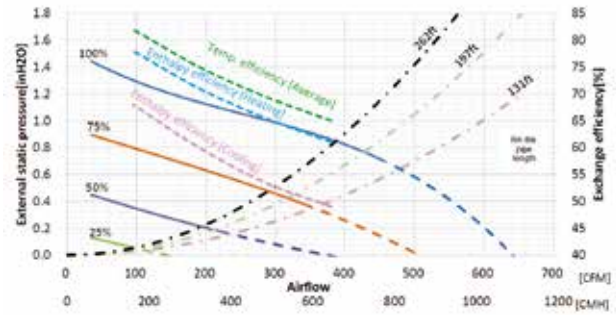
*Test condition: ISO 16494

Exchange efficiency temperature and humidity condition in the exchange efficiency is based in AHRI 1060 condition.

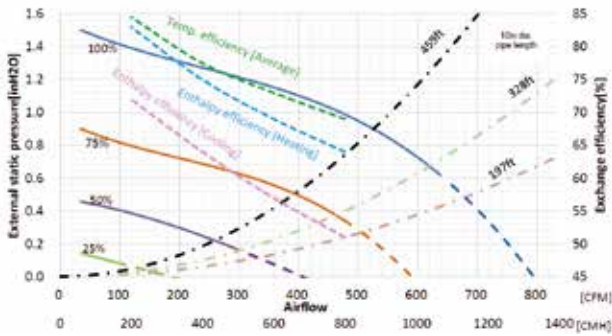
LGH-F300RVX2-E



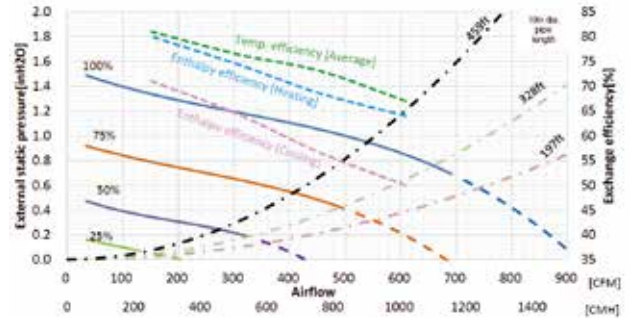
LGH-F380RVX2-E



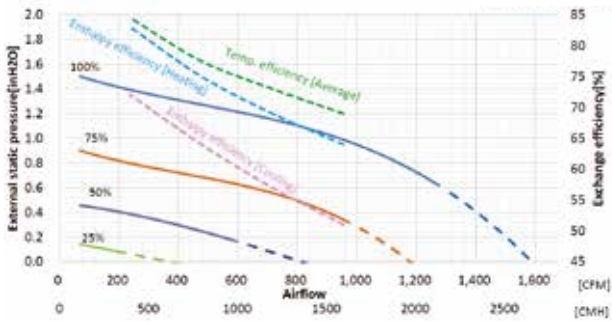
LGH-F470RVX2-E



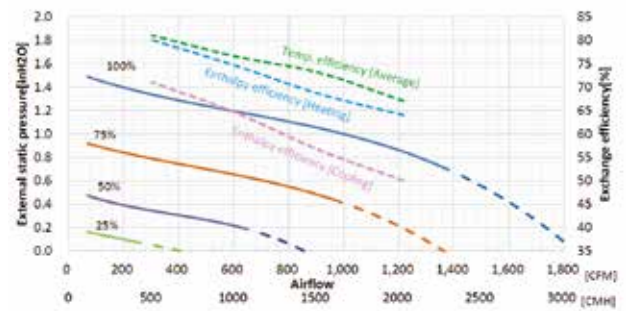
LGH-F600RVX2-E



LGH-F9400RVX2-E



LGH-F1200RVX2-E



*Dotted lines (---) of fan curve means unmeasurable area with ISO16494.

Filters

NEW



Standard filters

Filter material	Filter			Lossnay		
	Classification		Model name	Included piece/set	Applicable model	Required filter set
	ISO16890-2016	ASHRAE 52.2 (2017)				
Non-woven fabrics filter	-	MERV7	PZ-50RF9-E	4	LGH-F300RVX2-E	1
			PZ-65RF9-E	4	LGH-F380RVX2-E	1
			PZ-80RF9-E	4	LGH-F470RVX2-E	1
					LGH-F940RVX2-E	2
			PZ-100RF9-E	4	LGH-F600RVX2-E	1
LGH-F1200RVX2-E	2					

High-efficiency filters



Filter material	Filter			Lossnay		
	Classification		Model name	Included piece/set	Applicable model	Required filter set
	ISO16890-2016	ASHRAE 52.2 (2017)				
Non-combustible fiber	ePM ₁₀ 70%	MERV14	PZ-50RFP-E	2	LGH-F300RVX2-E	1
			PZ-65RFP-E	2	LGH-F380RVX2-E	1
			PZ-80RFP-E	2	LGH-F470RVX2-E	1
					LGH-F940RVX2-E	2
			PZ-100RFP-E	2	LGH-F600RVX2-E	1
LGH-F1200RVX2-E	2					

Advanced high-efficiency filters



Filter material	Filter			Lossnay		
	Classification		Model name	Included piece/set	Applicable model	Required filter set
	ISO16890-2016	ASHRAE 52.2 (2017)				
Synthetic fiber	ePM ₁ 75% ePM _{2.5} 80% ePM ₁₀ 95%	MERV16	PZ-50RFP ₂ -E	2	LGH-F300RVX2-E	1
			PZ-65RFP ₂ -E	2	LGH-F380RVX2-E	1
			PZ-80RFP ₂ -E	2	LGH-F470RVX2-E	1
					LGH-F940RVX2-E	2
			PZ-100RFP ₂ -E	2	LGH-F600RVX2-E	1
LGH-F1200RVX2-E	2					

Remote controller

The remote controller provides a wide range of functions and features.



PZ-62DR-EA



PZ-43SMF-E

CO₂ sensor

For monitoring CO₂ level and optimize operation with variable air flow control according to CO₂ level.



PZ-70CSW-E
(Wall mounted type)



PZ-70CSB-E
(Built-in type)

Signal output terminal

Signal output terminal for control



PZ-4GS-E

Silencer duct



In facilities and applications requiring quiet operations, the silencer duct that reduces noise levels is the ideal solution. It contains glass wool and attenuates sound power by absorbing the noise from the airflow or operation of the unit.

Model name	Direction	Air flow CMF (m ³ /h)	Attenuation of sound power level [dB] for center frequency							
			62.5Hz	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz
PZ-200SS-E	Discharge	294CFM (500 m ³ /h)	0	1	4	7	13	18	16	9
		382CFM (650 m ³ /h)	0	1	3	8	12	17	14	6
	Suction	294CFM (500 m ³ /h)	0	1	4	8	11	17	14	8
		382CFM (650 m ³ /h)	0	0	3	7	10	11	12	5
PZ-250SS-E	Discharge	470CFM (800 m ³ /h)	0	2	4	12	22	21	14	13
		588CFM (1000 m ³ /h)	0	1	4	12	22	20	14	13
	Suction	470CFM (800 m ³ /h)	0	3	5	12	18	14	11	4
		588CFM (1000 m ³ /h)	0	2	4	12	17	16	13	8

1. Figures on the chart above are based on the comparison with a general steel duct of the same length.
2. The silencer is placed on just before the outlet during the measurement.
3. When the airflow rate differs, the insertion loss is also different from the chart above.
4. Figures on the chart above are flat (No-weighted) values.

List of optional parts

Optional Parts		Lossnay	LGH-F300RVX2	LGH-F380RVX2	LGH-F470RVX2	LGH-F600RVX2	LGH-F940RVX2	LGH-F1200RVX2
Remote Controller	PZ-62DR-EA	●	●	●	●	●	●	●
	PZ-43SMF-E	●	●	●	●	●	●	●
CO ₂ Sensor	PZ-70CSB-E	●	●	●	●	●	●	●
	PZ-70CSW-E	●	●	●	●	●	●	●
Silencer Duct	PZ-200SS-E	●	●					
	PZ-250SS-E			●	●	●	●	●
Signal Output Terminal	PZ-4GS-E	●	●	●	●	●	●	●