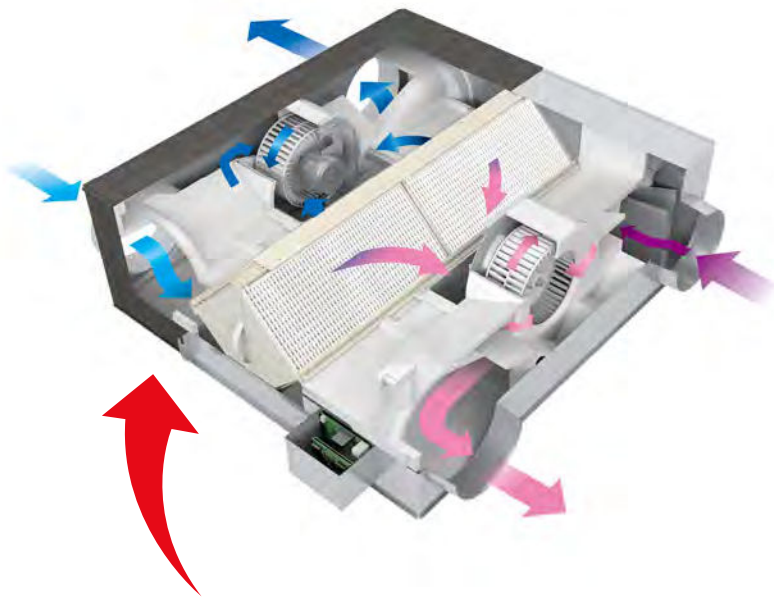




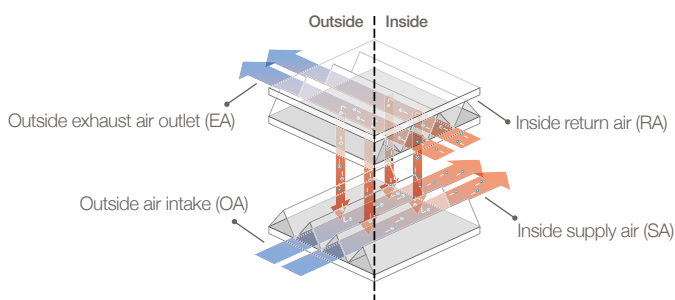
Introducing Lossnay

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

The diagram below provides an overview of how this process takes place inside of the Lossnay system.



The concept of sensible heat and latent heat exchange using Lossnay core





Contents

| | |
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Line Up

Lossnay by Mitsubishi Electric is an advanced Fresh Air Heat Recovery Ventilation System that captures and filters fresh outdoor air to replace indoor stale air for an all-round healthier, drier and warmer home. But what makes Lossnay so different from other ventilation systems is our patented Heat Exchanger, which is the source of the heat recovery capabilities of the Lossnay ventilation unit and provides several important benefits.



LGH-RVX Series

This commercially oriented system can be utilised virtually anywhere with high performance functions.



LGH-RVXT Series

Thin large air volume models in LGH series with high performance functions.



GUF Series

Heat recovery with heating and cooling system using the heat resource of City Multi outdoor unit.



VL-220CZGV-E

Centralised ventilation for residential use with sensible heat exchange.

| Application | Model | Air Volume | 150 CMH | 250 CMH | 350 CMH | 500 CMH | 650 CMH | 800 CMH | 1000 CMH | 1500 CMH | 2000 CMH | 2500 CMH |
|-----------------|-----------------|------------|---------|---------|---------|---------|---------|---------|----------|----------|----------|----------|
| Commercial Use | LGH-RVX Series | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | LGH-RVXT Series | | | | | | | | | ✓ | ✓ | ✓ |
| | GUF Series | | | | | ✓ | | | ✓ | | | |
| Residential Use | VL-220CZGV-E | | | ✓ | | | | | | | | |

*While every effort has been made to represent product colours herein accurately, slight deviations from actual colour may be noted due to the printing process.

The Need for Ventilation

The Need for Fresh Air

Poor air quality can be attributed to many problems arising in the workplace and in the home. It is believed to contribute to a significant loss in productivity, low morale and higher rates of sickness. Providing good ventilation in residential and commercial buildings is to provide conditions under which people can live and work comfortably and safely.

Effect of oxygen deficiency on the human body

| | Oxygen concentration (%) |
|---|--------------------------|
| Normal air concentration | 21% |
| Safe limit | 18% |
| Breathing / Pulse increases headaches, nausea, vomiting | 16% |
| Dizziness, nausea, muscle weakness (leading to death) | 12% |
| Facial pallor, unconscious vomiting | 10% |
| Lapse into a coma and die in 8 minutes | 8% |
| Respiratory arrest, convulsion, death | 6% |

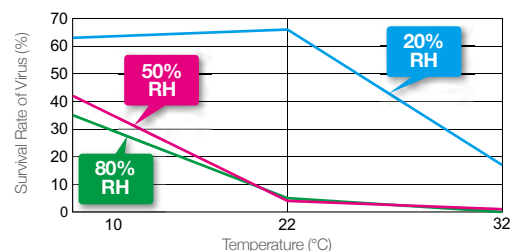
Source: SE Series "Safety of New Construction" Author: "Oxygen Deficiency" Doctor of Medicine/ Hiroshi Yamaguchi, issued by Research Institute for Safety Engineering

The Need for Appropriate Humidity Management

Viruses such as influenza are found to be active and the survival rate is high in low humidity and dry environments.

In general, the survival rate is said to decrease significantly when the relative humidity (RH) is 50% or more when the temperature is 20°C. During the winter, keeping an appropriate humidity and heating temperature can help prevent influenza.

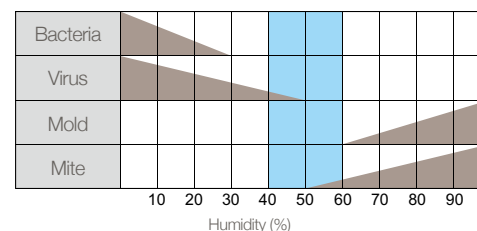
Influenza virus survival rate



Source: Survival rate after 6 hours by G.J. Harper, Takehito Takano and other "Health Housing Science Seminar"

Activity range of microorganisms by humidity range

► Optimum range for human health ► Size of Energy



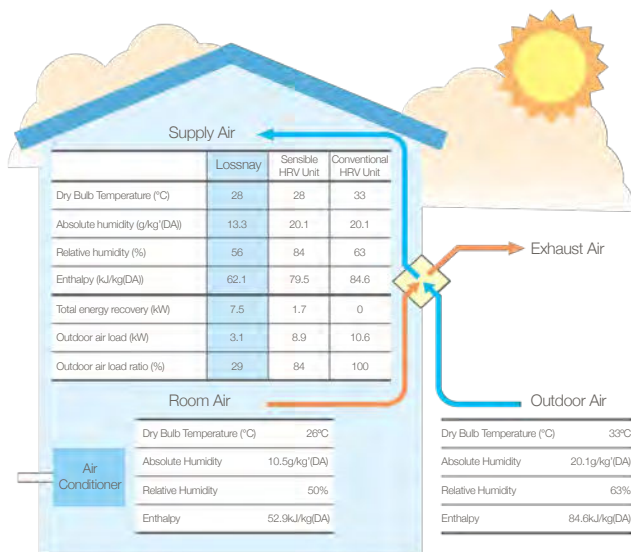
Source: ASHRAE Trans. 91 - 1B (1985)

What can be improved by introducing Lossnay?

Ventilation with maximised comfort.

In Summer:

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



Heat Recovery Calculation

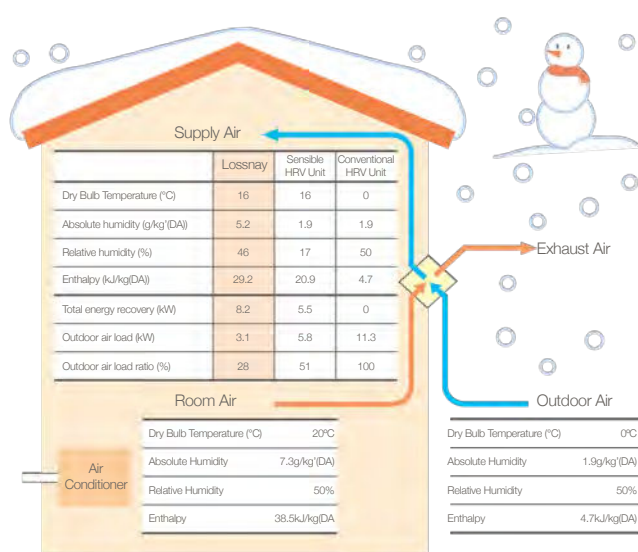
$$\text{Indoor Supply Air Temperature (°C)} = \text{Outdoor Temperature (°C)} - \left\{ \text{Outdoor Temperature (°C)} - \text{Indoor Temperature (°C)} \right\} \times \text{Temp Recovery Efficiency (\%)} + \text{Indoor Temperature (°C)}$$

Calculation example: $28^{\circ}\text{C} = 33^{\circ}\text{C} - (33^{\circ}\text{C} - 26^{\circ}\text{C}) \times 72\%$

*The above applies to the case of LGH-100RVX (fan speed 4).

In Winter:

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



Heat Recovery Calculation

$$\text{Indoor Supply Air Temperature (°C)} = \left\{ \text{Indoor Temperature (°C)} - \text{Outdoor Temperature (°C)} \right\} \times \text{Temp Recovery Efficiency (\%)} + \text{Indoor Temperature (°C)}$$

Calculation example: $16^{\circ}\text{C} = (20^{\circ}\text{C} - 0^{\circ}\text{C}) \times 80\% + 0^{\circ}\text{C}$

*The above applies to the case of LGH-100RVX (fan speed 4).

Mitsubishi Electric Air Management

For a healthier, more comfortable workplace and home.

OUR SOLUTIONS FOR BETTER AIR MANAGEMENT

Mitsubishi Electric has developed the Lossnay in order to better manage the air in highly populated indoor environments such as workplaces and homes. These areas require complex systems in order to move fresh comfortable air throughout. However each of these are distinctly different in their requirements.



LGH-RVXT Series



VL-220CZGV-E

WORKPLACE BENEFITS

The Lossnay Fresh Air Energy Recovery Systems set a new standard in ventilation by recovering heat from the air inside your office and transferring it to fresh, dry air introduced from outside. Not only providing energy recovery savings in summer by cooling the warmer fresh air to an acceptable level but also providing excellent energy efficiency in winter. Lossnay heat exchangers have an efficiency of approximately 82%* thereby eliminating the need for additional electric elements.



Easy Installation

- Installable in tight ceiling spaces.



Energy Efficiency

- Heat recovery ventilation.
- Scheduled ventilation programs.



Improve Indoor Air Quality

- Ventilation on demand.
- Simultaneous air supply and exhaust.

*Refer to calculations on the bottom of the page 5.

FEATURES

Below are some key features of the Lossnay system as a whole, followed by an outline of benefits as they pertain to both the workplace and home environments.



Energy Saving

A highly efficient EC motor operates at a lower energy consumption. Heat recovery ventilators also help to reduce the load on air conditioning system.



Comfort

Heat Recovery ventilation and low noise operation assures a comfortable indoor environment.



Clean

Ventilation and clean, fresh air contribute to a healthy living environment.

HOUSEHOLD BENEFITS

Lossnay is the ultimate home ventilation system that provides fresh clean air. Featuring the new advanced Diamond Heat Exchanger, heat is recovered from both outgoing stale air as well as from damp areas such as kitchens and bathrooms. This heat is utilised to pre-heat incoming fresh air so your heating system is not required to work as hard to maintain desired room temperature.



Quiet and Comfortable Operation

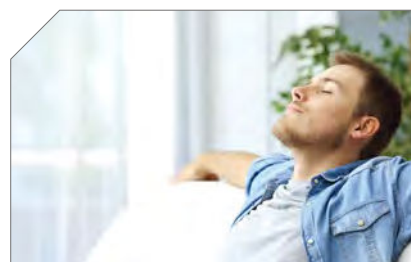
- Quieter operation*.
- Minimises temperature difference.
- Filter cuts pollen and dust for fresh clean air.

*Measured on the lowest fan speed.



Save on Energy Costs

- Minimise energy consumption.
- Heat recovery ventilation.



Maintain a Healthy Living Environment

- 24 hours ventilation.
- Simultaneous air supply and exhaust.

LGH Series

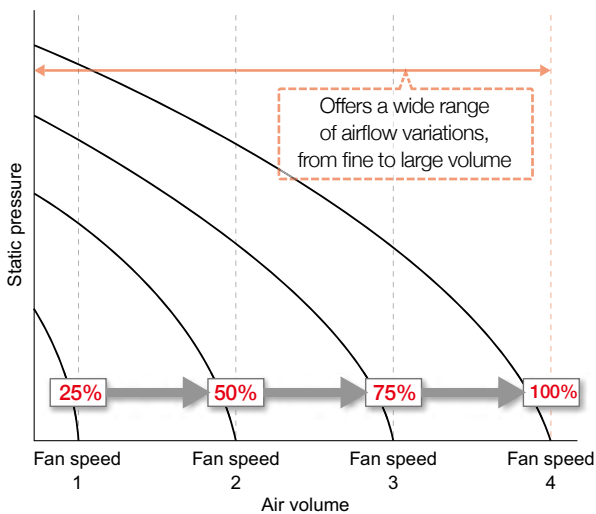
IMPROVED AIR VOLUME RANGE

Wide Range Air Volume

The LGH-RVX/RVXT are equipped with four fan speeds. In addition, each speed has a range setting of 25, 50, 75 and 100%, allowing much finer air volume control.

When used in combination with the CO₂ sensor or timer function, the air volume can be controlled according to conditions that produce better performance and reduce power consumption.

LGH-RVX/RVXT Series Model Characteristic Curves

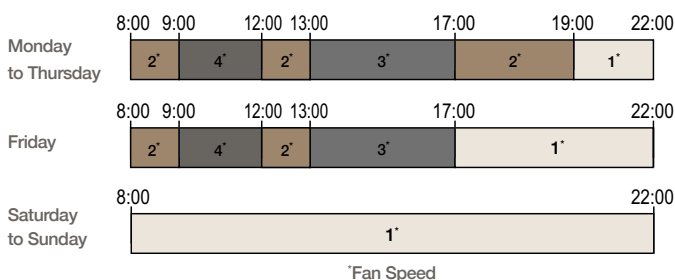


Weekly Timer

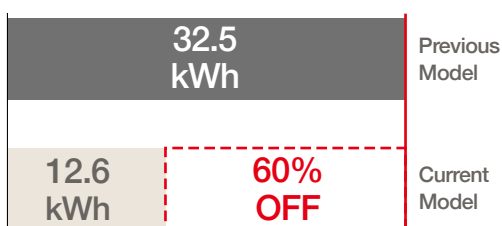
The operation pattern for each day of the week, On/Off and air volume can be set using the weekly timer function (up to eight zones per day).

Compared to previous models, much finer operation control contributes to enhanced energy saving operation. With a wider range of air volumes the Lossnay RVX/RVXT units enable optimised ventilation not just at different times of the day, but for different days of the week as well, enabling further energy savings.

LGH-RVX/RVXT Series Model



Total Power Consumption in a Week



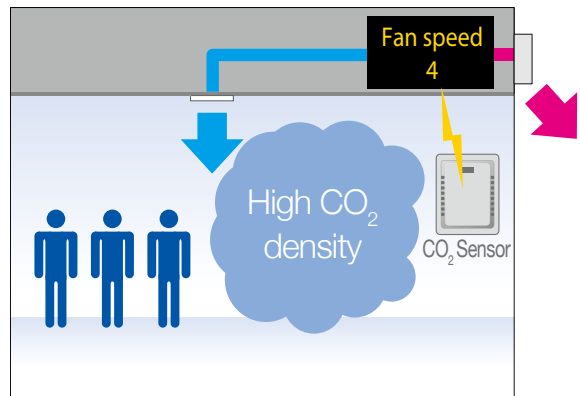
*Comparison of LGH-100RX5-E and LGH-100RVX-E.

Air Volume Control by CO₂ Sensor

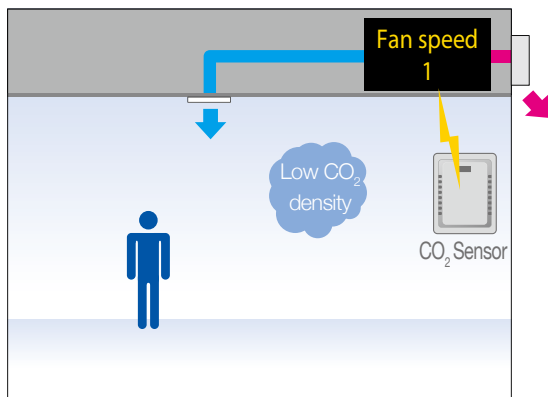
An external CO₂ sensor can be connected directly to the Lossnay RVX/RVXT units, allowing the fan speed to vary according to the CO₂ levels detected.

When the CO₂ concentration is low, the unit can operate at a lower air volume compared to previous models and this improves total heat exchange efficiency and contributes to energy saving.

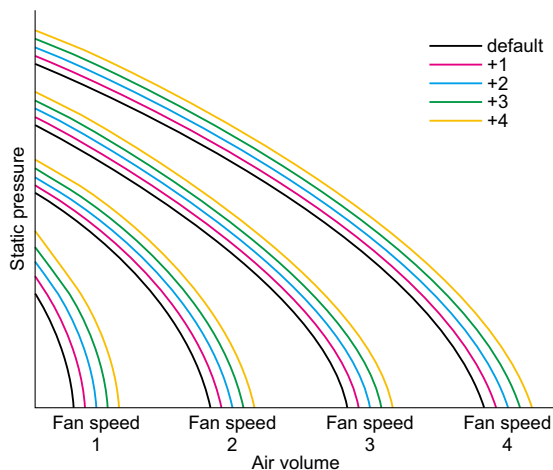
Fan Speed 4



Fan Speed 1



P-Q Curve Image



Improved External Static Pressure

External static pressure has been improved compared to previous models.

By increasing the external static pressure, flexible duct work installation is possible thus, allowing flexibility with existing installations.

Fan Speed Adjustment Function

The default fan speed value can be adjusted slightly. Use the PZ-61DR-E remote controller to reset the speed.

1. The fan speed will be adjusted automatically after a given period of time to allow for increased filter static.
2. After the unit is installed, if the air volume is slightly lower than the desired airflow, it is possible to make fine adjustments from the unit's dip switches.

IMPROVED INSTALLATION

Connect ducts in two different directions (OA, EA side)

Ducts can be connected in two different directions to the outdoor vents, 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 avoid cases where the stale air exhaust vent would be blocked by an obstruction of some kind. This makes both planning and installation that much simpler.

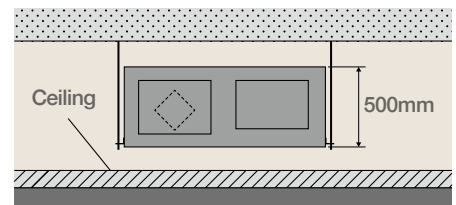
| Standard installation | Installation with duct direction changed | |
|---|---|---|
| <p>A space is necessary to prevent the influx of rainwater.</p> | <p>Can be installed close to the surface of the wall.</p> | <p>Avoid installations where the stale air exhaust aperture would be blocked by lighting or air conditioning units.</p> |
| <p>Flange</p> <p>Plate</p> | <p>Changing the duct direction</p> <p>Exchangeable</p> | <p>Remove the flange (factory-standard direction) and the side panel plate and switch their placements. They are both equipped with screw stoppers making the switch extremely simple.</p> <p>The direction of the ducts can only be changed on the outside (OA and EA).</p> <p>The inside cannot be changed (SA and RA).</p> |

OA/EA square duct (LGH-150 / 200RVX-E)

OA/EA is a square duct. This simplifies installation and reduces total installation time.

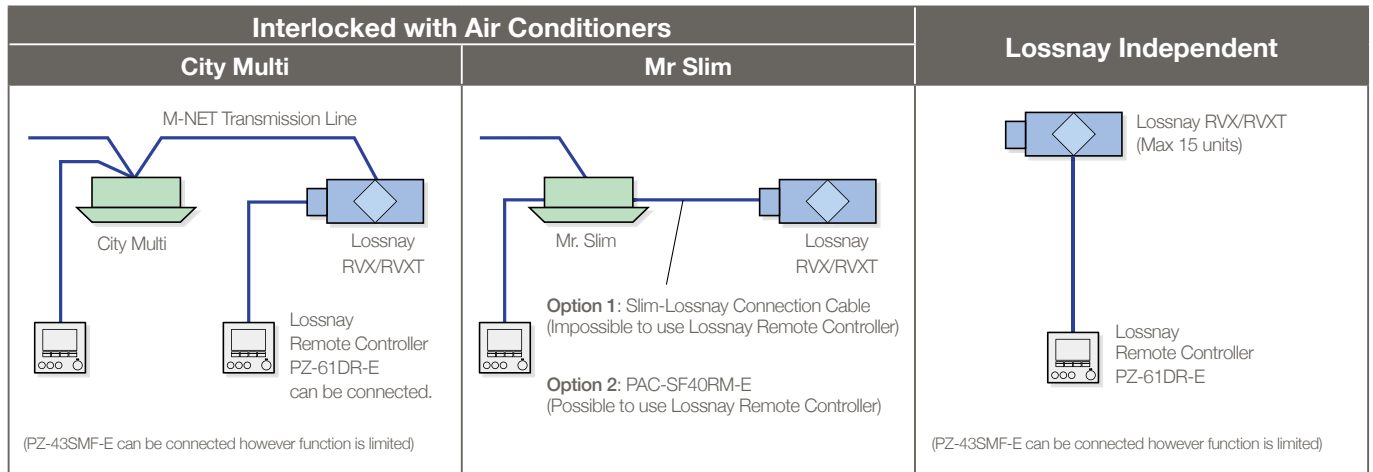
Thin new series (LGH-RVXT-E)

The LGH-RVXT-E series have a large air volume of 417 - 694 L/s, with a thin body at 500mm. Installing the unit behind the ceiling is easy.

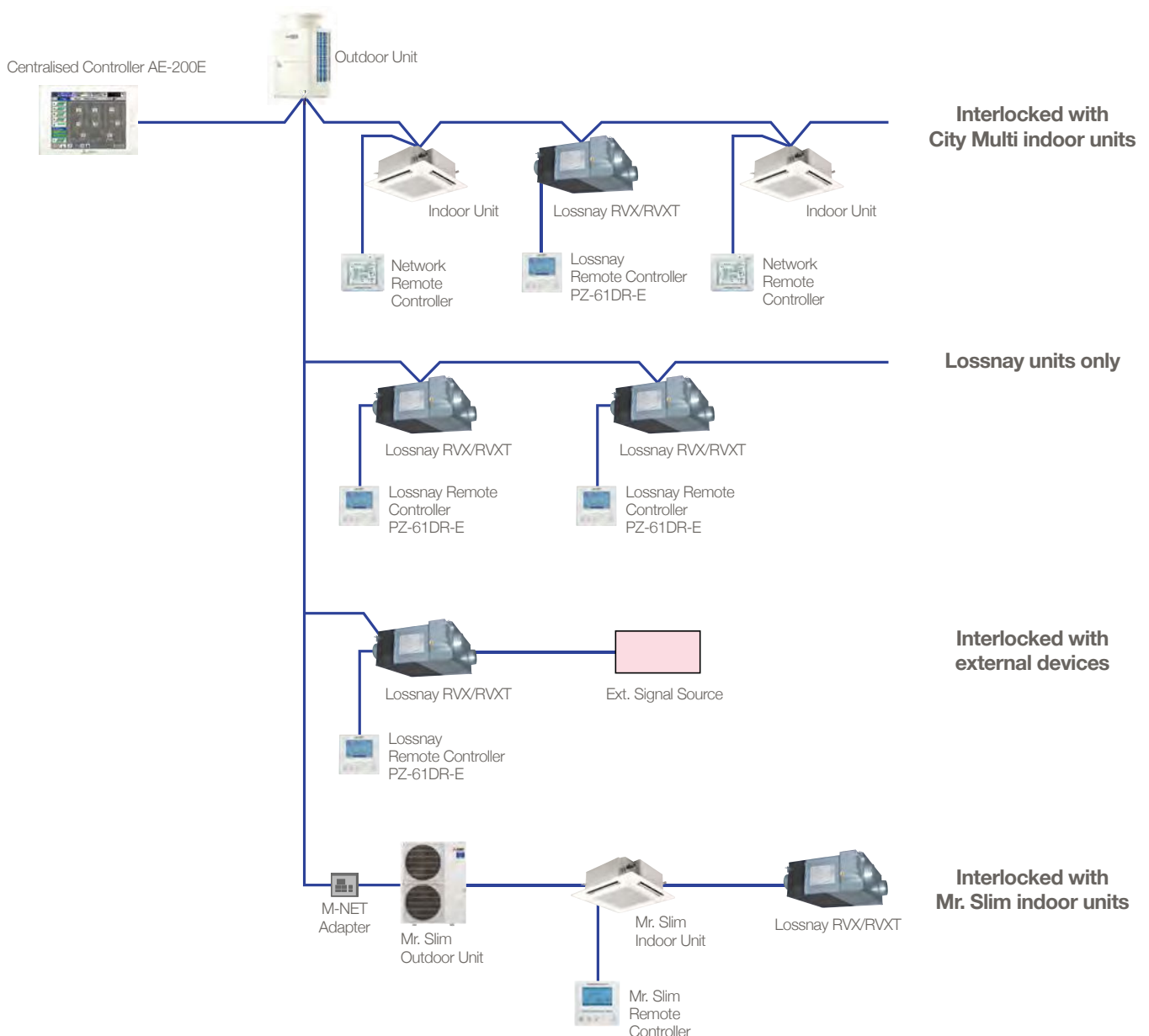


Control

SIMPLE CONTROL WITH THE PZ-61DR-E REMOTE CONTROLLER



CENTRALISED CONTROLLER SYSTEM



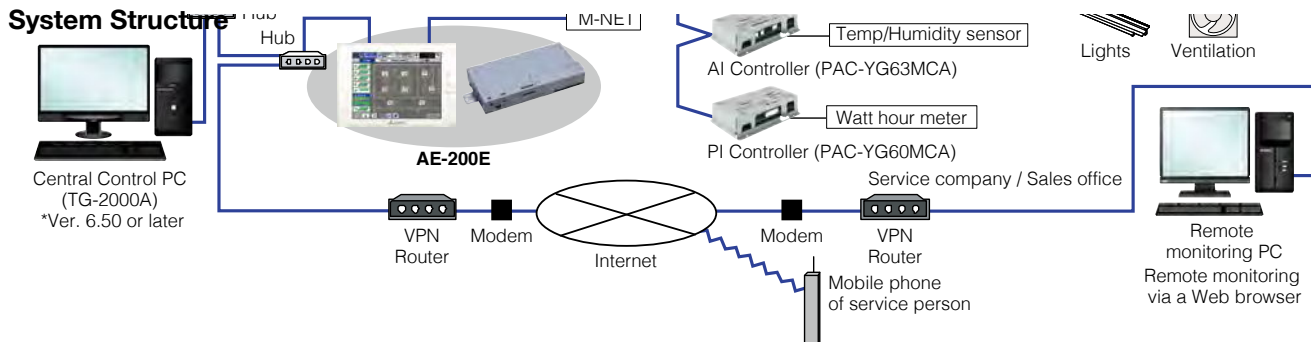
FEATURES OF CENTRALISED CONTROLLER “AE-200E”

In an easy and flexible manner, an optimum system can be established according to the scale of the facilities.

Control up to 50 indoor units of air conditioning equipment. By using three units of expansion controller “AE-50E”, the centralised control is capable of controlling a maximum of 200 units. Connection with PC allows implementation of control on more than 200 indoor units via Web Browser. *

*Please contact your local distributor for when the feature is required.

System Structure



□ : Each unit ○ : Each group ● : Each block △ : Each floor ◎ : Collective × : Not available

Note: Use a security device such as a VPN router when connecting the AG-150/AE200E to the Internet to prevent unauthorised access.

Function

□ : Each unit ○ : Each group ● : Each block △ : Each floor ◎ : Collective × : Not available

| Item | Description | Operations | Display |
|------------------------------------|---|------------|---------|
| Controllable number of unit | Up to 50 units/50 groups | | |
| On/Off | ON and OFF operation for the air conditioning units and general equipment. (To operate general equipment, PAC-YG66DCA is required.) | ○○△● | ○○ |
| Operation mode | Switches between several operation modes depending on the air conditioning unit. Air conditioning unit : Cool/Dry/Auto(*)/Fan/Heat LOSSNAY unit : Heat Recovery/Bypass/Auto CAHV, Air To Water (PWFY) units : Heating, Heating ECO, Hot Water, Anti-freeze, Cooling(**) * Auto mode is for CITY MULTI R2 and WR2 series only. ** Only PWFY | ○○△● | ○ |
| Temperature setting | Cool/Dry : 19°C -35°C [14°C -30°C] Heat : 4.5°C -28°C [17°C -28°C] Auto : 19°C -28°C [17°C -28°C] The range of temperature depends on the air conditioning unit. [] in case of using middle-temperature on PDFY, PEFY-VML/VMR/VMS/VMH-by setting DipSW7-1 to ON. PEFY-P-VMH-E-F is excluded. | ○○△● | ○ |
| Fan speed setting | Models with 4 air flow speed settings : Hi/Mid-2/Mid-1/Low Models with 3 air flow speed settings : Hi/Mid/Low Models with 2 air flow speed settings : Hi/Low Fan speed setting (including Auto) varies depending on the model. | ○○△● | ○ |
| Air flow direction setting | Air flow direction angles, 4-angles or 5-angles Swing, Auto (Louver cannot be set). | ○○△● | ○ |
| Schedule operation | Weekly schedule can be set by groups based on daily operation pattern. | ○○△● | ○ |
| Permit/prohibit local operation | Individually prohibits operation of each local remote controller function. (On/Off, Operation mode, Set temperature, Filter sign reset, Air Direction*, Fan Speed*, Timer*) * This function depends on the model. | ○○△● | ○ |
| Indoor unit intake temperature | Measures the intake temperature of the indoor unit only when the indoor unit is operating. | × | ○ |
| Error | When an error is currently occurring on an air conditioning unit, the afflicted unit and the error code are displayed. | × | □◎ |
| Test run | This operates air conditioning units in test run mode. | ○○△● | ○ |
| Ventilation interlock | The ventilation unit (LOSSNAY) is able to automatically start its operation when operation of the interlocked indoor unit starts. | ○○△● | ○ |
| External input/output | By using optional external input/output adapter (PAC-YG10HA-E) you can set and monitor the following. Input : By level signal : "Batch On/Off", "Batch emergency stop" By pulse signal : "Batch On/Off", "Enable/disable local remote controller" Output : "On/Off", "Error/Normal" | ◎ | ◎ |
| Energy Management | Bar Graph : Indoor unit Electric Energy, FAN operation time, Thermo-ON time (TOTAL, Cooling, Heating) can be displayed hourly, daily and monthly. Line Graph : Outdoor temp., Room temp., Set temp. (Heating, Cooling) Input from PAC-YG63MCA and temp. From AHC. | × | □○● |
| Advanced HVAC Controller (AHC) | The status of AHC can only be monitored. | × | ○ |
| Smart ME controller | The status of sensor on this controller can be monitored. | × | ○ |
| Smartphone/Tablet | The specified Web browser on iOS and Android OS can monitor and operate AE-200E. *2 | ○ | ○ |
| New Web design | The web screen design is renewed for user friendly interface. *2 | ○○△● | ○ |
| Initial setting software | The initial setting can be configured without the connection of AE-200E. *2 | × | × |
| Apportionment of power consumption | Apportionment of power consumption can be calculated on AE-200 without TG-2000A. *2 | ● | □● |
| BACnet® communication | ANSI/ASHRAE 135-2010 (ISO16484-5) is supported and approved by the BTL. *2 | ○ | × |

*2 Please contact your local distributor for when the feature is required.

Energy Saving Features

FLEXIBILITY IN SETTING NIGHT PURGE AND AUTO VENTILATION HAVE IMPROVED

Night Purge

During the summer season, the Night Purge mode 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 new models, it is possible to manually engage and set* the night purge operation.

* Settings can only be made using the PZ-61DR-E.

Current Model

| Operating Time | Start Condition (inside-outside temperature difference) | Fan Speed |
|------------------------------|--|------------------------------|
| Possible to set to any time. | Can be set to between 0°C and 7°C (1°C increments) | Select from Fan Speed 1 to 4 |

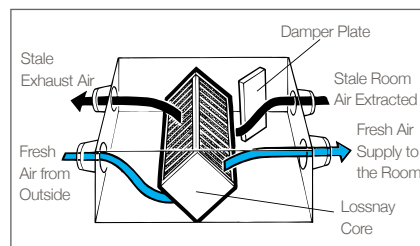
VENTILATION MODE SWITCHING

With operation from PZ-61DR-E, it is possible to select manual switching or automatic switching between "Lossnay ventilation (with heat exchange)" and "Bypass ventilation (without heat exchange)". With the previous model, the auto ventilation mode was based on the initial programmed setting; however, with the new model it is possible to set three setting points, as shown in the table on the right.

* Settings can only be made using the PZ-61DR-E.

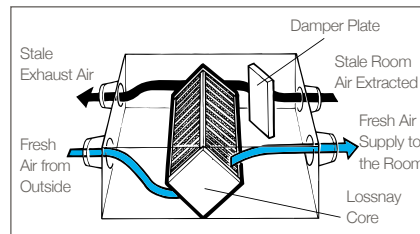
What is Lossnay Ventilation?

Room air is discharged to outside via Lossnay core. Heat exchanged outside air is supplied to the room. In summer and winter, air conditioning energy can be recovered by Lossnay unit.

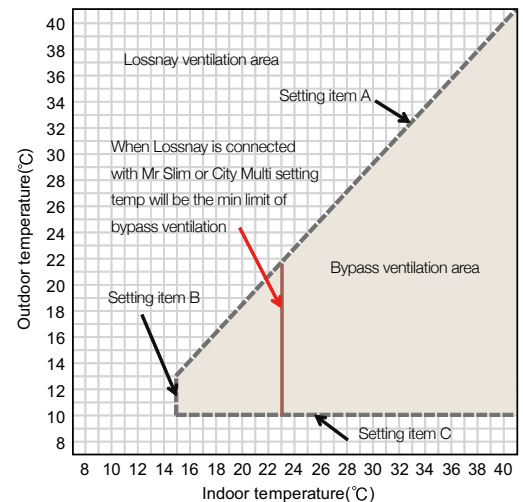


What is Bypass Ventilation?

Stale room air is discharged to outside without passing through the Lossnay core. In spring and autumn when air conditioning is not necessary, the unit operates in bypass ventilation mode.



Bypass/Lossnay Ventilation map in automatic ventilation mode

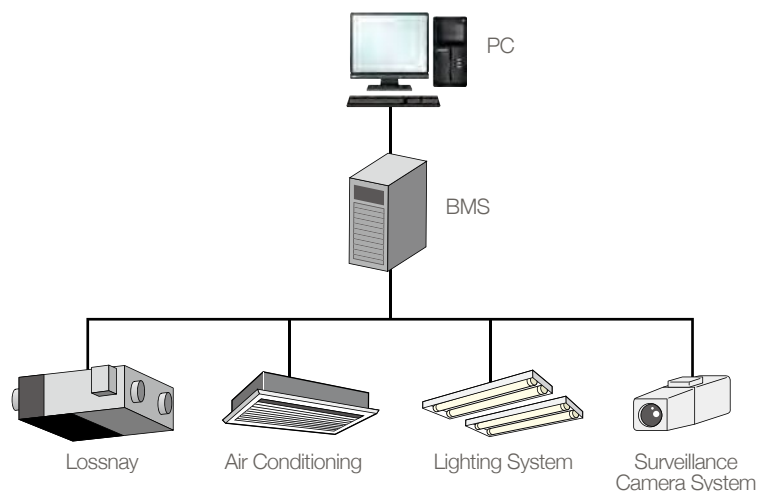


Improved Control with a BMS System

Using a 0-10V signal from the Building Management System, the air volume of the Lossnay unit can be changed.

Connection example: BMS (Building Management System)

| Input voltage [VDC] | Fan Speed | Fan Speed Changing 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 |



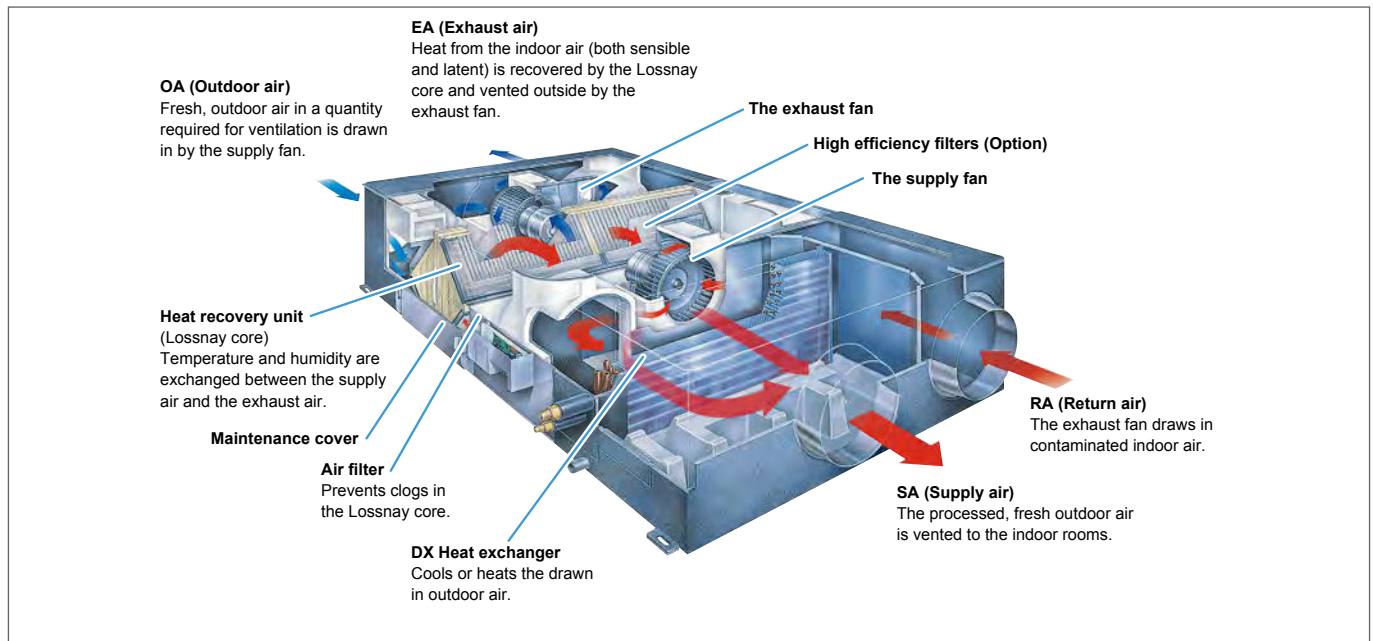
GUF Series

VENTILATION AND AIR CONDITIONING

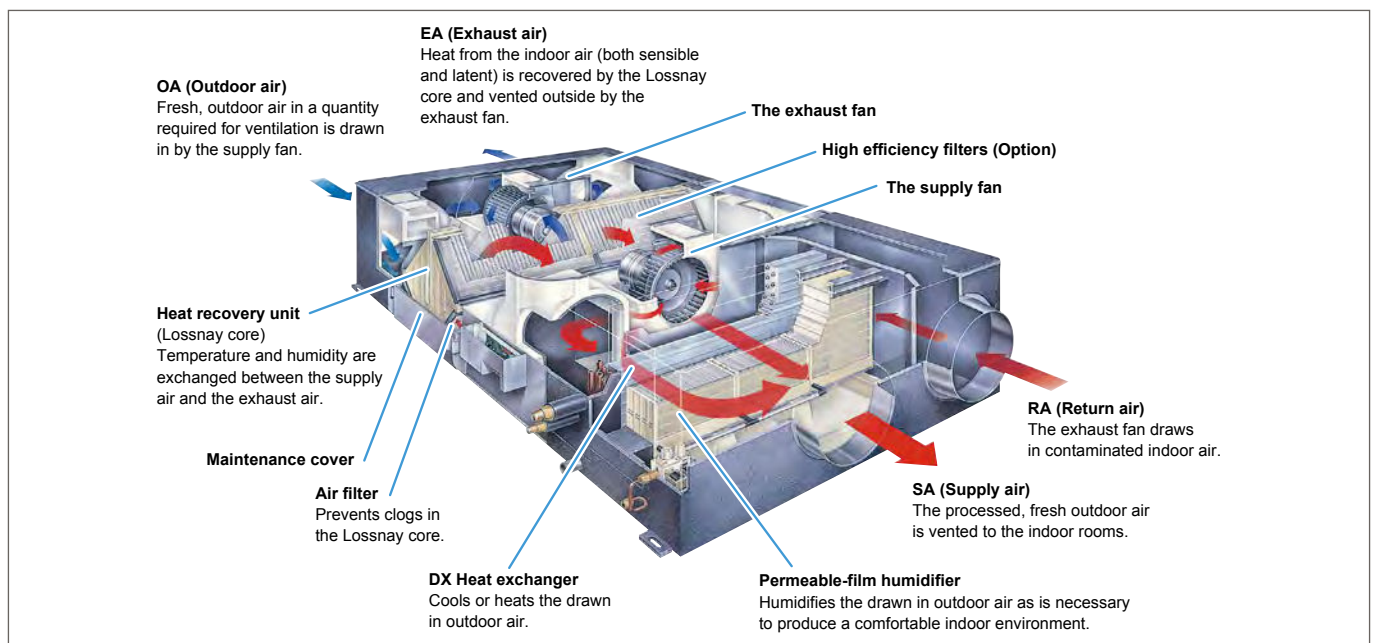
The OA (Outdoor air) Processing Unit creates an optimum environment while providing substantial energy savings. The OA Processing Unit comprises forced air ventilation, heat recovery, heating and cooling, and air purification. This total air conditioning system keeps indoor air fresh and comfortable all year round, and keeps it free of contaminants. Inside the OA Processing Unit is the Lossnay core, a heat exchange unit that transfers heat efficiently, cutting ventilation load by as much as 70%.

A remarkable product found nowhere else, this special combination of functionality and performance contained within a single unit ensures users ample comfort, good health, and energy savings.

GUF-RD type



GUF-RDH type



PERMEABLE FILM HUMIDIFIER (GUF-RDH ONLY)

Comfortable Level of Humidity for Exceptional Air Quality

The OA Processing Unit is equipped with a permeable film humidifier developed by Mitsubishi Electric. Steam transmission efficiency has been improved by lowering the resistance of the material. By providing an optimum level of humidity, the OA Processing Unit creates a comfortable interior environment which may prevent irritations such as dried out eyes or a parched throat that can be caused by insufficiently low levels of humidity in the air.

Highly Efficient Humidification

Improvements in the system of airflow patterns and water injection techniques have resulted in a substantial increase in humidifying volume. The system also controls the humidity level of the air that is exhausted, ensuring an efficient, environmentally friendly manner of operation.

Note: In the case in which the level of residual impurities exceeds 100mg/l please use a water purifier.

DUAL-FAN SYSTEM

Reliable Ventilation

The OA Processing Unit utilises a dual-fan configuration for the intake and exhaust of air from a building. A forced air method is incorporated for the simultaneous supply and exhaust of air to support effective ventilation even in highly insulated airtight rooms. The Lossnay core is designed in such a way that the passages for air being drawn into and exhausted from a building are entirely separate. This setup prevents the mixing of indoor and outdoor air for safe, reliable ventilation.

FREE COOLING

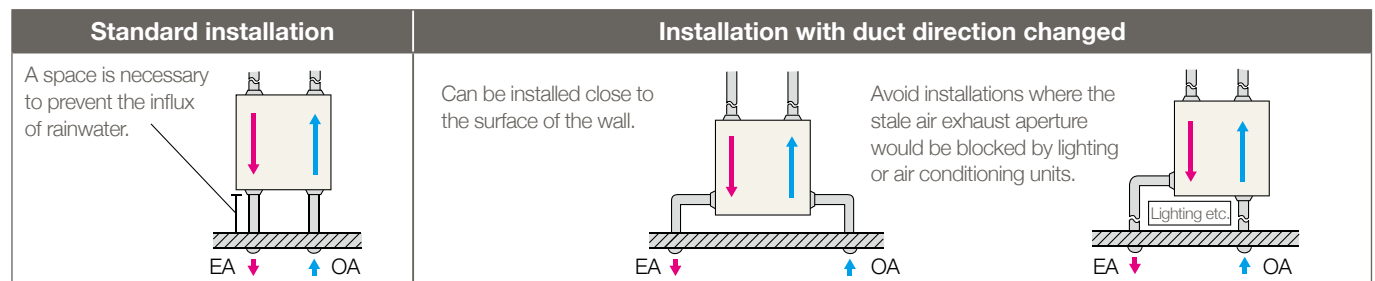
When the air conditioning system is operating in its cooling mode and the temperature of the air outdoors drops below the temperature indoors (e.g. a summer night), the OA Processing Unit detects this and automatically switches to a mode of operation which bypasses the heat recovery unit. Bringing in cool air from outside serves to help reduce the air conditioner's cooling load.

HEAT PROCESSING

A direct expansion heat exchanger is incorporated to compensate for any heat loss that may occur during ventilation. It also improves the efficiency of humidification in the winter.

VARIABLE DUCT POSITIONS

The connection position of the outside duct is variable allowing for more complicated duct installations.



*There is no pressure loss with a change in the duct position.

VL Series

SMART VENTILATION

More comfortable!

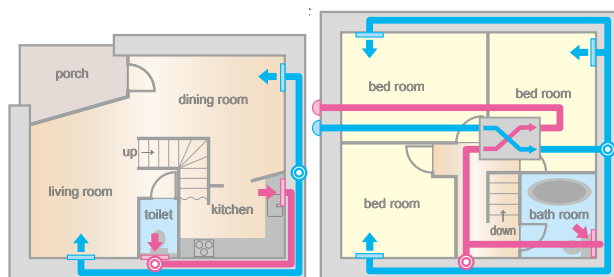
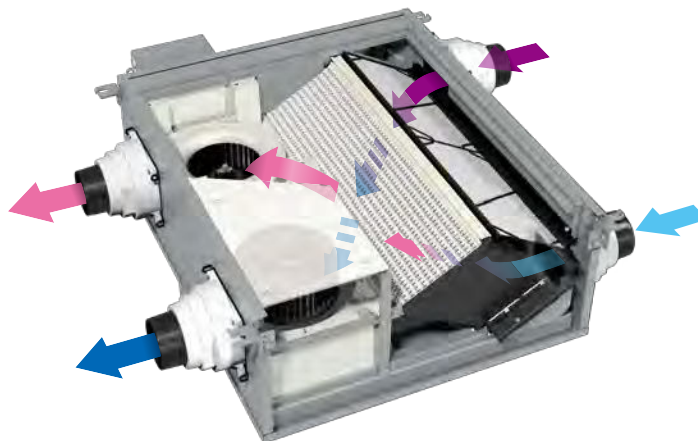
- Minimises temperature difference.
- Reduces outside noise.
- Filter cuts pollen and dust for fresh clean air.

More energy saving!

- 86% maximum exchange efficiency.
- Reduces load on air conditioning (heating and cooling).

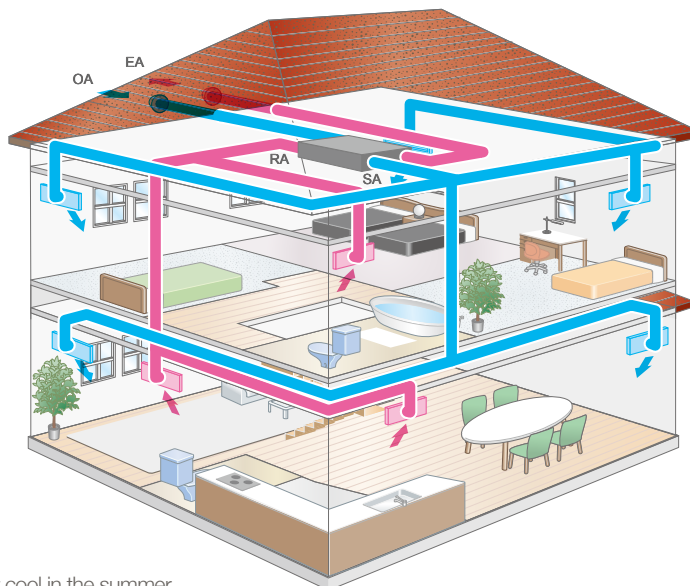
One Lossnay unit provides 24 hours ventilation for the entire house from the living areas to the bathroom. The heat recovery system provides fresh air at a comfortable air temperature.

The energy saved by using Lossnay contributes directly towards lowering heating or cooling expenses. The sensible heat exchanger type is effective for decreasing excess humidity in the winter.



1F

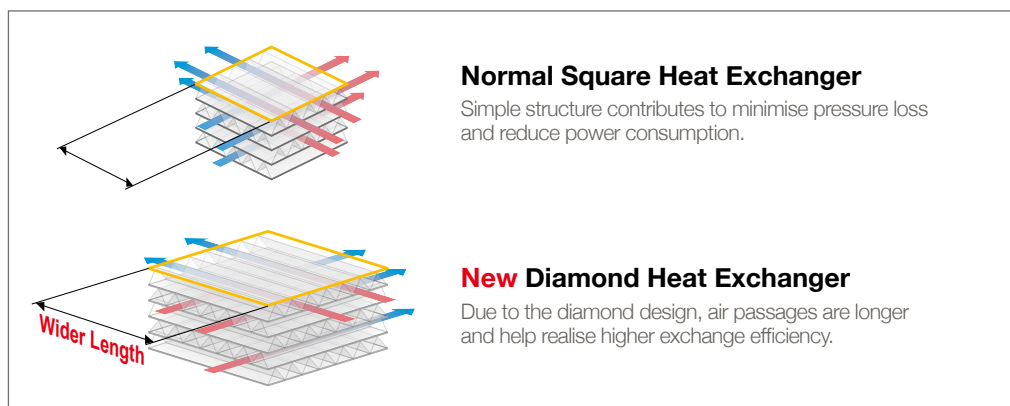
2F



PRODUCT MERITS

Newly Developed Heat Exchanger

- During ventilation, Lossnay recovers warmth in the winter and keeps air cool in the summer.
- Reducing heating and cooling loads with a maximum exchange efficiency of 86%.



Normal Square Heat Exchanger

Simple structure contributes to minimise pressure loss and reduce power consumption.

New Diamond Heat Exchanger

Due to the diamond design, air passages are longer and help realise higher exchange efficiency.



Quiet

- At an ultra quiet 14dB, it is the quietest product in its class*.
- Blocks outside noise for a more comfortable environment.

*On lowest fan speed.



Energy Efficient

- The highest energy saving in its class. (8.5W minimum input power)
- Saves heating and cooling costs by minimising energy loss occurring during ventilation.

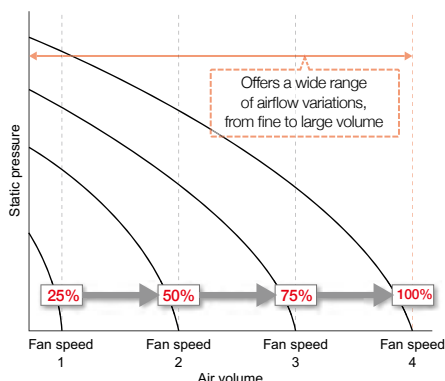
FAN SPEED SETTING

Widely Adjustable Fan Speed

This model can operate at four main fan speeds. In addition, each speed has a range setting of approximately 25, 50, 75 and 100%, allowing optimum air volume control.

When used in combination with the CO₂ sensor or timer function, the air volume can be controlled according to conditions that realise better performance and reduce power consumption.

VL-220CZGV-E Characteristic Curves

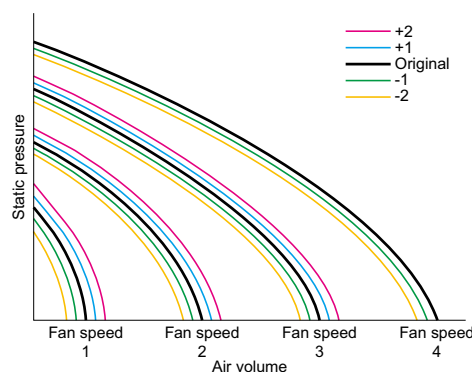


Fan speed precise adjustment function

Each main fan speed value can be further adjusted slightly. Use the PZ-61DR-E remote controller to adjust the speed.

1. Considering the total hours of Lossnay operation (filter clogging), the fan power can be adjusted automatically after a given period of time.
2. After the unit is installed, if the air volume is slightly lower or higher than the desired airflow, it is possible to make fine adjustments. (Fan speed 4 is available only 1down and 2down)

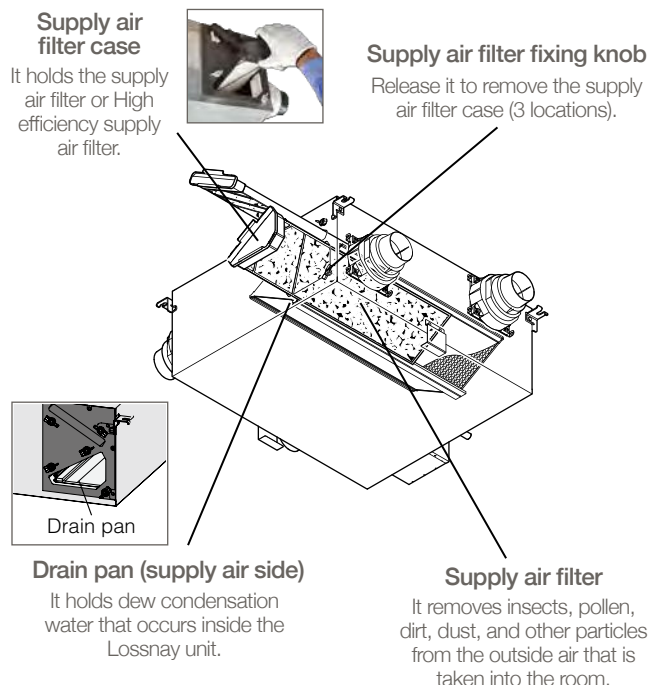
P-Q Curve Image



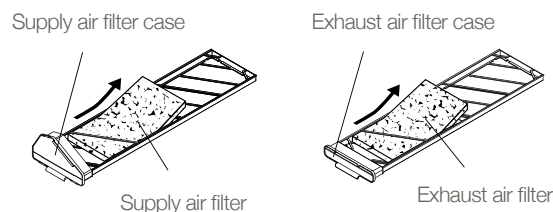
MAINTENANCE

To keep the Lossnay unit in optimal condition, clean dirt and dust from the filters and the drain pan periodically (at least once every six months or more, depending on the operating environment).

1. Draw out filters after unlocking the fix knobs

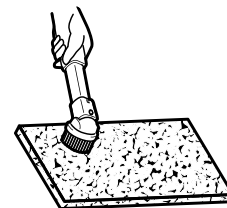


2. Remove the air filters from the filter cases



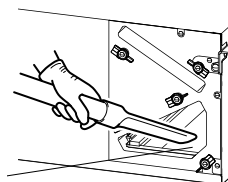
3. Clean at least once every six months

Lightly tap or remove dust with a vacuum cleaner



4. The Drain pan can be cleaned with a vacuum cleaner






Drain pan (Supply air side)



CONTROL

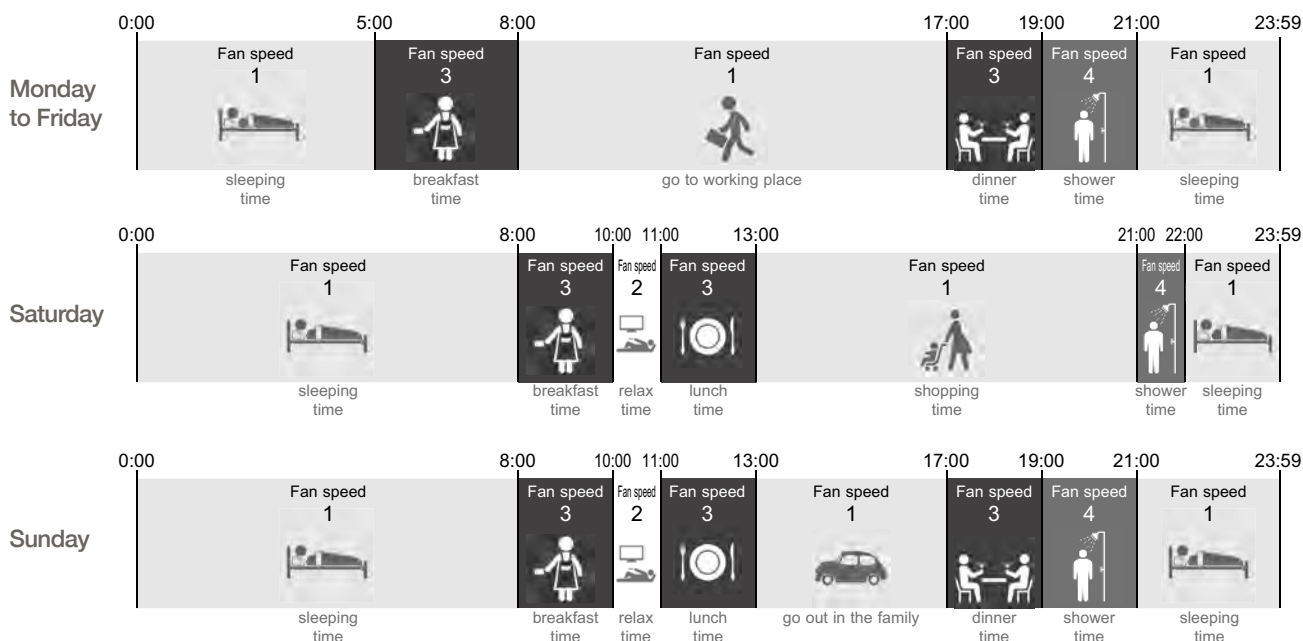
Multi Ventilation (Power Supply/Exhaust) Mode

This mode allows the air supply/exhaust balance to be varied dynamically. The supply/exhaust balance can be selected to suit the usage environment.

| Normal Mode | Power Supply Mode | Power Exhaust Mode |
|---|---|---|
| Relax time  | Adjust the indoor pressure balance in case a separate exhaust is installed  | Increase indoor pressure to prevent unfiltered drafts from coming in  |
| | | Keeps steam only inside the shower room  |
| | | Prevent odours from spreading  |

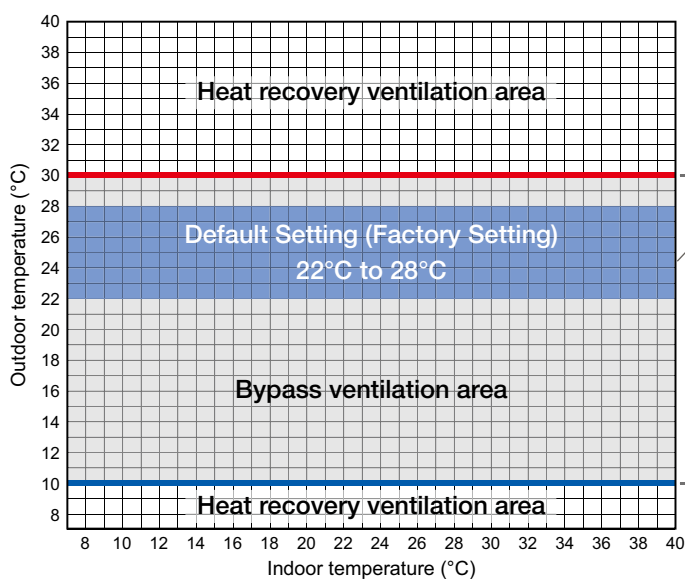
Weekly Timer

The operation pattern for each day of the week. On/Off and air volume can be set using the weekly timer function (up to eight zones per day). This function contributes to enhanced energy saving operation.



Free Cooling Mode

During the summer season, the free cooling mode draws cooler outside air into the room. This mode contributes to reduced loads on air conditioning. For this operation, an optional bypass damper P-133DUE-E is required. The user is able to set the OA temp. Depending on the preference between 10°C to 30°C.

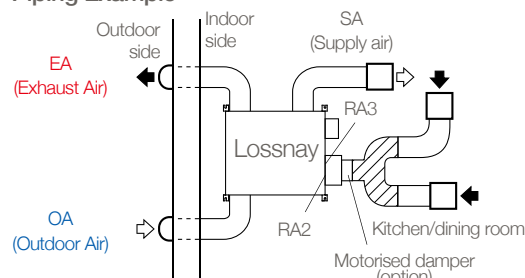


P-133DUE-E attached to VL-220CZGV-E


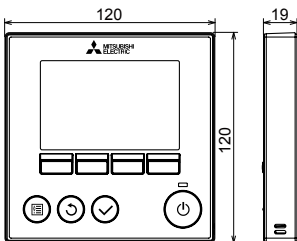

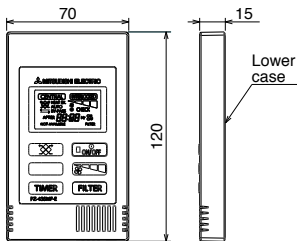


The remote controller PZ-61DR-E can set the free cooling temp. zone: Max: 30°C, Min: 10°C

Piping Example



Remote Controllers

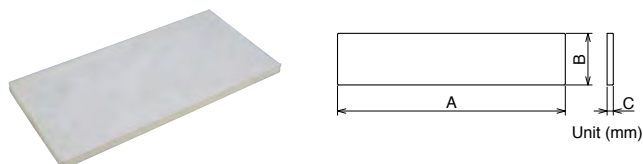
| PZ-61DR-E | PZ-43SMF-E |
|--|---|
|   <p>Unit (mm)</p> |   <p>Unit (mm)</p> |

| Function (Communicating Mode) | PZ-61DR-E | | PZ-43SMF-E | |
|--|---------------------------------|--|---------------------------------|--|
| | LGH-RVX/RVXT | VL-220CZGV-E | LGH-RVX/RVXT | VL-220CZGV-E |
| Fan speed selection | 4 fan speeds | 4 fan speeds | 2 of 4 fan speeds | 2 of 4 fan speeds |
| Ventilation mode selection | Energy recovery / Bypass / Auto | Heat recovery / Bypass / Auto (available with optional parts P-133DUE-E) | Energy recovery / Bypass / Auto | Heat recovery / Bypass / Auto (available with optional parts P-133DUE-E) |
| Night purge (time) | Anytime schedule | No | No | No |
| Night purge (fan speed) | Selectable from 4 fan speeds | No | No | No |
| Function setting from RC | Yes | Yes | No | No |
| Bypass temp. free setting | Yes | Yes (available with optional parts P-133DUE-E) | No | No |
| Heater-On temp. free setting | Yes | No | No | No |
| Fan power change after installation | Yes | Yes | No | No |
| On/Off timer | Yes | Yes | Yes | Yes |
| Auto-Off timer | Yes | Yes | No | No |
| Weekly timer | Yes | Yes | No | No |
| Operation restrictions (On/Off, ventilation mode, fan speed) | Yes | Yes (ventilation mode is available with optional parts P-133DUE-E) | No | No |
| Operation restrictions (fan speed skip setting) | Yes | Yes | No | No |
| Screen contrast adjustment | Yes | Yes | No | No |
| Language selection | Yes (8 languages) | Yes (8 languages) | No (English Only) | No (English Only) |
| Initialising remote controller | Yes | Yes | No | No |
| Filter cleaning sign | Yes | Yes | Yes | Yes |
| Lossnay core cleaning sign | Yes | No | No | No |
| Error indication | Yes | Yes | Yes | Yes |
| Error history | Yes | Yes | No | No |

Optional Parts

Standard filter

Replacement components for the standard air filter supplied with the Lossnay LGH main unit.

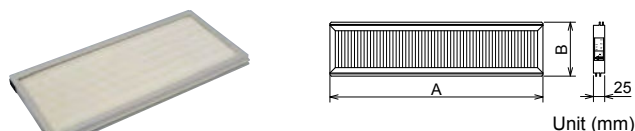


| Model | Dimension (mm) | | | Number of filters per set | | Applicable model | Filter material |
|--------------------------|----------------|-----|----|---------------------------|---------|---|--|
| | A | B | C | Supply | Exhaust | | |
| PZ-15RF ₈ -E | 557 | 130 | 20 | 1 | 1 | LGH-15RVX-E | Nonwoven filter Filtration efficiency (EU-G3) |
| PZ-25RF ₈ -E | 333 | 156 | 15 | 2 | 2 | LGH-25RVX-E | |
| PZ-35RF ₈ -E | 399 | 183 | 20 | 2 | 2 | LGH-35RVX-E | |
| PZ-50RF ₈ -E | 470 | 183 | 15 | 2 | 2 | LGH-50RVX-E GUF-50RD(H)4 | |
| PZ-65RF ₈ -E | 433 | 218 | 15 | 2 | 2 | LGH-65RVX-E | |
| PZ-80RF ₈ -E | 451 | 243 | 15 | 2 | 2 | LGH-80RVX-E LGH-150RVX-E(2sets) | |
| PZ-100RF ₈ -E | 565 | 243 | 15 | 2 | 2 | LGH-100RVXE GUF-100RD(H)4 LGH-200RVX-E(2sets) | |

| Model | Air | Dimension (mm) | | Number of filters per set | Applicable model | Filter material |
|-------------|---------|----------------|-----|---------------------------|------------------|--|
| | | A | B | | | |
| PZ-150RTF-E | Supply | 655 | 290 | 2 | LGH-150RVXT-E | Nonwoven filter Filtration efficiency (EU-G3) |
| | Exhaust | 655 | 250 | 2 | | |
| PZ-250RTF-E | Supply | 985 | 290 | 2 | LGH-200RVXT-E | |
| | Exhaust | 985 | 250 | 2 | LGH-250RVXT-E | |

High-efficiency Filter

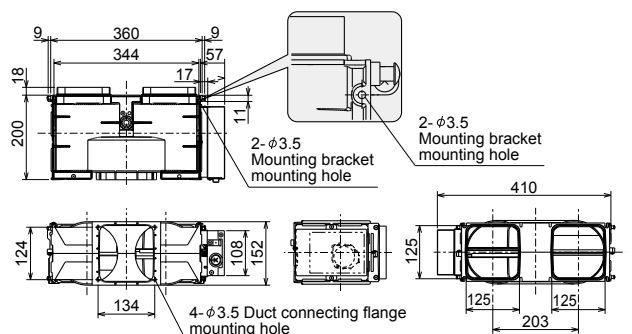
This high-efficiency filter (with 65% colorimetricity EU-F7:EN779: 2002) can be incorporated inside the Lossnay unit without the need to attach parts from other systems, as done to date.



| Model | Dimension (mm) | | Number of filters per set | Applicable model | Filter material |
|-------------|----------------|-----|---------------------------|---|---|
| | A | B | | | |
| PZ-15RFM-E | 553 | 123 | 1 | LGH-15RVX-E | Noncombustible fiber (polyester polyolefin) (EU-F7:EN 779:2002) |
| PZ-25RFM-E | 327 | 149 | 2 | LGH-25RVX-E | |
| PZ-35RFM-E | 393 | 175 | 2 | LGH-35RVX-E | |
| PZ-50RFM-E | 464 | 175 | 2 | LGH50RVX-E GUF-50RD(H)4 | |
| PZ-65RFM-E | 427 | 209 | 2 | LGH-65RVX-E | |
| PZ-80RFM-E | 446 | 236 | 2 | LGH-80RVX-E LGH-150RVX-E(2 sets) | |
| PZ-100RFM-E | 559 | 236 | 2 | LGH-100RVX-E GUF-100RD(H)4 LGH-200RVX-E(2 sets) | |

Optional Parts for VL-220CZGV-E

Bypass damper



Unit (mm)

| Filter type | High Efficiency Supply Air filter | Medium Efficiency Exhaust Air Filter | Standard Replacement Filter |
|-----------------------------|---|---|---|
| Model | P-220SHF-E | P-220EMF-E | P-220F-E |
| Classification (EN779:2012) | M6 | G4 | G3 |
| Approximate Service Life | 1 year (replacement) Cannot be cleaned | 2 year (replacement) Clean approximately once every 6 months | Replace when broken Can be washed with water and reused 4 times. Clean approximately once every 6 months. |

Certain ratings and specifications may change due to product improvements or modifications, refer to product manuals for safety precautions.

SPECIFICATIONS

LGH-15/25RVX-E



| Model | | LGH-15RVX-E | | | | | | | | LGH-25RVX-E | | | | | | | |
|-------------------------------------|--|--------------------------|------|------|------|-------------|------|------|------|--------------------------|------|------|------|-------------|------|------|------|
| Electrical power supply | | 220-240V/50Hz, 220V/60Hz | | | | | | | | 220-240V/50Hz, 220V/60Hz | | | | | | | |
| Ventilation mode | | Heat recovery mode | | | | Bypass mode | | | | Heat recovery mode | | | | Bypass mode | | | |
| Fan speed | | SP4 | SP3 | SP2 | SP1 | SP4 | SP3 | SP2 | SP1 | SP4 | SP3 | SP2 | SP1 | SP4 | SP3 | SP2 | SP1 |
| Running current (A) | | 0.40 | 0.24 | 0.15 | 0.10 | 0.41 | 0.25 | 0.15 | 0.10 | 0.48 | 0.28 | 0.16 | 0.10 | 0.48 | 0.29 | 0.16 | 0.11 |
| Input power (W) | | 49 | 28 | 14 | 7 | 52 | 28 | 14 | 8 | 62 | 33 | 16 | 7.5 | 63 | 35 | 17 | 9 |
| Air volume | (m³/h) | 150 | 113 | 75 | 38 | 150 | 113 | 75 | 38 | 250 | 188 | 125 | 63 | 250 | 188 | 125 | 63 |
| | (L/s) | 42 | 31 | 21 | 10 | 42 | 31 | 21 | 10 | 69 | 52 | 35 | 17 | 69 | 52 | 35 | 17 |
| External static pressure (Pa) | | 95 | 54 | 24 | 6 | 95 | 54 | 24 | 6 | 85 | 48 | 21 | 5 | 85 | 48 | 21 | 5 |
| Temperature exchange efficiency (%) | | 80.0 | 81.0 | 83.0 | 84.0 | — | — | — | — | 79.0 | 80.0 | 82.0 | 86.0 | — | — | — | — |
| Enthalpy exchange efficiency (%) | Heating | 73.0 | 75.5 | 78.0 | 79.0 | — | — | — | — | 69.5 | 72.0 | 76.0 | 83.0 | — | — | — | — |
| | Cooling | 71.0 | 74.5 | 78.0 | 79.0 | — | — | — | — | 68.0 | 70.0 | 74.5 | 83.0 | — | — | — | — |
| Noise (dB) | (Measured at 1.5m under the centre of unit in an anechoic chamber) | 28.0 | 24.0 | 19.0 | 17.0 | 29.0 | 24.0 | 19.0 | 18.0 | 27.0 | 22.0 | 20.0 | 17.0 | 27.5 | 23.0 | 20.0 | 17.0 |
| Weight (kg) | | 20 | | | | | | | | 23 | | | | | | | |
| Specific energy consumption class | | A | | | | | | | | A | | | | | | | |

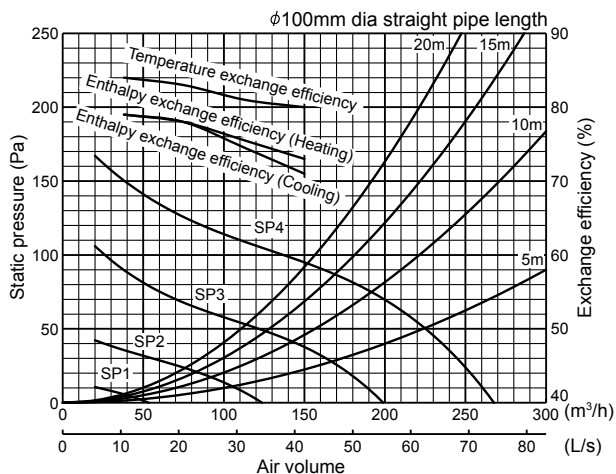
*The Air outlets noise (45° angle, 1.5 metres in front of the unit) is about 13dB(LGH-15RVX-E) / 15dB(LGH-25RVX-E) greater than the indicated value (at Fan speed 4).

*The running current, the input power, the efficiency and the noise are based on the rating air volume, and 230V/50Hz.

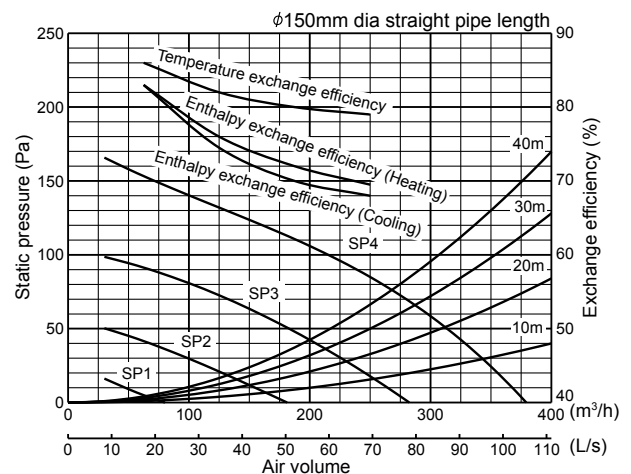
*For the specification at the other frequency contact your dealer.

*Figures in the chart are measured according to Japan Industrial Standard (JIS B 8628). Characteristic Curves are measured by chamber method.

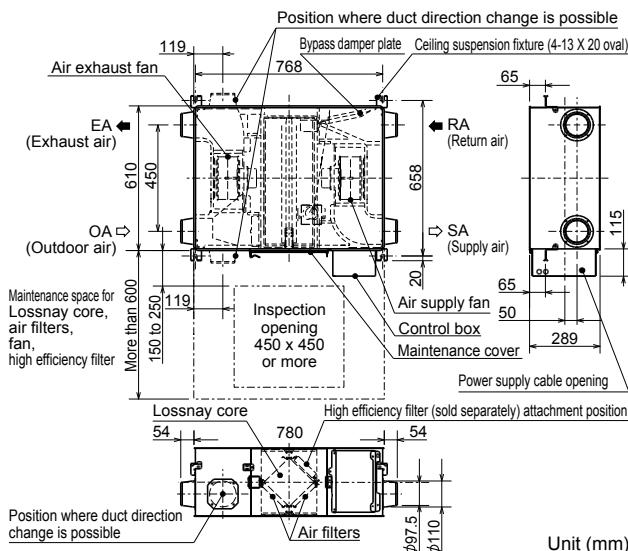
Characteristic Curve of the LGH-15RVX-E



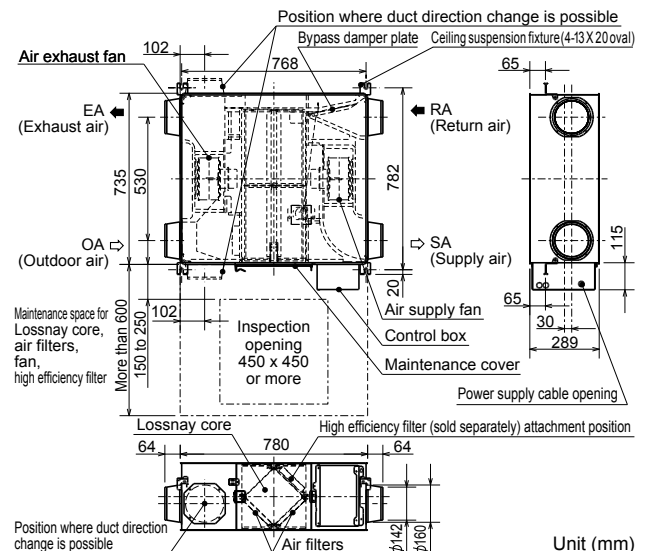
Characteristic Curve of the LGH-25RVX-E



Dimensions of the LGH-15RVX-E



Dimensions of the LGH-25RVX-E



*Certain ratings and specifications may change due to product improvements or modifications.

*Refer to the product manuals for safety precautions.

LGH-35/50RVX-E



| Model | | LGH-35RVX-E | | | | | | | | LGH-50RVX-E | | | | | | | |
|-------------------------------------|--|--------------------------|------|------|------|-------------|------|------|------|--------------------------|------|------|------|-------------|------|------|------|
| Electrical power supply | | 220-240V/50Hz, 220V/60Hz | | | | | | | | 220-240V/50Hz, 220V/60Hz | | | | | | | |
| Ventilation mode | | Heat recovery mode | | | | Bypass mode | | | | Heat recovery mode | | | | Bypass mode | | | |
| Fan speed | | SP4 | SP3 | SP2 | SP1 | SP4 | SP3 | SP2 | SP1 | SP4 | SP3 | SP2 | SP1 | SP4 | SP3 | SP2 | SP1 |
| Running current (A) | | 0.98 | 0.54 | 0.26 | 0.12 | 0.98 | 0.56 | 0.28 | 0.13 | 1.15 | 0.59 | 0.26 | 0.13 | 1.15 | 0.59 | 0.27 | 0.13 |
| Input power (W) | | 140 | 70 | 31 | 11 | 145 | 72 | 35 | 13 | 165 | 78 | 32 | 12 | 173 | 81 | 35 | 14 |
| Air volume | (m³/h) | 350 | 263 | 175 | 88 | 350 | 263 | 175 | 88 | 500 | 375 | 250 | 125 | 500 | 375 | 250 | 125 |
| | (L/s) | 97 | 73 | 49 | 24 | 97 | 73 | 49 | 24 | 139 | 104 | 69 | 35 | 139 | 104 | 69 | 35 |
| External static pressure (Pa) | | 160 | 90 | 40 | 10 | 160 | 90 | 40 | 10 | 120 | 68 | 30 | 8 | 120 | 68 | 30 | 8 |
| Temperature exchange efficiency (%) | | 80.0 | 82.5 | 86.0 | 88.5 | — | — | — | — | 78.0 | 81.0 | 83.5 | 87.0 | — | — | — | — |
| Enthalpy exchange efficiency (%) | Heating | 71.5 | 74.0 | 78.5 | 83.5 | — | — | — | — | 69.0 | 71.0 | 75.0 | 82.5 | — | — | — | — |
| | Cooling | 71.0 | 73.0 | 78.0 | 82.0 | — | — | — | — | 66.5 | 68.0 | 72.5 | 82.0 | — | — | — | — |
| Noise (dB) | (Measured at 1.5m under the centre of unit in an anechoic chamber) | 32.0 | 28.0 | 20.0 | 17.0 | 32.5 | 28.0 | 20.0 | 18.0 | 34.0 | 28.0 | 19.0 | 18.0 | 35.0 | 29.0 | 20.0 | 18.0 |
| Weight (kg) | | 30 | | | | | | | | 33 | | | | | | | |

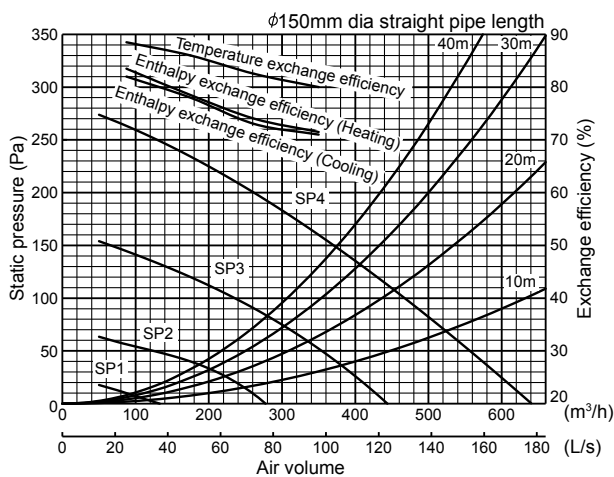
*The Air outlets noise (45° angle, 1.5 metres in front of the unit) is about 12dB(LGH-35RVX-E) / 18dB(LGH-50RVX-E) greater than the indicated value (at Fan speed 4).

*The running current, the input power, the efficiency and the noise are based on the rating air volume, and 230V/50Hz.

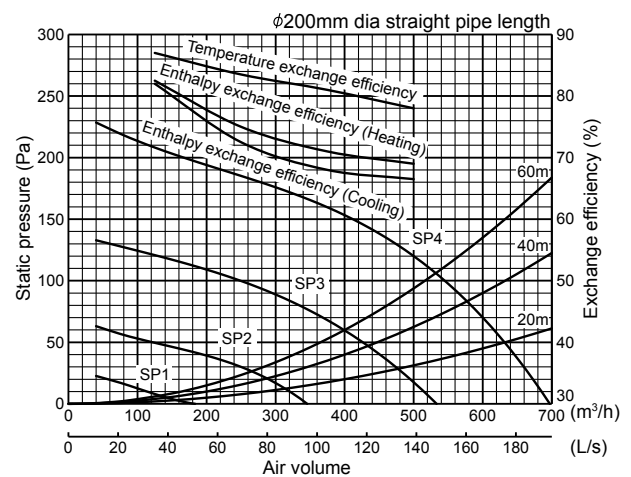
*For the specification at the other frequency contact your dealer.

*Figures in the chart are measured according to Japan Industrial Standard (JIS B 8628). Characteristic Curves are measured by chamber method.

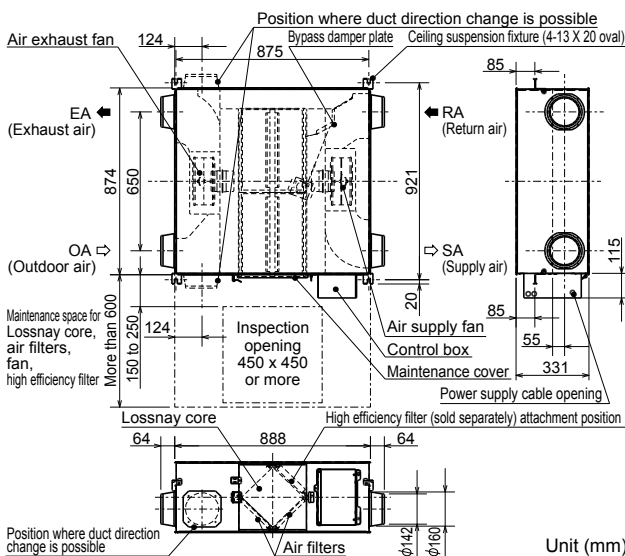
Characteristic Curve of the LGH-50RVX-E



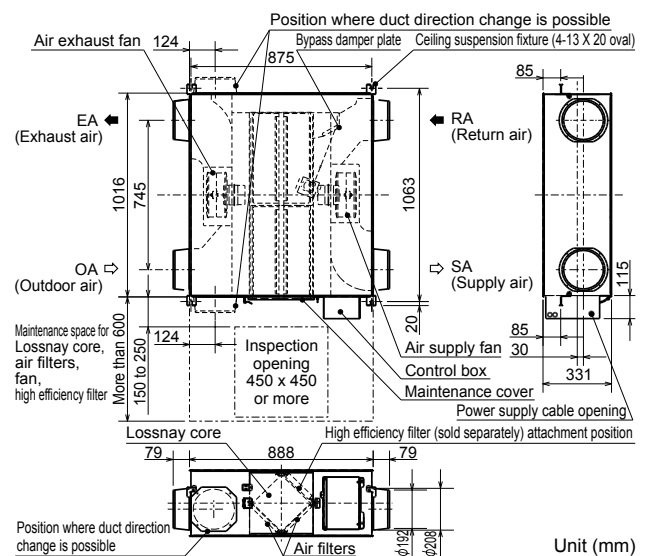
Characteristic Curve of the LGH-35RVX-E



Dimensions of the LGH-35RVX-E



Dimensions of the LGH-50RVX-E



*Certain ratings and specifications may change due to product improvements or modifications.

*Refer to the product manuals for safety precautions.

SPECIFICATIONS

LGH-65/80RVX-E



| Model | | LGH-65RVX-E | | | | | | | | LGH-80RVX-E | | | | | | | |
|-------------------------------------|--|--------------------------|------|------|------|-------------|------|------|------|--------------------------|------|------|------|-------------|------|------|------|
| Electrical power supply | | 220-240V/50Hz, 220V/60Hz | | | | | | | | 220-240V/50Hz, 220V/60Hz | | | | | | | |
| Ventilation mode | | Heat recovery mode | | | | Bypass mode | | | | Heat recovery mode | | | | Bypass mode | | | |
| Fan speed | | SP4 | SP3 | SP2 | SP1 | SP4 | SP3 | SP2 | SP1 | SP4 | SP3 | SP2 | SP1 | SP4 | SP3 | SP2 | SP1 |
| Running current (A) | | 1.65 | 0.90 | 0.39 | 0.15 | 1.72 | 0.86 | 0.38 | 0.16 | 1.82 | 0.83 | 0.36 | 0.15 | 1.97 | 0.86 | 0.40 | 0.15 |
| Input power (W) | | 252 | 131 | 49 | 15 | 262 | 131 | 47 | 17 | 335 | 151 | 60 | 18 | 340 | 151 | 64 | 20 |
| Air volume | (m ³ /h) | 650 | 488 | 325 | 163 | 650 | 488 | 325 | 163 | 800 | 600 | 400 | 200 | 800 | 600 | 400 | 200 |
| | (L/s) | 181 | 135 | 90 | 45 | 181 | 135 | 90 | 45 | 222 | 167 | 111 | 56 | 222 | 167 | 111 | 56 |
| External static pressure (Pa) | | 120 | 68 | 30 | 8 | 120 | 68 | 30 | 8 | 150 | 85 | 38 | 10 | 150 | 85 | 38 | 10 |
| Temperature exchange efficiency (%) | | 77.0 | 81.0 | 84.0 | 86.0 | — | — | — | — | 79.0 | 82.5 | 84.0 | 85.0 | — | — | — | — |
| Enthalpy exchange efficiency (%) | Heating | 68.5 | 71.0 | 76.0 | 82.0 | — | — | — | — | 71.0 | 73.5 | 78.0 | 81.0 | — | — | — | — |
| | Cooling | 66.0 | 69.5 | 74.0 | 81.0 | — | — | — | — | 70.0 | 72.5 | 78.0 | 81.0 | — | — | — | — |
| Noise (dB) | (Measured at 1.5m under the centre of unit in an anechoic chamber) | 34.5 | 29.0 | 22.0 | 18.0 | 35.5 | 29.0 | 22.0 | 18.0 | 34.5 | 30.0 | 23.0 | 18.0 | 36.0 | 30.0 | 23.0 | 18.0 |
| Weight (kg) | | 38 | | | | | | | | 48 | | | | | | | |

*The Air outlets noise (45° angle, 1.5 metres in front of the unit) is about 16dB(LGH-65RVX-E) / 24dB(LGH-80RVX-E) greater than the indicated value (at Fan speed 4).

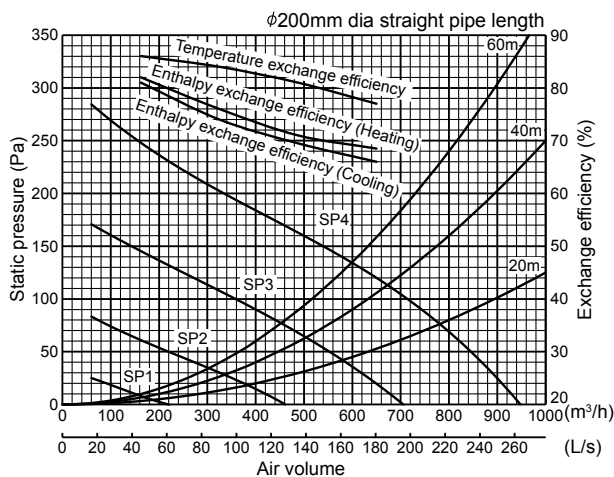
*The running current, the input power, the efficiency and the noise are based on the rating air volume, and 230V/50Hz.

*For the specification at the other frequency contact your dealer.

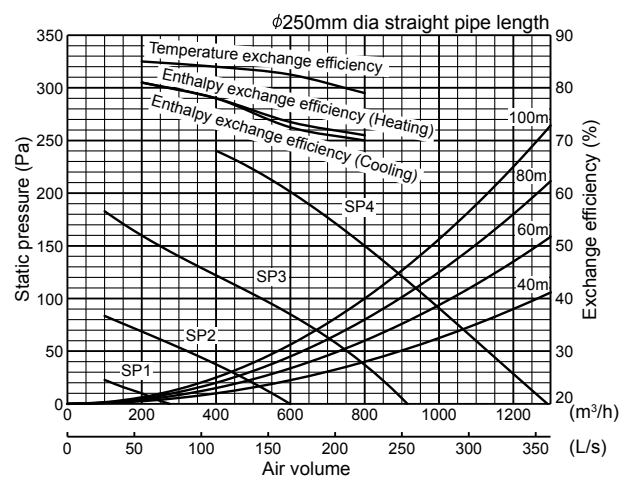
*Use this unit with static pressure 240Pa or less at Fan speed 4. Otherwise the noise level might be large. (Only LGH-80RVX-E)

*Figures in the chart are measured according to Japan Industrial Standard (JIS B 8628). Characteristic Curves are measured by chamber method.

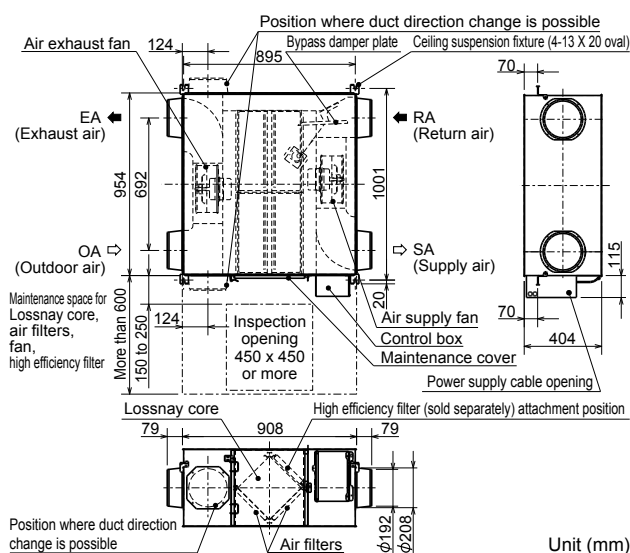
Characteristic Curve of the LGH-65RVX-E



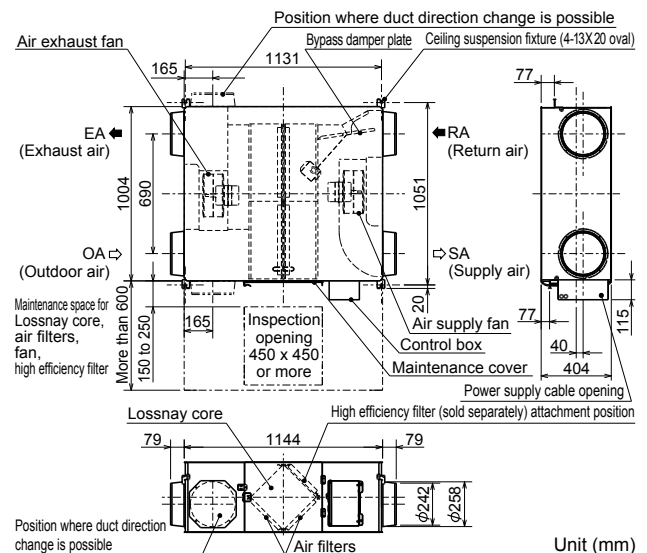
Characteristic Curve of the LGH-80RVX-E



Dimensions of the LGH-65RVX-E



Dimensions of the LGH-80RVX-E



*Certain ratings and specifications may change due to product improvements or modifications.

*Refer to the product manuals for safety precautions.

LGH-100/150RVX-E



| Model | | LGH-100RVX-E | | | | | | | | LGH-150RVX-E | | | | | | | |
|-------------------------------------|--|--------------------------|------|------|------|-------------|------|------|------|--------------------------|------|------|------|-------------|------|------|------|
| Electrical power supply | | 220-240V/50Hz, 220V/60Hz | | | | | | | | 220-240V/50Hz, 220V/60Hz | | | | | | | |
| Ventilation mode | | Heat recovery mode | | | | Bypass mode | | | | Heat recovery mode | | | | Bypass mode | | | |
| Fan speed | | SP4 | SP3 | SP2 | SP1 | SP4 | SP3 | SP2 | SP1 | SP4 | SP3 | SP2 | SP1 | SP4 | SP3 | SP2 | SP1 |
| Running current (A) | | 2.50 | 1.20 | 0.50 | 0.17 | 2.50 | 1.20 | 0.51 | 0.19 | 3.71 | 1.75 | 0.70 | 0.29 | 3.85 | 1.78 | 0.78 | 0.30 |
| Input power (W) | | 420 | 200 | 75 | 21 | 420 | 200 | 75 | 23 | 670 | 311 | 123 | 38 | 698 | 311 | 124 | 44 |
| Air volume | (m³/h) | 1000 | 750 | 500 | 250 | 1000 | 750 | 500 | 250 | 1500 | 1125 | 750 | 375 | 1500 | 1125 | 750 | 375 |
| | (L/s) | 278 | 208 | 139 | 69 | 278 | 208 | 139 | 69 | 417 | 313 | 208 | 104 | 417 | 313 | 208 | 104 |
| External static pressure (Pa) | | 170 | 96 | 43 | 11 | 170 | 96 | 43 | 11 | 175 | 98 | 44 | 11 | 175 | 98 | 44 | 11 |
| Temperature exchange efficiency (%) | | 80.0 | 83.0 | 86.5 | 89.5 | — | — | — | — | 80.0 | 82.5 | 84.0 | 85.0 | — | — | — | — |
| Enthalpy exchange efficiency (%) | Heating | 72.5 | 74.0 | 78.0 | 87.0 | — | — | — | — | 72.0 | 73.5 | 78.0 | 81.0 | — | — | — | — |
| | Cooling | 71.0 | 73.0 | 77.0 | 85.5 | — | — | — | — | 70.5 | 72.5 | 78.0 | 81.0 | — | — | — | — |
| Noise (dB) | (Measured at 1.5m under the centre of unit in an anechoic chamber) | 37.0 | 31.0 | 23.0 | 18.0 | 38.0 | 32.0 | 24.0 | 18.0 | 39.0 | 32.0 | 24.0 | 18.0 | 40.5 | 33.0 | 26.0 | 18.0 |
| Weight (kg) | | 54 | | | | | | | | 98 | | | | | | | |

*The Air outlets noise (45° angle, 1.5 metres in front of the unit) is about 21dB(LGH-100RVX-E) / 22dB(LGH-150RVX-E) greater than the indicated value (at Fan speed 4).

*The running current, the input power, the efficiency and the noise are based on the rating air volume, and 230V/50Hz.

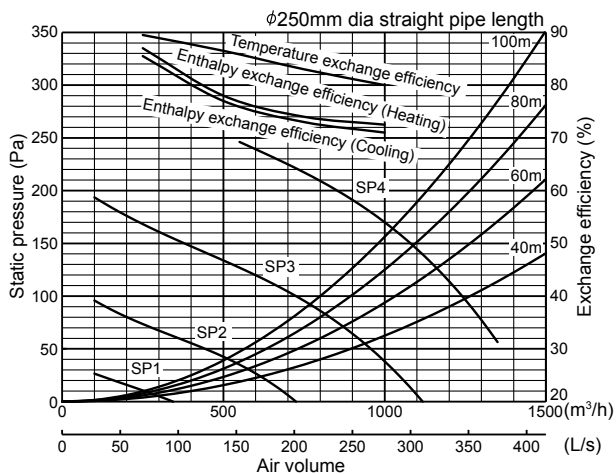
*For the specification at the other frequency contact your dealer.

*Use this unit between static pressure 60Pa and 240Pa at Fan speed 4. Otherwise the motor protection may work and reduce its output or the noise level might be larger. (Only LGH-100RVX-E)

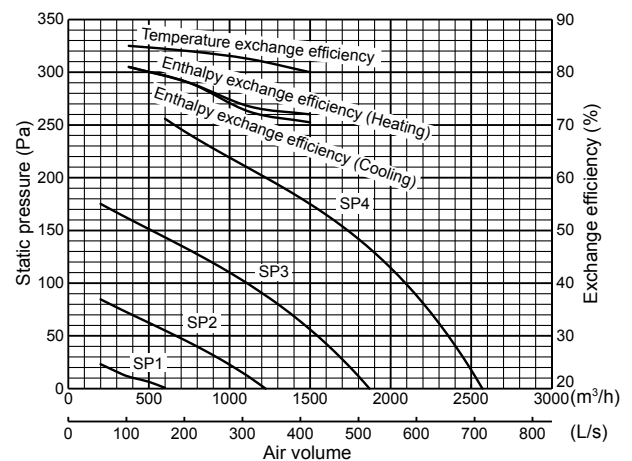
*Use this unit with static pressure 250Pa or less at Fan speed 4. Otherwise the noise level might be larger (Only LGH-150RVX-E)

*Figures in the chart are measured according to Japan Industrial Standard (JIS B 8628). Characteristic Curves are measured by chamber method.

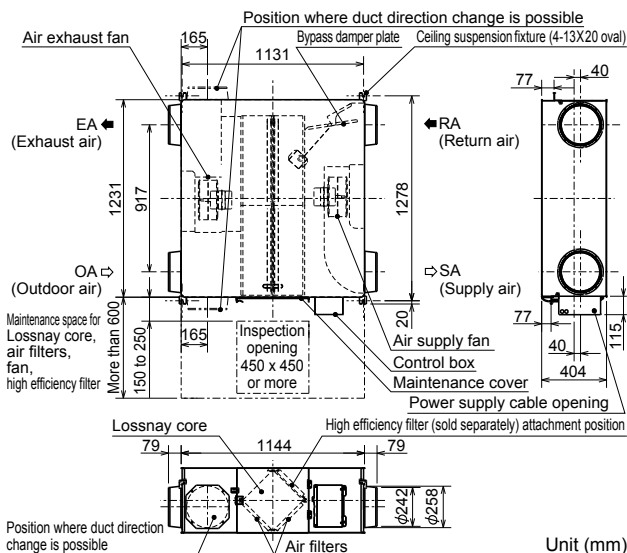
Characteristic Curve of the LGH-100RVX-E



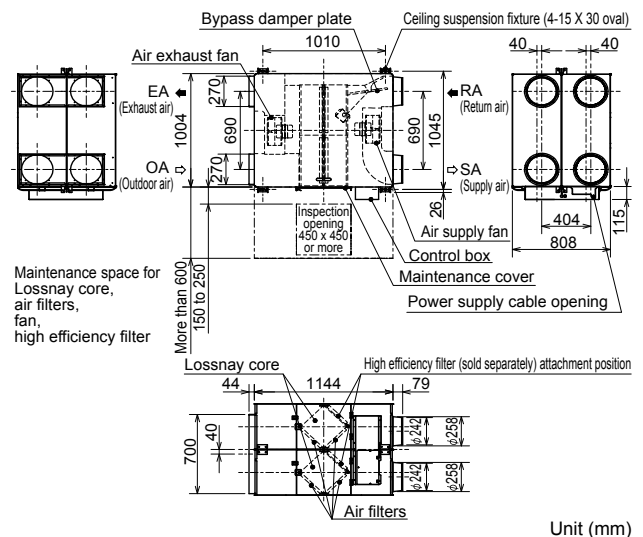
Characteristic Curve of the LGH-150RVX-E



Dimensions of the LGH-100RVX-E



Dimensions of the LGH-150RVX-E



*Certain ratings and specifications may change due to product improvements or modifications.

*Refer to the product manuals for safety precautions.

SPECIFICATIONS

LGH-200RVX-E



| Model | | LGH-200RVX-E | | | | | | | |
|-------------------------------------|--|--------------------------|------|------|------|-------------|------|------|------|
| Electrical power supply | | 220-240V/50Hz, 220V/60Hz | | | | | | | |
| Ventilation mode | | Heat recovery mode | | | | Bypass mode | | | |
| Fan speed | | SP4 | SP3 | SP2 | SP1 | SP4 | SP3 | SP2 | SP1 |
| Running current (A) | | 4.88 | 2.20 | 0.88 | 0.33 | 4.54 | 2.06 | 0.87 | 0.35 |
| Input power (W) | | 850 | 400 | 153 | 42 | 853 | 372 | 150 | 49 |
| Air volume | (m³/h) | 2000 | 1500 | 1000 | 500 | 2000 | 1500 | 1000 | 500 |
| | (L/s) | 556 | 417 | 278 | 139 | 556 | 417 | 278 | 139 |
| External static pressure (Pa) | | 150 | 84 | 38 | 10 | 150 | 84 | 38 | 10 |
| Temperature exchange efficiency (%) | | 80.0 | 83.0 | 86.5 | 89.5 | — | — | — | — |
| Enthalpy exchange efficiency (%) | Heating | 72.5 | 74.0 | 78.0 | 87.0 | — | — | — | — |
| | Cooling | 71.0 | 73.0 | 77.0 | 85.5 | — | — | — | — |
| Noise (dB) | (Measured at 1.5m under the centre of unit in an anechoic chamber) | 40.0 | 36.0 | 28.0 | 18.0 | 41.0 | 36.0 | 27.0 | 19.0 |
| Weight (kg) | | 110 | | | | | | | |

*The Air outlets noise (45° angle, 1.5 metres in front of the unit) is about 21dB greater than the indicated value (at Fan speed 4).

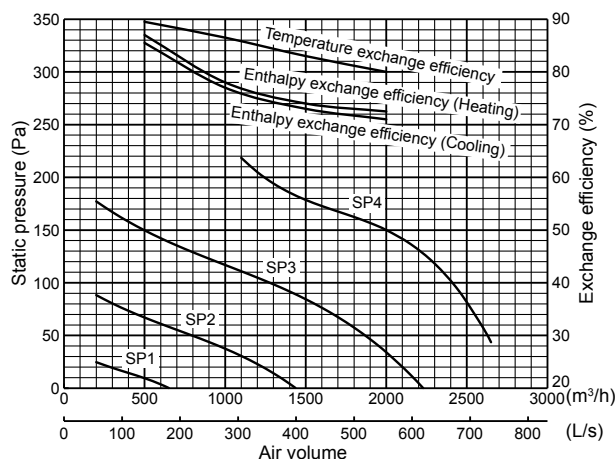
*The running current, the input power, the efficiency and the noise are based on the rating air volume, and 230V/50Hz.

*For the specification at the other frequency contact your dealer.

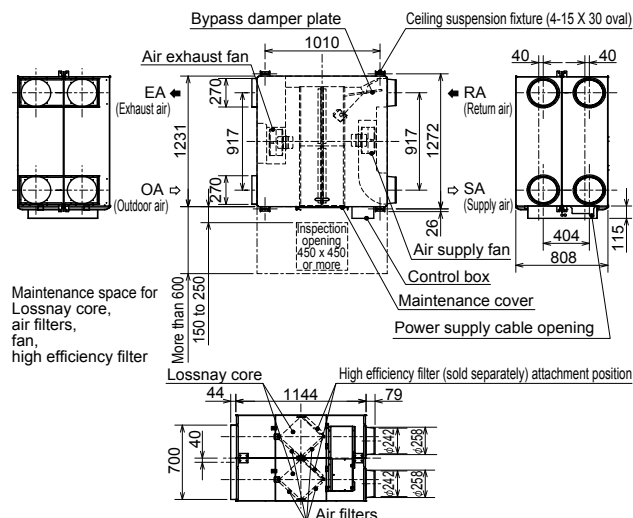
*Use this unit between static pressure 50Pa and 220Pa at Fan speed 4. Otherwise the motor protection may work and reduce its output or the noise level might be large.

*Figures in the chart are measured according to Japan Industrial Standard (JIS B 8628). Characteristic Curves are measured by chamber method.

Characteristic Curve of the LGH-200RVX-E



Dimensions of the LGH-200RVX-E



Unit (mm)

*Certain ratings and specifications may change due to product improvements or modifications.

*Refer to the product manuals for safety precautions.

LGH-150/200RVXT-E



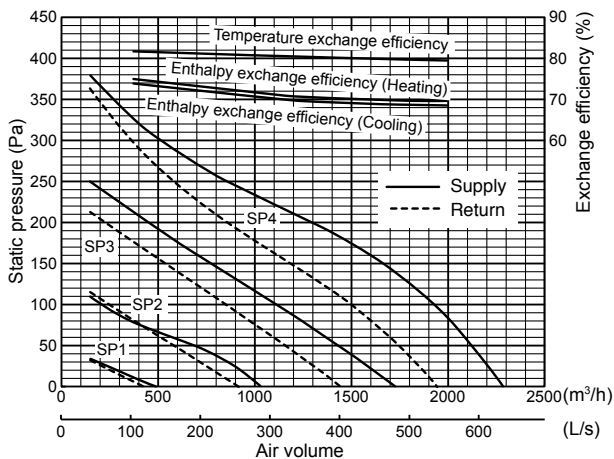
| Model | | LGH-150RVXT-E | | | | | | | | LGH-200RVXT-E | | | | | | | |
|-------------------------------------|---------|--------------------------|------|------|------|-------------|------|------|------|--------------------------|------|------|------|-------------|------|------|------|
| Electrical power supply | | 220-240V/50Hz, 220V/60Hz | | | | | | | | 220-240V/50Hz, 220V/60Hz | | | | | | | |
| Ventilation mode | | Heat recovery mode | | | | Bypass mode | | | | Heat recovery mode | | | | Bypass mode | | | |
| Fan speed | | SP4 | SP3 | SP2 | SP1 | SP4 | SP3 | SP2 | SP1 | SP4 | SP3 | SP2 | SP1 | SP4 | SP3 | SP2 | SP1 |
| Running current (A) | | 4.30 | 2.40 | 1.10 | 0.36 | 3.40 | 1.80 | 0.77 | 0.31 | 5.40 | 2.70 | 1.10 | 0.39 | 5.00 | 2.20 | 0.85 | 0.34 |
| Input power (W) | | 792 | 421 | 176 | 48 | 625 | 334 | 134 | 37 | 1000 | 494 | 197 | 56 | 916 | 407 | 150 | 45 |
| Air volume | (m³/h) | 1500 | 1125 | 750 | 375 | 1500 | 1125 | 750 | 375 | 2000 | 1500 | 1000 | 500 | 2000 | 1500 | 1000 | 500 |
| | (L/s) | 417 | 313 | 208 | 104 | 417 | 313 | 208 | 104 | 556 | 417 | 278 | 139 | 556 | 417 | 278 | 139 |
| External static pressure (Pa) | Supply | 175 | 98 | 44 | 11 | 175 | 98 | 44 | 11 | 175 | 98 | 44 | 11 | 175 | 98 | 44 | 11 |
| | Return | 100 | 56 | 25 | 6 | 100 | 56 | 25 | 6 | 100 | 56 | 25 | 6 | 100 | 56 | 25 | 6 |
| Temperature exchange efficiency (%) | | 80.0 | 80.5 | 81.0 | 81.5 | — | — | — | — | 80.0 | 81.0 | 82.5 | 84.0 | — | — | — | — |
| Enthalpy exchange efficiency (%) | Heating | 70.0 | 71.0 | 73.0 | 75.0 | — | — | — | — | 72.5 | 73.5 | 77.0 | 83.0 | — | — | — | — |
| | Cooling | 69.0 | 70.0 | 72.0 | 74.0 | — | — | — | — | 70.0 | 71.0 | 74.5 | 80.5 | — | — | — | — |
| Noise (dB) | | 39.5 | 35.5 | 29.5 | 22.0 | 39.0 | 33.0 | 26.5 | 20.5 | 39.5 | 35.5 | 28.0 | 22.0 | 40.5 | 34.5 | 27.0 | 20.5 |
| Weight (kg) | | 156 | | | | | | | | 159 | | | | | | | |

*The running current, the input power, the efficiency and the noise are based on the rating air volume, and 230V/50Hz.

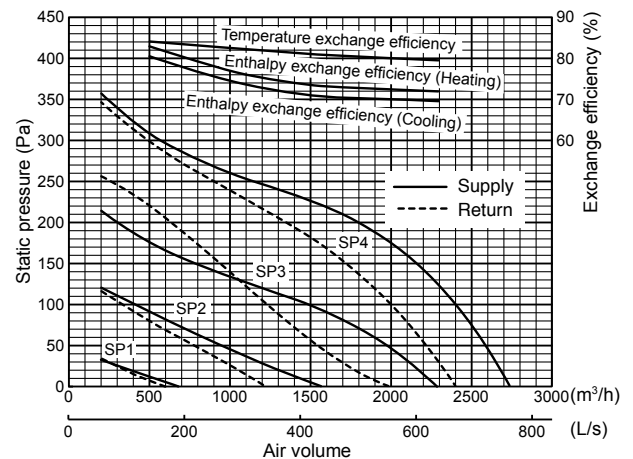
*For the specification at the other frequency contact your dealer.

*Figures in the chart are measured according to Japan Industrial Standard (JIS B 8628). Characteristic Curves are measured by chamber method.

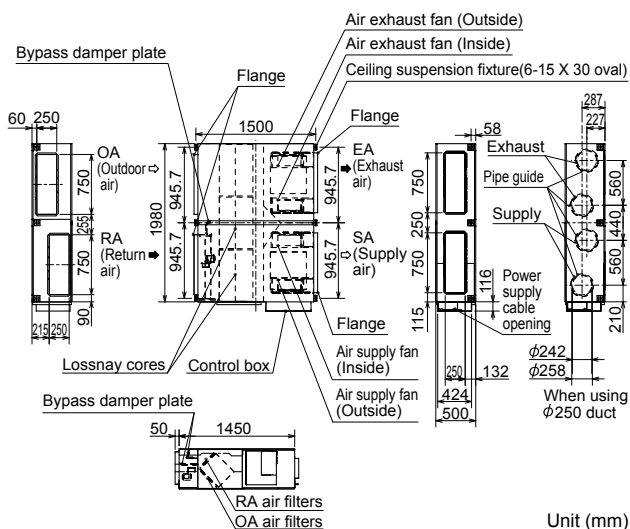
Characteristic Curve of the LGH-150RVX-E



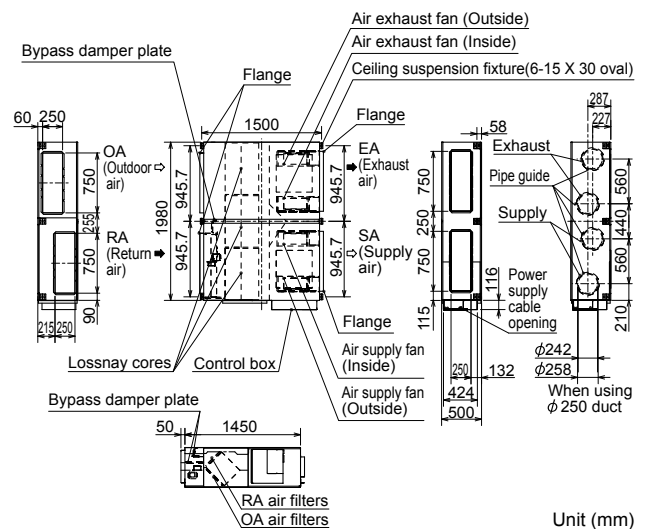
Characteristic Curve of the LGH-200RVX-E



Dimensions of the LGH-150RVX-E



Dimensions of the LGH-200RVX-E



*Certain ratings and specifications may change due to product improvements or modifications.

*Refer to the product manuals for safety precautions.

SPECIFICATIONS

LGH-250RVXT-E



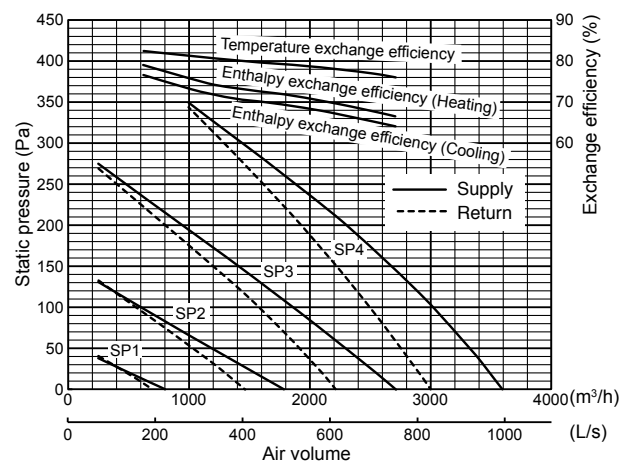
| Model | | LGH-250RVXT-E | | | | | | | |
|-------------------------------------|---------|--------------------------|------|------|------|-------------|------|------|------|
| Electrical power supply | | 220-240V/50Hz, 220V/60Hz | | | | | | | |
| Ventilation mode | | Heat recovery mode | | | | Bypass mode | | | |
| Fan speed | | SP4 | SP3 | SP2 | SP1 | SP4 | SP3 | SP2 | SP1 |
| Running current (A) | | 7.60 | 3.60 | 1.40 | 0.57 | 6.90 | 3.10 | 1.30 | 0.49 |
| Input power (W) | | 1446 | 687 | 244 | 82 | 1298 | 587 | 212 | 69 |
| Air volume | (m³/h) | 2500 | 1875 | 1250 | 625 | 2500 | 1875 | 1250 | 625 |
| | (L/s) | 694 | 521 | 347 | 174 | 694 | 521 | 347 | 174 |
| External static pressure (Pa) | Supply | 175 | 98 | 44 | 11 | 175 | 98 | 44 | 11 |
| | Return | 100 | 56 | 25 | 6 | 100 | 56 | 25 | 6 |
| Temperature exchange efficiency (%) | | 77.0 | 79.0 | 80.5 | 82.5 | — | — | — | — |
| Enthalpy exchange efficiency (%) | Heating | 68.0 | 71.5 | 74.0 | 79.0 | — | — | — | — |
| | Cooling | 65.5 | 69.0 | 71.5 | 76.5 | — | — | — | — |
| Noise (dB) | | 43.0 | 39.0 | 32.0 | 24.0 | 44.0 | 38.5 | 31.0 | 22.5 |
| Weight (kg) | | 198 | | | | | | | |

*The running current, the input power, the efficiency and the noise are based on the rating air volume, and 230V/50Hz.

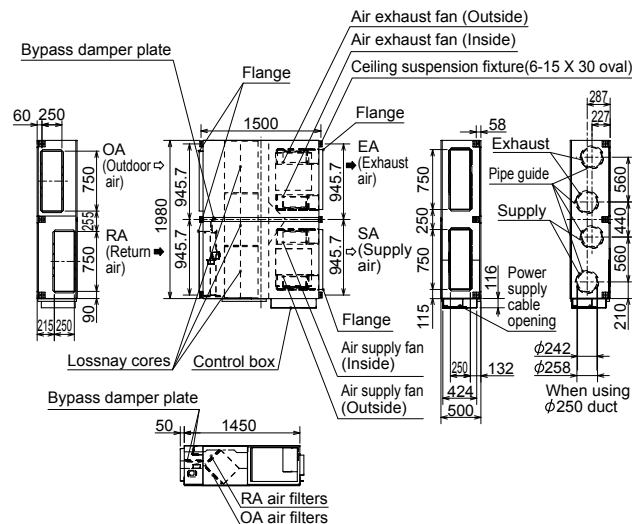
*For the specification at the other frequency contact your dealer.

*Figures in the chart are measured according to Japan Industrial Standard (JIS B 8628). Characteristic Curves are measured by chamber method.

Characteristic Curve of the LGH-250RVXT-E



Dimensions of the LGH-250RVXT-E



Unit (mm)

*Certain ratings and specifications may change due to product improvements or modifications.

*Refer to the product manuals for safety precautions.

GUF-50/100RD4



| Model | | GUF-50RD4 | | | | GUF-100RD4 | | | |
|--|---|--------------------|-----------|-------------|-----------|--------------------|---------|-------------|---------|
| Electrical power supply | | 220-240V/50Hz | | | | 220-240V/50Hz | | | |
| Ventilation mode | | Heat recovery mode | | Bypass mode | | Heat recovery mode | | Bypass mode | |
| Fan speed | | High | Low | High | Low | High | Low | High | Low |
| Running current (A) | | 1.15 | 0.70 | 1.15 | 0.70 | 2.20 | 1.73 | 2.25 | 1.77 |
| Input power (W) | | 235-265 | 150-165 | 235-265 | 150-165 | 480-505 | 370-395 | 490-515 | 385-410 |
| Air volume | (m³/h) | 500 | 400 | 500 | 400 | 1000 | 800 | 1000 | 800 |
| | (L/s) | 139 | 111 | 139 | 111 | 278 | 222 | 278 | 222 |
| External static pressure (Pa) | | 140 | 90 | 140 | 90 | 140 | 90 | 140 | 90 |
| Temperature exchange efficiency (%) | | 77.5 | 80 | — | — | 79.5 | 81.5 | — | — |
| Enthalpy exchange efficiency (%) | Heating | 68 | 71 | — | — | 71 | 74 | — | — |
| | Cooling | 65 | 67 | — | — | 69 | 71 | — | — |
| Cooling capacity (kW) | | 5.57(1.94) | | | | 11.44(4.12) | | | |
| Heating capacity (kW) | | 6.21(2.04) | | | | 12.56(4.26) | | | |
| Capacity equivalent to the indoor unit | | P32 | | | | P63 | | | |
| Noise (dB) | (Measured at 1.5m under the centre of the unit) | 33.5-34.5 | 29.5-30.5 | 35-36 | 29.5-30.5 | 38-39 | 34-35 | 38-39 | 35-36 |
| Weight (kg) | | 48 | | | | 82 | | | |

*Cooling/Heating capacity indicates the maximum value at operation under the following conditions.

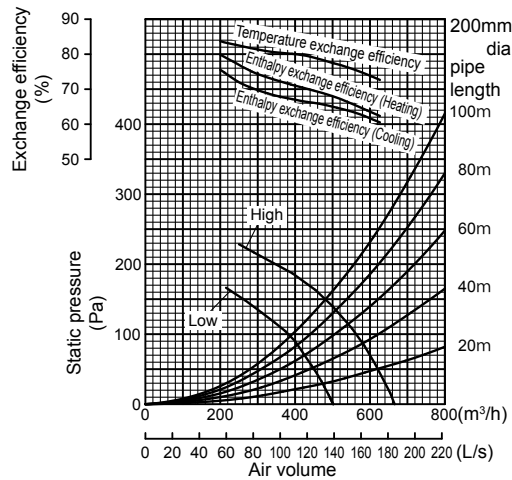
Cooling: Indoor: 27°CDB/19°CWB Outdoor: 35°CDB/24°CWB

Heating: Indoor: 20°CDB/13.8°CWB Outdoor: 7°CDB/6°CWB

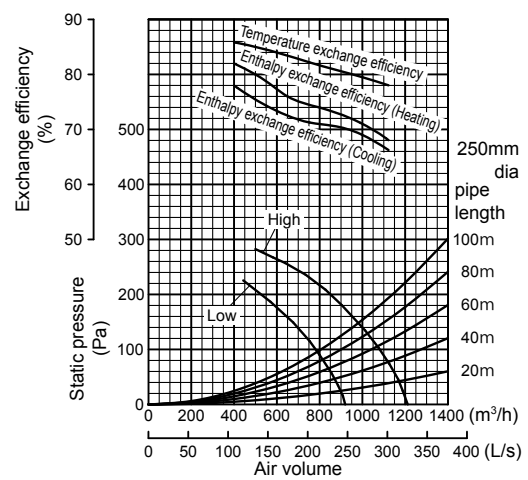
*The figures in () indicates heat recovering capacity of heat exchange core.

*Figures in the chart are measured according to Japan Industrial Standard (JIS B 8628). Characteristic Curves are measured by chamber method.

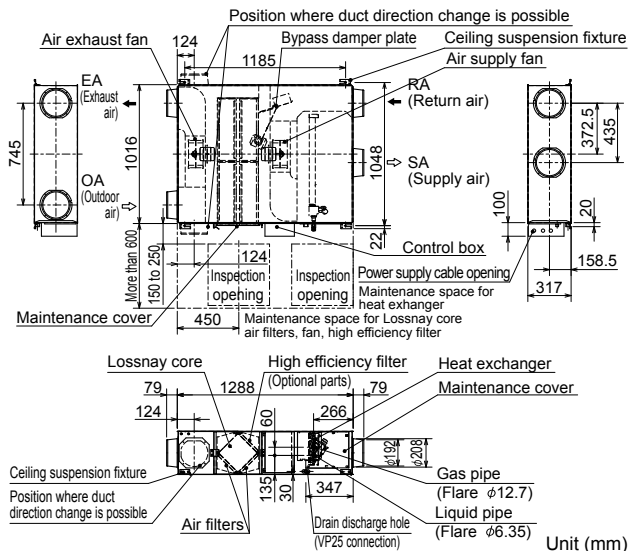
Characteristic Curve of the GUF-50RD4



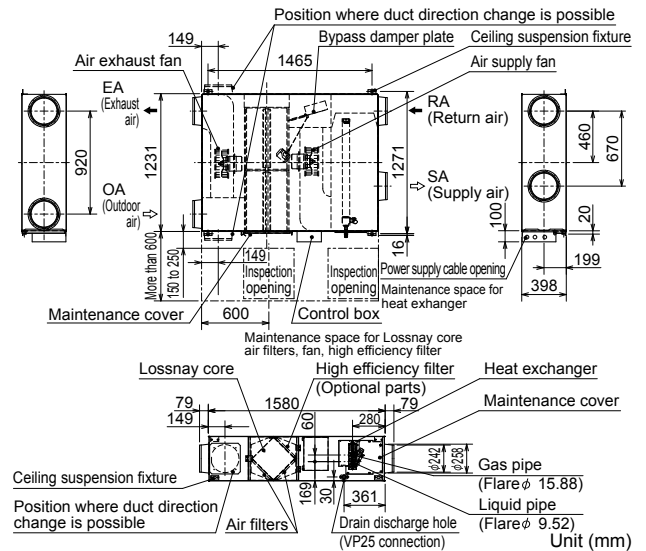
Characteristic Curve of the GUF-100RD4



Dimensions of the GUF-50RD4



GUF-100RD4



*Certain ratings and specifications may change due to product improvements or modifications.

*Refer to the product manuals for safety precautions.

SPECIFICATIONS

GUF-50/100RDH4



| Model | | GUF-50RDH4 | | | | GUF-100RDH4 | | | |
|--|---|--------------------------------|-----------|-------------|-----------|---------------------------------|---------|-------------|---------|
| Electrical power supply | | 220-240V/50Hz | | | | 220-240V/50Hz | | | |
| Ventilation mode | | Heat recovery mode | | Bypass mode | | Heat recovery mode | | Bypass mode | |
| Fan speed | | High | Low | High | Low | High | Low | High | Low |
| Running current (A) | | 1.15 | 0.70 | 1.15 | 0.70 | 2.20 | 1.76 | 2.25 | 1.77 |
| Input power (W) | | 235-265 | 150-165 | 235-265 | 150-165 | 480-505 | 385-400 | 490-515 | 385-410 |
| Air volume | (m³/h) | 500 | 400 | 500 | 400 | 1000 | 800 | 1000 | 800 |
| | (L/s) | 139 | 111 | 139 | 111 | 278 | 222 | 278 | 222 |
| External static pressure (Pa) | | 125 | 80 | 125 | 80 | 135 | 86 | 135 | 86 |
| Temperature exchange efficiency (%) | | 77.5 | 80 | — | — | 79.5 | 81.5 | — | — |
| Enthalpy exchange efficiency (%) | Heating | 68 | 71 | — | — | 71 | 74 | — | — |
| | Cooling | 65 | 67 | — | — | 69 | 71 | — | — |
| Cooling capacity (kW) | | 5.57(1.94) | | | | 11.44(4.12) | | | |
| Heating capacity (kW) | | 6.21(2.04) | | | | 12.56(4.26) | | | |
| Capacity equivalent to the indoor unit | | P32 | | | | P63 | | | |
| Humidifier | Humidifying | Permeable film humidifier | | | | | | | |
| | Humidifying capacity(kg/h) | 2.7(heating) | | | | 5.4(heating) | | | |
| | Water supply pressure | Minimum pressure : 2.0 × 10⁴Pa | | | | Maximum pressure : 49.0 × 10⁴Pa | | | |
| Noise (dB) | (Measured at 1.5m under the centre of the unit) | 33.5-34.5 | 29.5-30.5 | 35-36 | 29.5-30.5 | 38-39 | 34-35 | 38-39 | 35-36 |
| Weight (kg) | | 51(filled with water 55) | | | | 88(filled with water 96) | | | |

*Cooling/Heating capacity indicates the maximum value at operation under the following conditions.

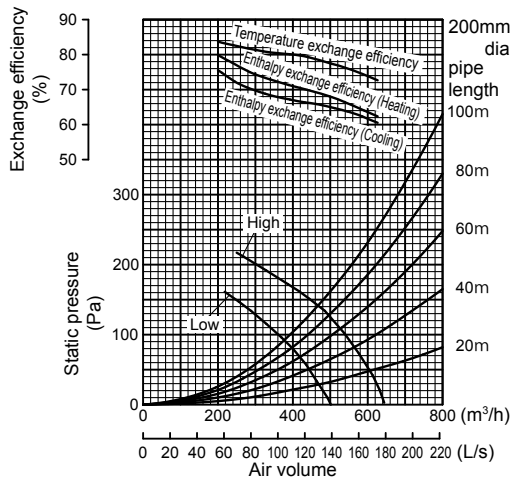
Cooling: Indoor: 27°CDB/19°CWB Outdoor: 35°CDB/24°CWB

Heating: Indoor: 20°CDB/13.8°CWB Outdoor: 7°CDB/6°CWB

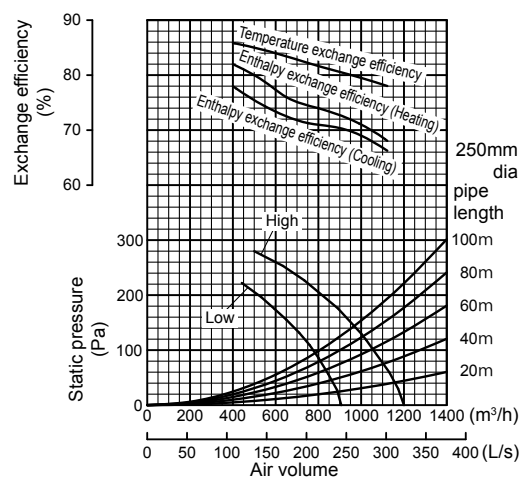
*The figures in () indicates heat recovering capacity of heat exchange core.

*Figures in the chart are measured according to Japan Industrial Standard (JIS B 8628). Characteristic Curves are measured by chamber method.

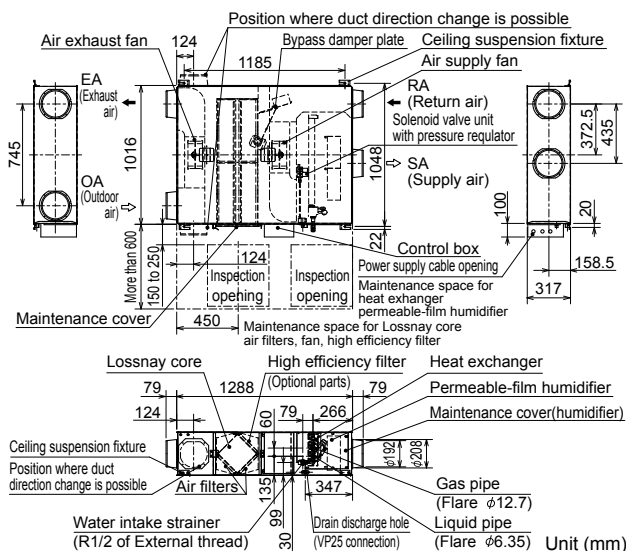
Characteristic Curve of the GUF-50RDH4



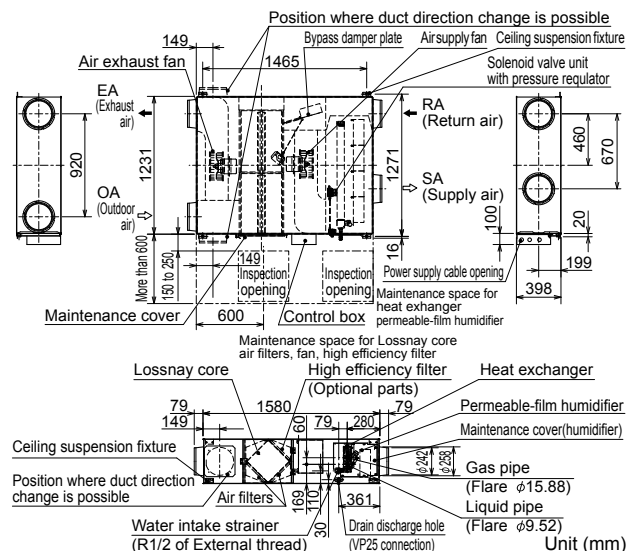
Characteristic Curve of the GUF-100RDH4



Dimensions of the GUF-50RDH4



Dimensions of the GUF-100RDH4

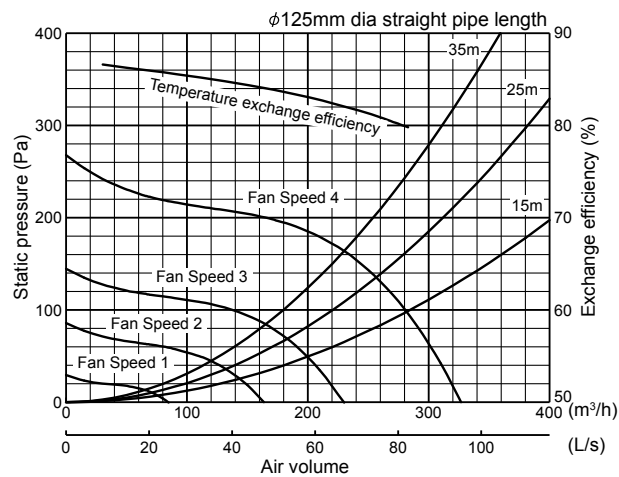


VL-220CZGV-E

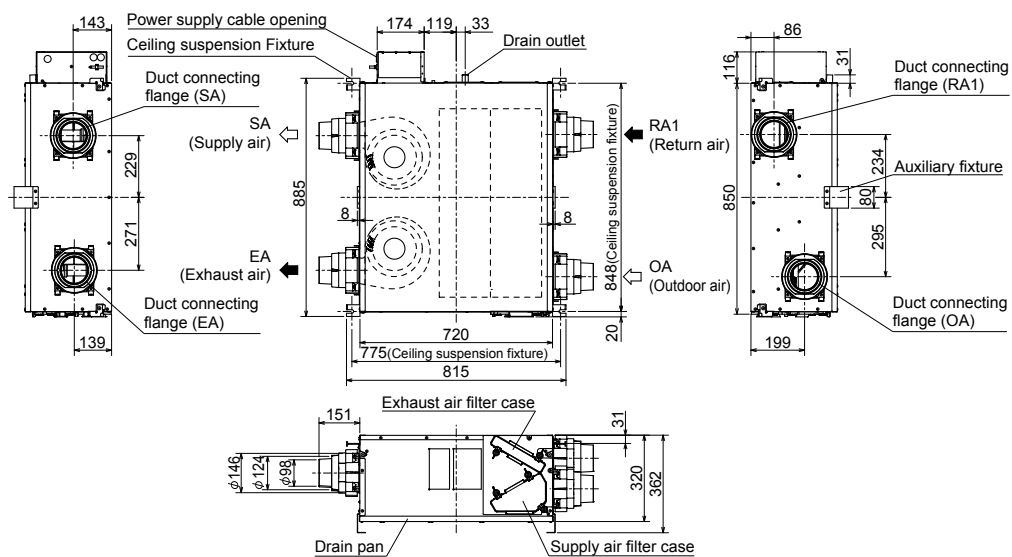


| Model | | VL-220CZGV-E | | | |
|-------------------------------------|---------------------|-------------------------|-------------|-------------|-------------|
| Electrical power supply | | 220-240V/50Hz 220V/60Hz | | | |
| Ventilation mode | | Heat recovery mode | | | |
| Fan speed | | Fan speed 4 | Fan speed 3 | Fan speed 2 | Fan speed 1 |
| Running current | | 0.60 | 0.29 | 0.18 | 0.11 |
| Input power (W) | | 80 | 35 | 18.5 | 8.5 |
| Air volume | (m ³ /h) | 230 | 165 | 120 | 65 |
| | (L/s) | 64 | 46 | 33 | 18 |
| External static pressure (Pa) | | 164 | 84 | 44 | 13 |
| Temperature exchange efficiency (%) | | 82.0 | 84.0 | 85.0 | 86.0 |
| Noise (dB) | | 31.0 | 25.0 | 19.0 | 14.0 |
| Weight (kg) | | 31 | | | |
| Specific energy consumption class | | A | | | |

Characteristic Curve of the VL-220CZGV-E

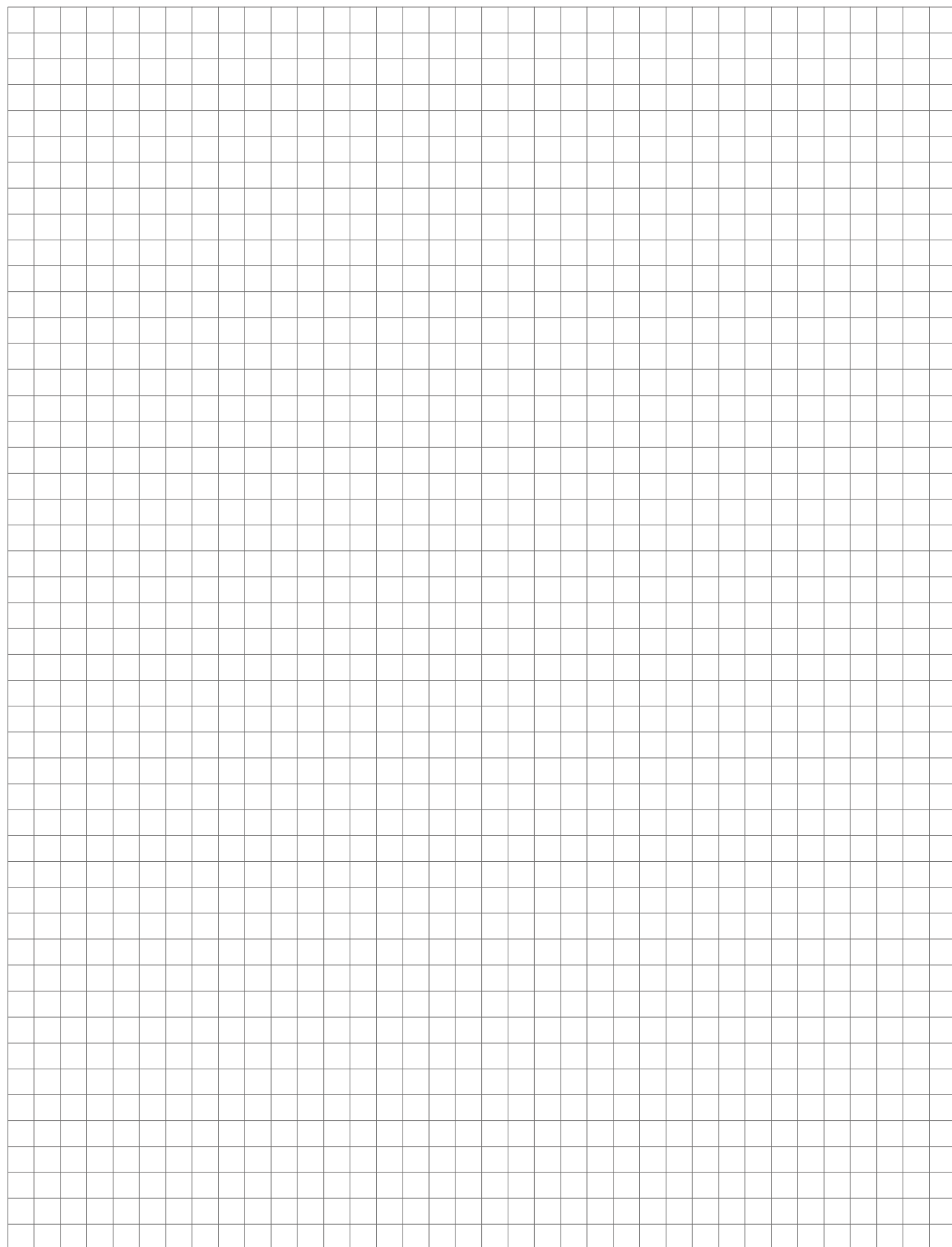


Dimensions of the VL-220CZGV-E

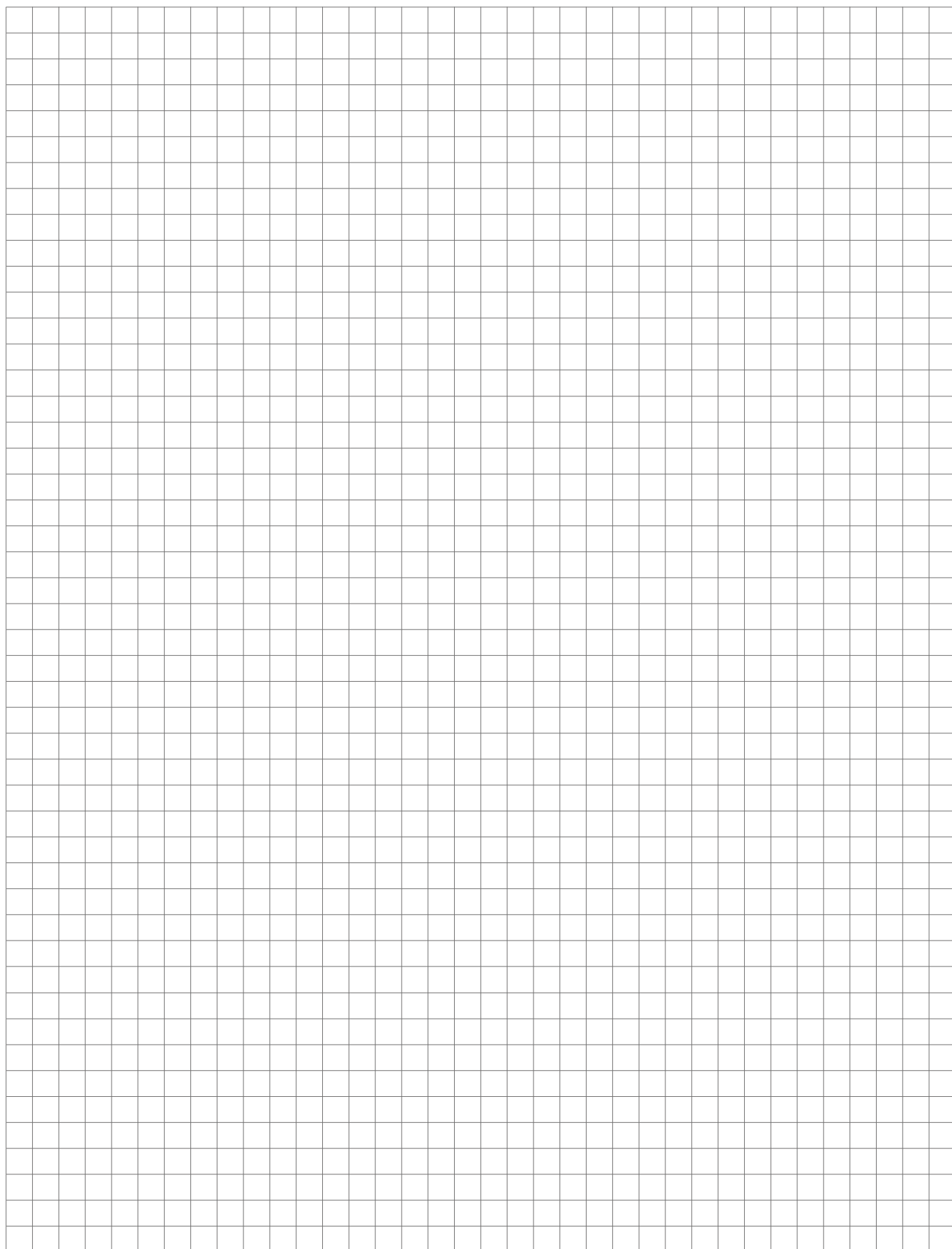


Unit (mm)

NOTES



NOTES





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