ENERGY RECOVERY VENTILATORS <LOSSNAY>
AIR CURTAIN
AIR CONDUCTING FAN
JET TOWEL

Eco Changes is the Mitsubishi Electric Group’s environmental statement, and expresses the Group’s stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.
From pushing the limits of precision in microelectronics to producing entire space satellites, Mitsubishi Electric has built up a reputation for innovating key technologies and achieving technological feats in a wide range of fields for nearly a century.

Especially for a long-term investment like photovoltaic products, it is crucial to have a reliable and stable manufacturer to honor its warranties and provide lasting support. Mitsubishi Electric is the brand name that you can trust to be there for you in the long run... For centuries to come.

Just a few of our achievements

**Power Semiconductors**

DIP-IPMs are compact power semiconductors that realize dramatically enhanced efficiency. Used in home appliances and other diverse applications, they contribute to significant energy savings.

**Hole-piercing Laser-processing Technologies for Printed Circuit Boards**

High-speed, precise laser processing enables printed circuit boards to be pierced at 4,500 holes per second; an FA technology supporting the evolution of smartphones.

**Transforming Equipment Development Technologies**

We verify the reliability of our transforming equipment by simulating severe natural environments, including extreme cold/heat, lightning strikes and earthquakes at the world’s largest testing facilities.

**Large-scale, High-purity Plastic Recycling**

Our recycling technology recovers up to 70% of plastic for use in new products. Typically, only about 6% is recoverable.

**Compact EV motor drive systems**

Our 60kW electric vehicle (EV) motor drive system prototype with a reduced cubic volume of 14.1 liters is the smallest EV motor drive in this category.
Mitsubishi Electric Corporation
Over 90 years of Excellence
Just a few of our achievements

Transforming Equipment Development Technologies

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Mitsubishi Electric is branched off from Mitsubishi corporation as a separate identity

E52, the first large-scale electric locomotive produced in Japan
Commencement of elevator & escalator production
Launched first commercial television

1928
1935
1953
1964
1980

1990
2000
2007
2008
2011
2014

Launched world’s first commercial car navigation system incorporating GPS
Adopted MISTY® technology as encryption standard for 3rd-generation mobile phones
Completed 173-meter-tall elevator testing tower (world’s tallest at the time)
Launched SUPERBIRD-C2, Japan’s first domestically produced commercial satellite
Debut of Hayabusa Series E5, holder of the Japanese speed record for a train
Unveiled world’s largest full ultra-HD video display* in Times Square, New York City

*As of Nov. 18, 2014 (based on total area)
### Line up

<table>
<thead>
<tr>
<th>Application</th>
<th>Model</th>
<th>Air volume</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>100 CMH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(CMH)</td>
</tr>
<tr>
<td>Commercial Use</td>
<td>LGH-RVX Series</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>LGH-RVXT Series</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>LGF-100GX-E</td>
<td>●</td>
</tr>
<tr>
<td>Residential Use</td>
<td>LGH-50RSDC-E1</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>VL-220CZGV-E</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>VL-100(E)U5-E</td>
<td>●</td>
</tr>
</tbody>
</table>

#### LGH-RVX Series
This commercially oriented system can be utilized virtually anywhere with high performance and functions.

#### LGH-RVXT Series
Thin large air volume models in LGH series with high performance and functions.

#### LGH-50RSDC-E1
Centralized ventilation for residential use with energy heat exchange. (for Europe only)

#### LGF-100GX-E
Floor standing heat recovery ventilation units which is compliant with VDI 6022 (German regulation)(for Europe only)

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

#### VL-220CZGV-E
Centralized ventilation for residential use with sensible heat exchange.

#### VL-100 (E) U5-E
Wall mount model. Particularly suitable for houses and small offices.

● 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.
Indoor air quality inside a building is optimised through temperature (sensible heat) and humidity (latent heat) 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.

After launching its first generation in 1970, Lossnay has evolved by always looking ahead of the air conditioning needs of the times, which continue to diversify.

The technology is used in a wide range of applications and units have been widely adopted in residences, office buildings, hospitals, schools, etc.
**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 human body**

<table>
<thead>
<tr>
<th>Oxygen concentration (%)</th>
<th>Normal air concentration</th>
<th>Safe limit</th>
<th>Breathing / Pulse increases headaches, nausea, vomiting</th>
<th>Dizziness, nausea, muscle weakness (leading to death)</th>
<th>Facial pallor, unconscious vomiting</th>
<th>Lapse into a coma and die in 8 minutes</th>
<th>Respiratory arrest, convulsion, death</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>21%</td>
<td>18%</td>
<td>16%</td>
<td>12%</td>
<td>10%</td>
<td>8%</td>
<td>6%</td>
</tr>
</tbody>
</table>

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

**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.

**In winter**

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

**Heat recovery calculation**

Indoor supply-air temperature (°C) × Outdoor temperature (°C) + Outdoor temperature (°C) × Indoor temperature (°C) ÷ Temp recovery efficiency (%)

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

**Source:** ASHRAE Trans. 91 - 1B (1985)
MITSUBISHI ELECTRIC Air Management:

**Easy Installation**
- Installable in tight ceiling spaces

**Energy Efficiency**
- Heat recovery ventilation
- Scheduled ventilation programs
- Contribute to EPBD (Energy Performance of Buildings Directive)

**Improve Indoor air quality**
- Ventilation on demand
- Simultaneous air supply and exhaust

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

**COMFO**
Heat recovery ventilation operation assures a comfortable indoor environment.

MITSUBISHI ELECTRIC is New Solutions for

LGH-RVXT Series
for a healthier, more comfortable work place and home.

Quiet and Comfortable Operation
- Ultraquiet operation.
- Minimizes temperature difference.
- Filter cuts pollen and dust for fresh clean air.

Save on Energy Costs
- Minimize energy consumption.
- Heat recovery ventilation.

Maintain a Healthy Living Environment
- 24 hours ventilation.
- Simultaneous air supply and exhaust.

Solutions

RTABLE

and low noise operation.

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 systems.

better air management.

VL-220CZGV-E

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Improved Air Volume Range

LGH-RX5 series model

<table>
<thead>
<tr>
<th>Time</th>
<th>Low</th>
<th>High</th>
<th>Extra Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22:00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Monday to Thursday

<table>
<thead>
<tr>
<th>Time</th>
<th>Low</th>
<th>High</th>
<th>Extra Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22:00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Friday

<table>
<thead>
<tr>
<th>Time</th>
<th>Low</th>
<th>High</th>
<th>Extra Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22:00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Saturday to Sunday

<table>
<thead>
<tr>
<th>Time</th>
<th>Fan Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00</td>
<td>2</td>
</tr>
<tr>
<td>9:00</td>
<td>2</td>
</tr>
<tr>
<td>12:00</td>
<td>1</td>
</tr>
<tr>
<td>13:00</td>
<td>2</td>
</tr>
<tr>
<td>17:00</td>
<td>1</td>
</tr>
<tr>
<td>22:00</td>
<td>1</td>
</tr>
</tbody>
</table>

Fan speed 1

Fan speed 2

Fan speed 3

Fan speed 4

Wide range air volume

Unlike the air volume produced by previous models, in which there are the three settings of “High,” “Low,” and “Extra-low,” the new model is 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 realize better performance and reduce power consumption.

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.

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 energysaving 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.

Previous model (LGH-RX5 series) characteristic curves

LGH-RVX/RVXT series model characteristic curves
Improved Air Volume Range

Wide range air volume

Unlike the air volume produced by previous models, in which there are the three settings of “High,” “Low,” and “Extra-low,” the new model is 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 realize better performance and reduce power consumption.

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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.

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.
Improved 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.

When the equipment layout is reviewed during renewal, even if new obstacles are found, installation can be smooth.

Often complicated installation under the roof can be handled flexibly!

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) 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, when the air volume is slightly lower than the desired airflow, it is possible to make fine adjustments.

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.

Improved Installation

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

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<table>
<thead>
<tr>
<th>Standard installation</th>
<th>Installation with duct direction changed</th>
</tr>
</thead>
<tbody>
<tr>
<td>A space is necessary to prevent the influx of rainwater.</td>
<td>Can be installed close to the surface of the wall.</td>
</tr>
<tr>
<td>EA ↓ OA</td>
<td>EA ↓ OA</td>
</tr>
<tr>
<td>Can be installed close to the surface of the wall.</td>
<td>Avoid installations where the stale air exhaust aperture would be blocked by lighting or air conditioning units.</td>
</tr>
<tr>
<td>EA ↓ OA</td>
<td>EA ↓ OA</td>
</tr>
<tr>
<td>Changing the duct direction</td>
<td>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. The direction of the ducts can only be changed on the outside (OA and EA). The inside cannot be changed (SA and RA).</td>
</tr>
<tr>
<td>Flange Plate</td>
<td>Exchangeable</td>
</tr>
</tbody>
</table>

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

OA/EA is 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 1500 - 2500 CMH, but has a thin body @500mm. Installing the unit behind the ceiling is easy.
Further 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 previous models, the unit is operated with only one condition that is set initially. With new models, it is possible to freely set* the night purge operation for the start conditions, air volume, and operation time and flexibly answer to the operating environment requests that vary with each customer.

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)".

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

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)

<table>
<thead>
<tr>
<th>Input voltage [VDC]</th>
<th>Fan speed</th>
<th>Fan speed changing from remote controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 1.0</td>
<td>—</td>
<td>Available</td>
</tr>
<tr>
<td>1.5 - 2.5</td>
<td>1</td>
<td>Not available</td>
</tr>
<tr>
<td>3.5 - 4.5</td>
<td>2</td>
<td>Not available</td>
</tr>
<tr>
<td>5.5 - 7.0</td>
<td>3</td>
<td>Not available</td>
</tr>
<tr>
<td>8.5 - 10.0</td>
<td>4</td>
<td>Not available</td>
</tr>
</tbody>
</table>

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

The New Remote Controller PZ-61DR-E enables simple control setting

<table>
<thead>
<tr>
<th>Interlocked with Air conditioners</th>
<th>Interlocked with City Multi</th>
<th>Interlocked with Mr.Slim</th>
<th>Lossnay independent</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-NET transmission line</td>
<td>City Multi</td>
<td>Lossnay RVX/RVXT</td>
<td>Lossnay RVX/RVXT (Max 15 units)</td>
</tr>
<tr>
<td>Lossnay remote controller PZ-61DR-E can be connected</td>
<td>Lossnay RVX/RVXT</td>
<td>Lossnay remote controller PZ-61DR-E</td>
<td>Lossnay remote controller PZ-61DR-E</td>
</tr>
<tr>
<td>(PZ-43SMF-E can be connected however function is limited.)</td>
<td>Option1: Slim-Lossnay connection cable (Impossible to use Lossnay remote controller)</td>
<td>Option2: PAC-SF40RM-E (Possible to use Lossnay remote controller)</td>
<td>'PZ-43SMF-E can be connected however'</td>
</tr>
</tbody>
</table>

**Centralised Controller System**

- The New Remote Controller PZ-61DR-E enables simple control setting
- Option1: Slim-Lossnay connection cable (Impossible to use Lossnay remote controller)
- Option2: PAC-SF40RM-E (Possible to use Lossnay remote controller)

- **Lossnay independent**
  - Lossnay RVX/RVXT (Max 15 units)

- **Centralised controller AE-200E**
  - Outdoor unit
  - Network unit
  - Lossnay RVX/RVXT

- **Interlocked with City Multi indoor units**
  - Indoor unit
  - Lossnay RVX/RVXT

- **Lossnay units only**
  - Lossnay RVX/RVXT
  - Lossnay remote controller PZ-61DR-E

- **Interlocked with external devices**
  - Ext. signal source
  - Lossnay RVX/RVXT
  - Lossnay remote controller PZ-61DR-E

- **Interlocked with Mr. Slim indoor units**
  - Mr. Slim outdoor unit
  - Mr. Slim indoor unit
  - Lossnay RVX/RVXT

- **Centralised Controller System**

- **System structure**
  - Each block: Each floor: Each unit
  - Collective: Each group: Not available

- **Features**
  - In an easy and flexible manner, an optimum system can be established according to the scale of facilities.
  - Implements control on up to 50 indoor units of air-conditioning equipment.
  - By using three units of expansion controller "AE-50E", the centralized control is implemented for the maximum of 200 indoor units.
  - Connection with PC allows implementation of control on more than 200 indoor units via Web browser.*1

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

**Functions**

- Use a security device such as a VPN router when connecting the AG-150A / AE-200E to the Internet to prevent unauthorised access.
Features of New Centralised Controller "AE-200E"

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

- Implements control on up to 50 indoor units of air-conditioning equipment.
- By using three units of expansion controller "AE-50E", the centralized control is implemented for the maximum of 200 indoor units.
- Connection with PC allows implementation of control on more than 200 indoor units via Web browser.*1

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

### System structure

![System structure diagram]

#### Functions

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Operations</th>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controllable number of unit</td>
<td>Up to 50 units/50 groups</td>
<td>○ ○ ○</td>
</tr>
<tr>
<td>ON/OFF</td>
<td>ON and OFF operation for the air conditioning units and general equipment. (To operate general equipment, PAC-YG66DCA is required.)</td>
<td>○ ○ ○</td>
</tr>
<tr>
<td>Operation mode</td>
<td>Switches between several operation modes depending on the air conditioning unit. Air conditioning unit : Cool/Dry/Auto/<em>Fan/Heat LOSSNAY unit : Heat Recovery/Bypass/Auto CAHV, CRHV, Air To Water (PWFY) units : Heating, Heating ECO, Hot Water, Anti-freeze, Cooling</em>* Auto mode is for CITY MULTI R2 and WR2 series only. ** Only PWFY</td>
<td>○ ○ ○ ○</td>
</tr>
<tr>
<td>Temperature setting</td>
<td>Cool/Dry : 19°C (67°F) -35°C (95°F) [14°C (57°F) -30°C (87°F)] Heat : 4.5°C (40°F) -28°C (83°F) [17°C (63°F) -28°C (83°F)]</td>
<td>○ ○ ○ ○</td>
</tr>
<tr>
<td>Fan speed setting</td>
<td>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.</td>
<td>○ ○ ○</td>
</tr>
<tr>
<td>Air flow direction setting</td>
<td>Air flow direction angles, 4-angles or 5-angles Swing, Auto (Louver cannot be set)</td>
<td>○ ○ ○</td>
</tr>
<tr>
<td>Schedule operation</td>
<td>Weekly schedule can be set by groups based on daily operation pattern.</td>
<td>○ ○ ○</td>
</tr>
<tr>
<td>Permit/prohibit local operation</td>
<td>Individually prohibits operation of each local remote controller function.</td>
<td>○ ○ ○</td>
</tr>
<tr>
<td>Indoor unit intake temperature</td>
<td>Measures the intake temperature of the indoor unit only when the indoor unit is operating.</td>
<td>○ ○</td>
</tr>
<tr>
<td>Error</td>
<td>When an error is currently occurring on an air conditioning unit, the afflicted unit and the error code are displayed.</td>
<td>○ ○ ○</td>
</tr>
<tr>
<td>Test run</td>
<td>This operates air conditioning units in test run mode.</td>
<td>○ ○ ○</td>
</tr>
<tr>
<td>Ventilation interlock</td>
<td>The ventilation unit (LOSSNAY) is able to automatically start its operation when operation of the interlocked indoor unit starts.</td>
<td>○ ○ ○</td>
</tr>
<tr>
<td>External input/output</td>
<td>By using optional external input/output adapter (PAC-YG10HA-E) you can set and monitor the following. Input : By level signal : &quot;Batch ON/OFF&quot;, &quot;Batch emergency stop&quot; By pulse signal : &quot;Batch ON/OFF&quot;, &quot;Enable/disable local remote controller&quot; Output : &quot;ON/OFF&quot;, &quot;Error/Normal&quot;</td>
<td>○ ○ ○</td>
</tr>
<tr>
<td>Energy Management</td>
<td>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.</td>
<td>○ ○</td>
</tr>
<tr>
<td>Advanced HVAC Controller (AHC)</td>
<td>The status of AHC can only be monitored.</td>
<td>○ ○</td>
</tr>
<tr>
<td>Smart ME controller</td>
<td>The status of sensor on this controller can be monitored.</td>
<td>○ ○</td>
</tr>
<tr>
<td>Smartphone/Tablet</td>
<td>The specified Web browser on iOS and Android OS can monitor and operate AE-200E.</td>
<td>○ ○</td>
</tr>
<tr>
<td>New Web design</td>
<td>The web screen design is renewed for user friendly interface.</td>
<td>○ ○</td>
</tr>
<tr>
<td>Initial setting software</td>
<td>The initial setting can be configured without the connection of AE-200E.</td>
<td>○ ○</td>
</tr>
<tr>
<td>Apportionment of power consumption</td>
<td>Apportionment of power consumption can be calculated on AE-200 without TG-2000A.</td>
<td>○ ○</td>
</tr>
<tr>
<td>BACnet® communication</td>
<td>ANSI/ASHRAE 135-2010 (ISO16484-5) is supported and approved by the BTL.</td>
<td>○ ○</td>
</tr>
</tbody>
</table>

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

LGH-15 to 100RVX-E

LGH-150 and 200RVX-E

LGH-150 to 250RVXT-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.*
**LGH-15/25RVX-E**

<table>
<thead>
<tr>
<th>Model</th>
<th><strong>LGH-15RVX-E</strong></th>
<th><strong>LGH-25RVX-E</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrical power supply</strong></td>
<td>220-240V/50Hz, 220V/60Hz</td>
<td>220-240V/50Hz, 220V/60Hz</td>
</tr>
<tr>
<td><strong>Ventilation mode</strong></td>
<td>Heat recovery mode</td>
<td>Heat recovery mode</td>
</tr>
<tr>
<td><strong>Fan speed</strong></td>
<td>SP4 SP3 SP2 SP1</td>
<td>SP4 SP3 SP2 SP1</td>
</tr>
<tr>
<td><strong>Running current (A)</strong></td>
<td>0.40 0.24 0.15 0.10</td>
<td>0.48 0.28 0.16 0.10</td>
</tr>
<tr>
<td><strong>Input power (W)</strong></td>
<td>49 28 14 7</td>
<td>62 33 16 7.5</td>
</tr>
<tr>
<td><strong>Air volume</strong></td>
<td>150 113 75 38</td>
<td>250 188 125 63</td>
</tr>
<tr>
<td><strong>External static pressure (Pa)</strong></td>
<td>95 54 24 6</td>
<td>85 48 21 5</td>
</tr>
<tr>
<td><strong>Temperature exchange efficiency (%)</strong></td>
<td>80.0 81.0 83.0 84.0</td>
<td>79.0 80.0 82.0 86.0</td>
</tr>
<tr>
<td><strong>Enthalpy exchange efficiency (Heating)</strong></td>
<td>73.0 75.5 78.0 79.0</td>
<td>69.5 72.0 76.0 83.0</td>
</tr>
<tr>
<td><strong>Enthalpy exchange efficiency (Cooling)</strong></td>
<td>71.0 74.5 78.0 79.0</td>
<td>68.0 70.0 74.5 83.0</td>
</tr>
<tr>
<td><strong>Noise (dB)</strong></td>
<td>28.0 24.0 19.0 17.0</td>
<td>27.0 22.0 20.0 17.0</td>
</tr>
<tr>
<td><strong>Weight (kg)</strong></td>
<td>20</td>
<td>23</td>
</tr>
<tr>
<td><strong>Specific energy consumption class</strong></td>
<td>A</td>
<td>A</td>
</tr>
</tbody>
</table>

---

*The Air outlets noise (45° angle, 1.5meters 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 is measured according to Japan Industrial Standard (JIS B 8628). Characteristic Curves are measured by chamber method.

---

**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

<table>
<thead>
<tr>
<th>Model</th>
<th>LGH-35RVX-E</th>
<th>LGH-50RVX-E</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrical power supply</strong></td>
<td>220-240V/50Hz, 220V/60Hz</td>
<td>220-240V/50Hz, 220V/60Hz</td>
</tr>
<tr>
<td><strong>Ventilation mode</strong></td>
<td>Heat recovery mode</td>
<td>Bypass mode</td>
</tr>
<tr>
<td><strong>Fan speed</strong></td>
<td>SP4</td>
<td>SP3</td>
</tr>
<tr>
<td><strong>Running current (A)</strong></td>
<td>0.98</td>
<td>0.54</td>
</tr>
<tr>
<td><strong>Input power (W)</strong></td>
<td>140</td>
<td>70</td>
</tr>
<tr>
<td><strong>Air volume (m³/h)</strong></td>
<td>350</td>
<td>263</td>
</tr>
<tr>
<td><strong>External static pressure (Pa)</strong></td>
<td>160</td>
<td>90</td>
</tr>
<tr>
<td><strong>Temperature exchange efficiency (%)</strong></td>
<td>80.0</td>
<td>82.5</td>
</tr>
<tr>
<td><strong>Enthalpy exchange efficiency (%)</strong></td>
<td>Heating</td>
<td>71.5</td>
</tr>
<tr>
<td><strong>Weight (kg)</strong></td>
<td>30</td>
<td>33</td>
</tr>
</tbody>
</table>

*The Air outlets noise (45° angle, 1.5meters in front of the unit) is about 12dB(LGH-35RVX-E) / 18dB(LGH-50RVX-E) greater than the indicated value.(at Fan speed 4)
*For the specification at the other frequency contact your dealer.
*Figures in the chart is measured according to Japan Industrial Standard (JIS B 8628). Characteristic Curves are measured by chamber method.

---

**MODEL**

**LGH Series**

---

- Certain ratings and specifications may change due to product improvements or modifications.
- Refer to the product manuals for safety precautions.
Figsures in the chart is measured according to Japan Industrial Standard (JIS B 8628). Characteristic Curves are measured by chamber method.

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

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

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

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

* Certain ratings and specifications may change due to product improvements or modifications. Refer to the product manuals for safety precautions.

Characteristic Curve of the LGH-65RVX-E

<table>
<thead>
<tr>
<th>Static pressure (Pa)</th>
<th>Efficiency (Heating)</th>
<th>Efficiency (Cooling)</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>77.0</td>
<td>68.5</td>
</tr>
<tr>
<td>250</td>
<td>81.0</td>
<td>71.0</td>
</tr>
<tr>
<td>300</td>
<td>84.0</td>
<td>74.0</td>
</tr>
<tr>
<td>350</td>
<td>86.0</td>
<td>81.0</td>
</tr>
</tbody>
</table>

Characteristic Curve of the LGH-80RVX-E

<table>
<thead>
<tr>
<th>Static pressure (Pa)</th>
<th>Efficiency (Heating)</th>
<th>Efficiency (Cooling)</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>79.0</td>
<td>79.0</td>
</tr>
<tr>
<td>250</td>
<td>82.5</td>
<td>72.5</td>
</tr>
<tr>
<td>300</td>
<td>85.0</td>
<td>75.0</td>
</tr>
<tr>
<td>350</td>
<td>88.0</td>
<td>78.0</td>
</tr>
</tbody>
</table>

Dimensions of the LGH-65RVX-E

<table>
<thead>
<tr>
<th>Model</th>
<th>LGH-65RVX-E</th>
<th>LGH-80RVX-E</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>220-240V/50Hz, 220V/60Hz</td>
<td>220-240V/50Hz, 220V/60Hz</td>
</tr>
<tr>
<td>Ventilation mode</td>
<td>Heat recovery mode</td>
<td>Bypass mode</td>
</tr>
<tr>
<td>Fan speed</td>
<td>SP4</td>
<td>SP3</td>
</tr>
<tr>
<td>Running current (A)</td>
<td>1.65</td>
<td>0.90</td>
</tr>
<tr>
<td>Input power (W)</td>
<td>252</td>
<td>131</td>
</tr>
<tr>
<td>Air volume (m³/h)</td>
<td>650</td>
<td>488</td>
</tr>
<tr>
<td>External static pressure (Pa)</td>
<td>120</td>
<td>68</td>
</tr>
<tr>
<td>Temperature exchange efficiency (%)</td>
<td>77.0</td>
<td>81.0</td>
</tr>
<tr>
<td>Enthalpy exchange efficiency (%)</td>
<td>Heating</td>
<td>68.5</td>
</tr>
<tr>
<td>Noise (dB)</td>
<td>34.5</td>
<td>29.0</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>38</td>
<td>48</td>
</tr>
</tbody>
</table>
Certain ratings and specifications may change due to product improvements or modifications. Refer to the product manuals for safety precautions.

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

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

*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).

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

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

*The Air outlets noise (45  angle,1.5meters 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 specification at the other frequency contact your dealer.

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

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

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

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

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

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

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

**LGH-200RVX-E**

### Electrical power supply
- **220-240V/50Hz, 220V/60Hz**

### Ventilation mode
- **Heat recovery mode**
  - Fan speed: SP4, SP3, SP2, SP1
  - Running current (A): 4.88, 2.20, 0.88, 0.33
  - Input power (W): 850, 400, 153, 42
  - Air volume (m³/h): 2000, 1500, 1000, 500
  - External static pressure (Pa): 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
  - Noise (dB): 40.0, 36.0, 28.0, 18.0

- **Bypass mode**
  - Fan speed: SP4, SP3, SP2, SP1
  - Running current (A): 4.54, 2.06, 0.87, 0.35
  - Input power (W): 853, 372, 150, 49
  - Air volume (L/s): 556, 417, 278, 139
  - External static pressure (Pa): 150, 84, 38, 10
  - Temperature exchange efficiency (%): 71.0, 73.0, 77.0, 85.5
  - Enthalpy exchange efficiency (Cooling): 71.0, 73.0, 77.0, 85.5
  - Noise (dB): 41.0, 36.0, 27.0, 19.0

### Specifications
- **Weight (kg):** 110

---

*The Air outlets noise (45° angle, 1.5meters 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 is measured according to Japan Industrial Standard (JIS B 8628). Characteristic Curves are measured by chamber method.

---

**Characteristic Curve**

![Characteristic Curve](image)

**Dimensions**

![Dimensions](image)

- Certain ratings and specifications may change due to product improvements or modifications. Refer to the product manuals for safety precautions.
## LGH-150/200RVXT-E

<table>
<thead>
<tr>
<th>Model</th>
<th>LGH-150RVXT-E</th>
<th>LGH-200RVXT-E</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrical power supply</strong></td>
<td>220-240V/50Hz, 220V/60Hz</td>
<td>220-240V/50Hz, 220V/60Hz</td>
</tr>
<tr>
<td><strong>Ventilation mode</strong></td>
<td>Heat recovery mode</td>
<td>Bypass mode</td>
</tr>
<tr>
<td><strong>Fan speed</strong></td>
<td>SP4 SP3 SP2 SP1</td>
<td>SP4 SP3 SP2 SP1</td>
</tr>
<tr>
<td><strong>Running current (A)</strong></td>
<td>4.30 2.40 1.10 0.36 3.40 1.80 0.77 0.31</td>
<td>5.40 2.70 1.10 0.39 5.00 2.20 0.85 0.34</td>
</tr>
<tr>
<td><strong>Input power (W)</strong></td>
<td>792 421 176 48 345 180 73 31</td>
<td>1000 494 213 65 334 154 63 26</td>
</tr>
<tr>
<td><strong>Air volume (m³/h)</strong></td>
<td>1500 1125 750 375 1500 1125 750 375</td>
<td>2000 1500 1000 500 2000 1500 1000 500</td>
</tr>
<tr>
<td><strong>External static pressure (Pa)</strong></td>
<td>Supply</td>
<td>Return</td>
</tr>
<tr>
<td><strong>Temperature exchange efficiency (%)</strong></td>
<td>80.0 80.5 81.0 81.5 80.0 81.0 82.5 84.0</td>
<td>80.0 81.0 82.5 84.0</td>
</tr>
<tr>
<td><strong>Enthalpy exchange efficiency (%)</strong></td>
<td>Heating</td>
<td>Cooling</td>
</tr>
<tr>
<td><strong>Noise (dB)</strong></td>
<td>39.5 35.5 29.5 22.0 39.0 33.0 26.5 20.5</td>
<td>40.5 34.5 27.0 20.5</td>
</tr>
<tr>
<td><strong>Weight (kg)</strong></td>
<td>156</td>
<td>159</td>
</tr>
</tbody>
</table>

*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 is measured according to Japan Industrial Standard (JIS B 8628). Characteristic Curves are measured by chamber method.

---

### Characteristic Curve of the LGH-150RVXT-E

![Characteristic Curve of the LGH-150RVXT-E](image)

### Characteristic Curve of the LGH-200RVXT-E

![Characteristic Curve of the LGH-200RVXT-E](image)

### Dimensions of the LGH-150RVXT-E

![Dimensions of the LGH-150RVXT-E](image)

### Dimensions of the LGH-200RVXT-E

![Dimensions of the LGH-200RVXT-E](image)

---

**Note:** Certain ratings and specifications may change due to product improvements or modifications. Refer to the product manuals for safety precautions.
**MODEL**

**LGH-250RVXT-E**

---

### Characteristic Curve

---

### Dimensions

---

- **Model**: LGH-250RVXT-E

<table>
<thead>
<tr>
<th>Electrical power supply</th>
<th>220-240V/50Hz, 220V/60Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ventilation mode</td>
<td></td>
</tr>
<tr>
<td>Fan speed</td>
<td>SP4 SP3 SP2 SP1 SP4 SP3 SP2 SP1</td>
</tr>
<tr>
<td>Running current (A)</td>
<td>7.60 3.60 1.40 0.57 6.90 3.10 1.30 0.49</td>
</tr>
<tr>
<td>Input power (W)</td>
<td>1446 687 244 82 1298 587 212 69</td>
</tr>
<tr>
<td>Air volume (m³/h)</td>
<td>2500 1875 1250 625 2500 1875 1250 625</td>
</tr>
<tr>
<td>External static pressure (Pa)</td>
<td>Supply 175 98 44 11</td>
</tr>
<tr>
<td>Temperature exchange efficiency (%)</td>
<td>77.0 79.0 80.5 82.5</td>
</tr>
<tr>
<td>Enthalpy exchange efficiency (%)</td>
<td>Heating 68.0 71.5 74.0 79.0</td>
</tr>
<tr>
<td>Noise (dB)</td>
<td>43.0 39.0 32.0 24.0</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>198</td>
</tr>
</tbody>
</table>

---

*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 is measured according to Japan Industrial Standard (JIS B 8628). Characteristic Curves are measured by chamber method.

---

- **Model**: LGH-250RVXT-E

---

- **Bypass damper plate**
- **Flange**
- **Lossnay cores**
- **Control box**
- **Power supply cable opening**
- **Exhaust pipe guide**
- **Supply pipe guide**
- **Air exhaust fan (Outside)**
- **Air exhaust fan (Inside)**
- **Ceiling suspension fixture(6-15 X 30 oval)**

---

- **Unit (mm)**

---

*Certain ratings and specifications may change due to product improvements or modifications. Refer to the product manuals for safety precautions.*
### LGH-50RSDC-E1

#### Electrical power supply

<table>
<thead>
<tr>
<th>Ventilation mode</th>
<th>220-240V/50Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat recovery mode</td>
<td>Bypass mode</td>
</tr>
<tr>
<td>Fan speed</td>
<td>Power</td>
</tr>
<tr>
<td>Running current (A)</td>
<td>1.17</td>
</tr>
<tr>
<td>Input power (W)</td>
<td>165</td>
</tr>
<tr>
<td>Air volume (m³/h)</td>
<td>395</td>
</tr>
<tr>
<td>External static pressure (Pa)</td>
<td>100</td>
</tr>
<tr>
<td>Temperature exchange efficiency (%)</td>
<td>77.5</td>
</tr>
<tr>
<td>Enthalpy exchange efficiency (%)</td>
<td>Heating</td>
</tr>
<tr>
<td></td>
<td>Cooling</td>
</tr>
<tr>
<td>Noise (dB)</td>
<td>31</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>48</td>
</tr>
</tbody>
</table>

*This specifications are under 230V/50Hz.

Winter heating condition (EN308) OA:5°C DB 2.5°C WB, RA:25°C DB 14°C WB
Summer cooling condition (JIS B 8628) OA:34.5°C DB 30.5°C WB, RA:26.5°C DB 21.5°C WB
*Figures in the chart is measured according to Japan Industrial Standard (JIS B 8628) except temperature and humidity condition of exchange efficiency test. Characteristic Curves are measured by chamber method.
*This model does not have the functions on page 12 to 16.

### Characteristic Curve

![Characteristic Curve Diagram](image_url)

### Dimensions

![Dimensions Diagram](image_url)

- Certain ratings and specifications may change due to product improvements or modifications.
- Refer to the product manuals for safety precautions.
“Multi-ventilation Mode,” which allows the air supply/exhaust balance to be varied dynamically. The supply/exhaust balance can be selected to suit the usage environment and location, such as allowing for air exhausted via extractor fans. Modes can be selected easily by setting the dip-switches on the circuit board.

* “High fan speed” can also be further set to “Extra High” using the unit switch.

Offers choice of 9 air supply/exhaust combination patterns.

- High
- High
- Low
- High
- Low
- High
- Low
- High
- Low

Air supply and exhaust are “Low” irrespective of unit setting.

- High
- High
- Low
- High
- Low

Ventilation mode

- Power air supply/exhaust mode
- Power air supply mode
- Power air exhaust mode
- Energy-saving ventilation mode

Remote Controller

- Smaller offices or tenant buildings, etc.
- Using Lossnay compensates for using extractor fans... Smoking areas, etc.
- Priority on air exhaust...
- Normal office, etc.
- Providing efficient ventilation while maintaining air supply/exhaust balance...

This model is compliant with hygiene regulation “VDI6022” (German regulation). All components are easy to access and cleaned from the front panel. The front panel opens for easy cleaning and maintenance. The floor standing type is perfect for placement in mechanical rooms. Due to its top-duct flange style, the top has space for flexible, installation, and duct work.

Hygiene Certified According to VDI6022

Easy Maintenance

Top Out Duct Flange Style

● 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.
Multi Ventilation Mode

Featuring “Multi-ventilation Mode,” which allows the air supply/exhaust balance to be varied dynamically.

The supply/exhaust balance can be selected to suit the usage environment and location, such as allowing for air exhausted via extractor fans. Modes can be selected easily by setting the dip-switches on the circuit board.

Offers choice of 9 air supply/exhaust combination patterns.

<table>
<thead>
<tr>
<th>Remote Controller</th>
<th>Ventilation mode</th>
<th>Supply airflow</th>
<th>Exhaust airflow</th>
<th>Unit setting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Power air supply/exhaust mode</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Power air supply mode</td>
<td>High</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Power air exhaust mode</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Energy-saving ventilation mode</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

*“High fan speed” can also be further set to “Extra High” using the unit switch.

Hygiene Certified According to VDI6022

This model is complying with hygiene regulation “VDI6022” (German regulation).
All components are easy to be accessed and cleaned from the front panel.
The front panel opens for easy cleaning and maintenance.

Easy Maintenance

Top Out Duct Flange Style

The floor standing type is perfect for placement in mechanical rooms.
Due to its top-duct flange style the top has space for flexible, installation and duct work.

LGF-100GX-E

Normal office, etc.
Providing efficient ventilation while maintaining air supply/exhaust balance...

Smaller offices or tenant buildings, etc.
Using Lossnay compensates for using extractor fans...

Smoking areas, etc.
Priority on air exhaust...

Power air supply/exhaust
Power air supply
Power air exhaust

● 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.
**MODEL**

**LGF-100GX-E**

<table>
<thead>
<tr>
<th>Model</th>
<th>LGF-100GX-E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical power supply</td>
<td></td>
</tr>
<tr>
<td>Ventilation mode</td>
<td>Heat recovery mode</td>
</tr>
<tr>
<td>Fan speed</td>
<td>Extra high</td>
</tr>
<tr>
<td>Running current (A)</td>
<td>4.20</td>
</tr>
<tr>
<td>Input power (W)</td>
<td>230V/50Hz</td>
</tr>
<tr>
<td>Air volume (m³/h)</td>
<td>995</td>
</tr>
<tr>
<td>External static pressure (Pa)</td>
<td>200</td>
</tr>
<tr>
<td>Temperature exchange efficiency (%)</td>
<td>Heating</td>
</tr>
<tr>
<td>Enthalpy exchange efficiency (%)</td>
<td>Heating</td>
</tr>
<tr>
<td>Cooling</td>
<td>71</td>
</tr>
<tr>
<td>Noise (dB) (Measured at 1.0m away from the unit in an anechoic chamber)</td>
<td>49</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>164</td>
</tr>
</tbody>
</table>

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

**Characteristic Curve**

**Dimensions**

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- Certain ratings and specifications may change due to product improvements or modifications. Refer to the product manuals for safety precautions.
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.

GUF Series
Lossnay 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 preventing ailments such as sick building syndrome. 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**

**OA (Outdoor air)**
Fresh, outdoor-air in a quantity required for ventilation is drawn in by the supply fan.

**Heat recovery unit (Lossnay core)**
Temperature and humidity are exchanged between the supply air and the exhaust air.

**Maintenance cover**

**Air filter**
Prevents clogs in the Lossnay core.

**DX Heat exchanger**
Cools or heats the drawn in outdoor-air.

**EA (Exhaust air)**
Heat from the indoor air (both sensible and latent) is recovered by the Lossnay core and vented outside by the exhaust fan.

**The exhaust fan**

**High efficiency filters (Option)**

**The supply fan**

**RA (Return air)**
The exhaust fan draws contaminated indoor-air.

**SA (Supply air)**
The processed, fresh outdoor-air is vented to the indoor rooms.

**GUF-RDH type**

**OA (Outdoor air)**
Fresh, outdoor-air in a quantity required for ventilation is drawn in by the supply fan.

**Heat recovery unit (Lossnay core)**
Temperature and humidity are exchanged between the supply air and the exhaust air.

**Maintenance cover**

**Air filter**
Prevents clogs in the Lossnay core.

**DX Heat exchanger**
Cools or heats the drawn in outdoor-air.

**Permeable-film humidifier**
Humidifies the drawn in outdoor-air as is necessary to produce a comfortable indoor environment.

**EA (Exhaust air)**
Heat from the indoor air (both sensible and latent) is recovered by the Lossnay core and vented outside by the exhaust fan.

**The exhaust fan**

**High efficiency filters (Option)**

**The supply fan**

**RA (Return air)**
The exhaust fan draws contaminated indoor-air.

**SA (Supply air)**
The processed, fresh outdoor-air is vented to the indoor rooms.
These Units can be Used on R410A.

Outdoor units available in the GUF-RD/RDH series:
(For details see Mitsubishi Electric’s “CITY MULTI” catalogue)

R410A refrigerant units

<table>
<thead>
<tr>
<th>Model size</th>
<th>P200</th>
<th>P250</th>
<th>P300</th>
<th>P350</th>
<th>P400</th>
<th>P450</th>
<th>P500</th>
<th>P550</th>
<th>P600</th>
<th>P650</th>
<th>P700</th>
<th>P750</th>
<th>P800</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y series</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R2 series</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

Permeable Film Humidifier

Comfortable Level of Humidity for Exceptionable Air Quality

The OA Processing Unit is equipped with a permeable film humidifier developed by Mitsubishi Electric. Steam transmission efficiency has been improved remarkably by lowering the resistance of the material. By providing an optimum level of humidity, the OA Processing Unit creates a comfortable interior environment preventing 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 utilizes 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 guarantee effective ventilation even in highly insulated air-tight rooms. The Lossnay core is designed such 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.

<table>
<thead>
<tr>
<th>Standard installation</th>
<th>Installation with duct direction changed</th>
</tr>
</thead>
<tbody>
<tr>
<td>A space is necessary</td>
<td>Can be installed close to the surface of</td>
</tr>
<tr>
<td>to prevent the influx</td>
<td>the wall.</td>
</tr>
<tr>
<td>of rainwater.</td>
<td></td>
</tr>
</tbody>
</table>

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

**GUF-50/100RD4**

<table>
<thead>
<tr>
<th>Model</th>
<th>GUF-50RD4</th>
<th>GUF-100RD4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrical power supply</strong></td>
<td>220-240V/50Hz</td>
<td>220-240V/50Hz</td>
</tr>
<tr>
<td><strong>Ventilation mode</strong></td>
<td>Heat recovery mode</td>
<td>Heat recovery mode</td>
</tr>
<tr>
<td><strong>Fan speed</strong></td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td><strong>Running current (A)</strong></td>
<td>1.15</td>
<td>2.20</td>
</tr>
<tr>
<td><strong>Input power (W)</strong></td>
<td>235-265</td>
<td>480-505</td>
</tr>
<tr>
<td><strong>Air volume (m³/h)</strong></td>
<td>500</td>
<td>1000</td>
</tr>
<tr>
<td><strong>External static pressure (Pa)</strong></td>
<td>140</td>
<td>140</td>
</tr>
<tr>
<td><strong>Temperature exchange efficiency (%)</strong></td>
<td>77.5</td>
<td>79.5</td>
</tr>
<tr>
<td><strong>Enthalpy exchange efficiency (%)</strong></td>
<td>Heating: 68</td>
<td>Heating: 65</td>
</tr>
<tr>
<td><strong>Cooling capacity (kW)</strong></td>
<td>5.57</td>
<td>11.44</td>
</tr>
<tr>
<td><strong>Heating capacity (kW)</strong></td>
<td>6.21</td>
<td>12.56</td>
</tr>
<tr>
<td><strong>Capacity equivalent to the indoor unit</strong></td>
<td>P32</td>
<td>P63</td>
</tr>
<tr>
<td><strong>Noise (dB)</strong></td>
<td>33.5-34.5</td>
<td>33.5-34.5</td>
</tr>
<tr>
<td><strong>Weight (kg)</strong></td>
<td>48</td>
<td>82</td>
</tr>
</tbody>
</table>

*Cooling/Heating capacity indicates the maximum value at operation under the following condition.
Cooling: Indoor:27°CDB/19°CWB Outdoor:35°CDB/24°CWB
Heating: Indoor:20°CDB/13°CWB Outdoor:7°CDB/6°CWB
*The figures in ( ) indicates heat recoverying capacity of heat exchange core.
*Figures in the chart is measured according to Japan Industrial Standard (JIS B 8628). Characteristic Curves are measured by chamber method.

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**Characteristic Curve of the GUF-50RD4**

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**Characteristic Curve of the GUF-100RD4**

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**Dimensions of the GUF-50RD4**

---

**Dimensions of the GUF-100RD4**

---

* Certain ratings and specifications may change due to product improvements or modifications. * Refer to the product manuals for safety precautions.
GUF Series

35

GUF-50/100RDH4

Model

GUF-50RDH4

GUF-100RDH4

Electrical power supply

220-240V/50Hz

220-240V/50Hz

Ventilation mode

Heating mode

Bypass mode

Heating mode

Bypass mode

Fan speed

High

Low

High

Low

Running current (A)

1.15

0.70

1.15

0.70

Input power (W)

235-265

150-165

235-265

150-165

Air volume (m³/h)

500

400

500

400

Air external static pressure (Pa)

139

111

139

111

Temperature exchange efficiency (%)

77.5

80

79.5

81.5

Enthalpy exchange efficiency (%)

68

71

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 capacity (kg/h)

2.7(heating)

5.4(heating)

Water supply pressure

Minimum pressure: 2.0 × 10⁵ Pa

Maximum pressure: 49.0 × 10⁵ Pa

Noise (dB) (Measured at 1.5m under the center of the unit)

33.5-34.5

29.5-30.5

35-36

29.5-30.5

Enthalpy exchange efficiency (Cooling)

33-34

30-31

35-36

30-31

Temperature exchange efficiency

65

67

69

71

GUF Series

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

GUF Series

Circuit design and appearance may change due to product improvements or modifications.

GUF Series

Refer to the product manuals for safety precautions.
VL-220CZGV-E
Unprecedented energy saving ventilation system will fulfill your life environment more comfortable and enhance the indoor environment with a energy-saving ventilation system.

More comfortable!
- Minimizes temperature difference
- Shuts out 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)
- Equals saving on your energy costs
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.

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%.

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

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

Normal Square Heat Exchanger
Simple structure contributes to minimize pressure loss and reduce power consumption.

New Diamond Heat Exchanger
Due to the diamond design, air passages are longer and help realize higher exchange efficiency.

Supply air filter
It removes insects, pollen, dirt, dust, and other particles from the outside air that is taken into the room.

Supply air filter fixing knob
Release it to remove the supply air filter case. (3 locations)

Drain pan (supply air side)
It holds dew condensation water that occurs inside the Lossnay unit.

Exhaust air filter case
It holds the supply air filter or High efficiency supply air filter.

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, when 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 1 down and 2 down)

Supply air volume
Static pressure

Fan speed
1
2
3
4

Air volume
25% 50% 75% 100%

+2
+1
Original
-1
-2

P-Q curve image
VL-220CZGV-E characteristic curves
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 realize better performance and reduce power consumption.

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 fixing knobs
2) Remote the air filters from the filter cases
3) Clean at least once every six months
4) The drain pan can be cleaned with a vacuum cleaner

Fan speed setting
Maintenance
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 realize better performance and reduce power consumption.

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, when 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)

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 fixing knobs

Supply air filter case
- It holds the supply air filter or High efficiency supply air filter.

Supply air filter fixing knob
- Release it to remove the supply air filter case. (3 locations)

Supply air filter
- It removes insects, pollen, dirt, dust, and other particles from the outside air that is taken into the room.

Drain pan (supply air side)
- It holds dew condensation water that occurs inside the Lossnay unit.

2) Remove the air filters from the filter cases

Supply air filter case
- Exhale air filter case

Supply air filter
- Exhaust air filter

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.

<table>
<thead>
<tr>
<th>Nomal Mode</th>
<th>Power Supply Mode</th>
<th>Power Exhaust Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relax time</td>
<td>Adjust the indoor pressure balance in case a separate exhaust is installed</td>
<td>Increase indoor pressure to prevent unfiltered drafts from coming in</td>
</tr>
<tr>
<td>Keep steam inside of the shower room</td>
<td>Prevent odors from spreading</td>
<td></td>
</tr>
</tbody>
</table>

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.
## 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, 6.5
- Air volume (m³/h): 230, 165, 120, 66
- 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

### Dimensions

#### Characteristic Curve

![Characteristic Curve](image)

#### Dimensions

![Dimensions](image)

*Certain ratings and specifications may change due to product improvements or modifications. Refer to the product manuals for safety precautions.*
VL-1000 (E) U5-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.
Stylish Design

**VL-100U-E <Pulling switch model>**

Pull the cord to switch from Hi to Lo to Off.

- **High operation (Operation indicator lights.)**
- **Low operation**
- **Off (Operation indicator goes out.)**

**VL-100EU-E <Wall switch model>**

Using the control switches.

- **Power switch (On-Off)**
- **Airflow switch (Hi-Lo fan speed)**

Simple Installation

Easy installation through boring of 2 installation holes. All of the parts needed for installation is including the carton box of the products.

Easy Maintenance

1. **Remove the Lossnay core**
   - Press the prong of the Lossnay core's handle and pull the handle toward you to remove the core.
   - Core handle
   - Prong
   - Lossnay core

2. **Remove the Filters**
   - 1) Pressing on the filter frame prong, pull the filter toward you to remove the filter frame from the main unit.
   - Outside air filter
   - Prong
   - Filter frame

3. **Cleaning**
   - Vacuum the dust from the filter, and then handwash it in water with a neutral detergent or in lukewarm water (up to 40°C). Then dry it thoroughly to remove moisture.
   - Vacuum cleaner
   - Outside air filter

Low Noise Design

By providing a range of air volume for each fan speed, sound levels can be reduced to achieve low noise. (Less than 30dB at low fan speed)

Total Heat Exchange

**In summer**

- **24°C** Fresh cool air (indoor supply air)
- **33°C** Stale hot air (exhaust)
- **21°C** Stale cool air (indoor return air)

**Calculation example:** $24°C = 36°C - (36°C - 21°C) \times 80\% \ (\text{Low fan speed})$

**In winter**

- **16°C** Fresh warm air (indoor supply air)
- **36°C** Stale warm air (indoor return air)
- **20°C** Fresh cool air (indoor return air)
- **4°C** Stale cold air (exhaust)

**Calculation example:** $16°C = (20°C - 0°C) \times 80\% \ + 0°C \ (\text{Low fan speed})$

● 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.
## Dimensions

<table>
<thead>
<tr>
<th>Model</th>
<th>VL-100(E)U5-E</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrical power supply</strong></td>
<td>220V/50Hz</td>
</tr>
<tr>
<td>Fan speed</td>
<td>High</td>
</tr>
<tr>
<td>Air volume (m³/h)</td>
<td>100</td>
</tr>
<tr>
<td>Power consumption (W)</td>
<td>30</td>
</tr>
<tr>
<td>Temperature exchange efficiency (%)</td>
<td>73</td>
</tr>
<tr>
<td>Noise (dB)</td>
<td>36.5</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>7.5</td>
</tr>
<tr>
<td>Specific energy consumption class</td>
<td>B</td>
</tr>
</tbody>
</table>

### Note
- Certain ratings and specifications may change due to product improvements or modifications. 
- Refer to the product manuals for safety precautions.
## Optional Parts List

### Remote controller

- **PZ-61DR-E**
  ![PZ-61DR-E](image1)
  - Unit (mm): 150 x 70 x 15
  - Lower case: Unit (mm)

- **PZ-43SMF-E**
  ![PZ-43SMF-E](image2)
  - Unit (mm): 130 x 70 x 15

- **PZ-60DR-E**
  ![PZ-60DR-E](image3)
  - Unit (mm): 150 x 80 x 13

### Function (Communicating Mode) & Specifications

<table>
<thead>
<tr>
<th>Function (Communicating Mode)</th>
<th>PZ-61DR-E</th>
<th>PZ-43SMF-E</th>
<th>PZ-60DR-E</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fanspeed selection</strong></td>
<td>4 fan speeds</td>
<td>2 of 4 fan speeds</td>
<td>2 of 4 fan speeds</td>
</tr>
<tr>
<td><strong>Ventilation mode selection</strong></td>
<td>Energy recovery / Bypass / Auto</td>
<td>Energy recovery / Bypass / Auto (available with optional parts P-133DUE-E)</td>
<td>Energy recovery / Bypass / Auto (available with optional parts P-133DUE-E)</td>
</tr>
<tr>
<td><strong>Night-purge (time)</strong></td>
<td>Anytime schedule</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Night-purge (fan speed)</strong></td>
<td>Selectable from 4 fan speeds</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Function setting from RC</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Bypass temp. free setting</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Heater-On temp. free setting</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Fan power change after installation</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>On/Off timer</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Auto-Off timer</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Weekly timer</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Operation restrictions (On/Off, ventilation mode, fan speed)</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Operation restrictions (fan speed skip setting)</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Language selection</strong></td>
<td>Yes (8 languages)</td>
<td>Yes (8 languages)</td>
<td>No (English Only)</td>
</tr>
<tr>
<td><strong>Screen contrast adjustment</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Initializing remote controller</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Filter cleaning sign</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Lossnay core cleaning sign</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Error indication</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Error history</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Certain ratings and specifications may change due to product improvements or modifications. Refer to the product manuals for safety precautions.
Optional Parts for LGH and LGF type

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

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.

Optional Parts for VL-100(E)Us-E
High performance filter P-100HF5-E
Upgraded high-performance filter.

Optional Parts for VL-220CZGV-E
Bypass damper

Extension pipe P-100P-E
Total length when connected to the pipe extension coupling is 300mm.

Replacement filter P-100F5-E
Standard grade replacement filter.

Extension pipe coupling P-100PJ-E
Screw-in method

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)
2 year (replacement)
Cannot be cleaned

Clean approximately once every 6 months
Clean approximately once every 6 months

Nonwoven filter
Filtration efficiency (EU-G3)

High performance filter
P-100HF5-E

Bypass damper

Extension pipe
P-100P-E

Replacement filter
P-100F5-E

Extension pipe coupling
P-100PJ-E

48

Certain ratings and specifications may change due to product improvements or modifications. Refer to the product manuals for safety precautions.
Air curtain

Not only does the installation of an air curtain help to maintain a constant comfortable indoor temperature, it saves energy too.

Install an automatic door to achieve even more economical operation and a more pleasant indoor environment.

Economic benefits of installing an air curtain. (Savings are calculated using an appropriate heating load factor required to keep room temperature constant at 28ºC for a room measuring 66.4m² in area.)

<table>
<thead>
<tr>
<th>Heating mode</th>
<th>Cooling mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy loss due to other causes</td>
<td>29 kW</td>
</tr>
<tr>
<td>Energy loss from the door area</td>
<td>12.6 kW</td>
</tr>
<tr>
<td>Energy loss from the door area</td>
<td>9.5 kW</td>
</tr>
</tbody>
</table>

(1)Floor space 66.4m²
(2)Temperature and humidity

Indoor Temperature
- Heating mode: 18ºC
- Cooling mode: 28ºC

Indoor Humidity
- Heating mode: 0ºC
- Cooling mode: 32ºC

Outdoor Temperature
- Heating mode: 70%
- Cooling mode: 60%

Indoor Outdoor
- Temperature
- Humidity

Powerful airflow yet low noise
The hydromechanic technology applied to Mitsubishi Electric’s Quiet Fan provides large airflow with low noise.

Low Energy Consumption
Our Quiet Fan has achieved major improvements in energy efficiency and operation cost compared to the previous model using a line flow fan.

The use of axial Fan (quiet propeller design) makes the unit easier to maintain and keep the unit in top condition at all times.

Moreover, an improvement resulted from a change of fan from line flow fan to axial flow fan extends the life span of the unit.

The twin nozzle design allows the Air Curtain to generate larger air-velocity distribution with less air intake.

Resistant to the influence of external airflow has been strengthened greatly improving insulation against heat and cold.

The air flow angle can be adjusted both internally and externally.

The unit can be installed vertically or horizontally according to the available space.

● 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.
Quiet Propeller Design

Powerful airflow yet low noise
The hydromechanic technology applied to Mitsubishi Electric’s Quiet Fan provides large airflow with low noise.

Low Energy Consumption
Our Quiet Fan has achieved major improvements in energy efficiency and operation cost compared to the previous model using a line flow fan.

Easy Maintenance
The use of axial Fan (quiet propeller design) makes the unit easier to maintain and keep the unit in top condition at all times. Moreover, an improvement resulted from a change of fan from line flow fan to axial flow fan extends the life span of the unit.

Twin Nozzle
The twin nozzle design allows the Air Curtain to generate larger air-velocity distribution with less air intake. Resistant to the influence of external airflow has been strengthened greatly improving insulation against heat and cold.

Flexible installation
The airflow angle can be adjusted both internally and externally. The unit can be installed vertically or horizontally according to the available space.

Economic Benefits
Not only does the installation of an air curtain help to maintain a constant comfortable indoor temperature, it saves energy too. Install an automatic door to achieve even more economical operation and a more pleasant indoor environment.

Cooling mode
Economic benefits of installing an air curtain. (Savings are calculated using an appropriate cooling load factor to keep room temperature constant at 28°C in a room measuring 66.4m² in area.)

<table>
<thead>
<tr>
<th>Open plan premises</th>
<th>Energy loss due to other causes</th>
<th>Energy loss from the door area</th>
</tr>
</thead>
<tbody>
<tr>
<td>The doors are kept open and an air curtain is not used</td>
<td>8.5 kW</td>
<td>20.5 kW</td>
</tr>
<tr>
<td>Premises with an air curtain installed</td>
<td>12.6 kW</td>
<td>4.1 kW</td>
</tr>
<tr>
<td>Premises installed with both an air curtain and an automatic door</td>
<td>9.5 kW</td>
<td>19.5 kW</td>
</tr>
</tbody>
</table>

Heating mode
Economic benefits of installing an air curtain. (Savings are calculated using an appropriate heating load factor required to keep room temperature constant at 28°C for a room measuring 66.4m² in area.)

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<td>The doors are kept open and an air curtain is not used</td>
<td>8.7 kW</td>
<td>37.8 kW</td>
</tr>
<tr>
<td>Premises with an air curtain installed</td>
<td>20 kW</td>
<td>11.3 kW</td>
</tr>
<tr>
<td>Premises installed with both an air curtain and an automatic door</td>
<td>37.8 kW</td>
<td>26.5 kW</td>
</tr>
<tr>
<td>Premises installed with both an air curtain and an automatic door</td>
<td>11.5 kW</td>
<td>35 kW</td>
</tr>
</tbody>
</table>

<Assumptions for economic benefits calculations>
1. Environmental factors
   (1) Floor space 66.4m²
   (2) Temperature and humidity

Assumptions:
This shop is housed in a two-story building. It is surrounded by other buildings on three sides: the back, the left and the right hand sides.
2. Both the air conditioner and the air curtain have the specifications and characteristics of 50Hz.

Indoor
Temperature
Humidity
Outdoor

indoor
Temperature
Humidity
Outdoor

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This shop is housed in a two-story building. It is surrounded by other buildings on three sides: the back, the left and the right hand sides.
2. Both the air conditioner and the air curtain have the specifications and characteristics of 50Hz.
# MODEL

## GK Series

<table>
<thead>
<tr>
<th>Model</th>
<th>Fan speed</th>
<th>Single-phase,50Hz 220-240V</th>
<th>Single-phase,60Hz 220V</th>
<th>Starting Current (A)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Air volume (m³/h)</td>
<td>Running current (A)</td>
<td>Input power (W)</td>
<td>Air volume (m³/h)</td>
</tr>
<tr>
<td>GK-2509YS1-CE</td>
<td>High</td>
<td>1210-1230</td>
<td>0.25-0.26</td>
<td>54-61</td>
<td>9.5</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>980-1000</td>
<td>0.24-0.25</td>
<td>52-59</td>
<td>7</td>
</tr>
<tr>
<td>GK-2512AS1-CE</td>
<td>High</td>
<td>1420-1440</td>
<td>0.35-0.37</td>
<td>76-83</td>
<td>9.5</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>1150-1170</td>
<td>0.31-0.33</td>
<td>67-78</td>
<td>7</td>
</tr>
<tr>
<td>GK-3009AS1-CE</td>
<td>High</td>
<td>1450-1470</td>
<td>0.43-0.46</td>
<td>90-105</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>1100-1200</td>
<td>0.35-0.37</td>
<td>76-87</td>
<td>8</td>
</tr>
<tr>
<td>GK-3012AS1-CE</td>
<td>High</td>
<td>1740-1760</td>
<td>0.52-0.56</td>
<td>107-125</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>1350-1400</td>
<td>0.44-0.46</td>
<td>95-109</td>
<td>8</td>
</tr>
</tbody>
</table>

*Use conditions: The temperature should be between -10 and +45°C. The RH should be less than 90% at room temperature. Any condition outside of this range could result in burnout, deformed, malrotating or damaged parts.

## Dimensions

*Figures in parentheses is the value of the GK-2512AS1-CE and GK-3012AS1-CE.

---

- Certain ratings and specifications may change due to product improvements or modifications.  
- Refer to the product manuals for safety precautions.
Features of Mitsubishi Electric Air Conducting Fan

Installation examples for large spaces

Lower initial cost  Simple Installation

More equipments and  Higher installation cost

Mitsubishi Electric’s Air Conducting Fan eliminates the need for ducts, contributing to the reduction of initial cost.

Duct

system

Less equipments and  Lower installation cost

Air Conducting Fan can be easily installed by simply mounting it to suspension bolts on the ceiling.

The angle of air vent is adjustable to six levels.

With the compact and high-efficiency motor, and also the axial fan (quiet propeller design). Air Conducting Fan saves a great deal of energy.

The compact axial fan (quiet propeller design) reduces noise level yet still make it possible to achieve large airflow. The slim and lightweight design offers greater flexibility in your installation plans.

Mitsubishi Electric Air Conducting Fans are used as supporting equipment for ventilators and air-conditioners in moving exhaust gas in car parks and improving the efficiency of ventilation or air-conditioning in factories and warehouses.

Air Conducting Fans are particularly useful for moving and expelling stagnant, dirty exhaust gas and hot air that stagnates in the midsections of buildings with complicated floor plans.

Since Air Conducting Fans help circulate air conditioned air, they improve the working environments by reducing temperature variations throughout large indoor spaces. They enhance effectiveness of cooling over a wider area, and the airflow they generate creates a refreshing breeze.

Using Air Conducting Fans help the air-conditioned air to reach all corners, improving comfort levels throughout the area.

The airflow created by Air Conducting Fans allows fresh air to permeate all corners of a car park while at the same time reliably directing the vehicle exhaust gas toward the exhaust fans.

Low Power Consumption  Quiet and Compact

Car Parks : Removing exhaust gas  Warehouses and factories : Circulating Cool air

Air conducting fans not in use  Air conducting fans in use

CO2 distribution

Temperature distribution

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.
Features of Mitsubishi Electric Air Conducting Fan

Lower initial cost
Mitsubishi Electric's Air Conducting Fan eliminates the need for ducts, contributing to the reduction of initial cost.

Simple Installation
Air Conducting Fan can be easily installed by simply mounting it to suspension bolts on the ceiling. The angle of air vent is adjustable to six levels.

More equipments and Higher installation cost

Less equipments and Lower installation cost

Ductless system

Installation examples for large spaces

Mitsubishi Electric Air Conducting Fans are used as supporting equipment for ventilators and air-conditioners in moving exhaust gas in car parks and improving the efficiency of ventilation or air-conditioning in factories and warehouses.

Car Parks: Removing exhaust gas

Air Conducting Fans are particularly useful for moving and expelling stagnant, dirty exhaust gas and hot air that stagnates in the midsections of buildings with complicated floor plans.

CO₂ distribution

Air conducting fans not in use
Air conducting fans in use

Temperature distribution

Air conducting fans not in use
Air conducting fans in use

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Quiet and Compact
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Car Parks: Removing exhaust gas

The airflow created by Air Conducting Fans allows fresh air to reach all corners, improving comfort levels throughout the area.
<table>
<thead>
<tr>
<th>Model</th>
<th>Fan speed</th>
<th>Air volume (m³/h)</th>
<th>Running Current (A)</th>
<th>Input power (W)</th>
<th>Air velocity Max. (m/sec)</th>
<th>Noise (dB)</th>
<th>Starting Current (A)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AH-1006S-E</td>
<td>High</td>
<td>700-750</td>
<td>0.14-0.15</td>
<td>30-34</td>
<td>6.5-6.9</td>
<td>42-44</td>
<td>0.23</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>570-620</td>
<td>0.13-0.13</td>
<td>28-32</td>
<td>5.3-5.7</td>
<td>39-40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AH-1509S-E</td>
<td>High</td>
<td>1180-1270</td>
<td>0.26-0.26</td>
<td>55-62</td>
<td>7.3-7.8</td>
<td>43.5-45</td>
<td>0.43</td>
<td>10.5</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>940-1040</td>
<td>0.24-0.25</td>
<td>51.5-59</td>
<td>5.8-6.4</td>
<td>39-41.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AH-2009S-E</td>
<td>High</td>
<td>1350-1400</td>
<td>0.43-0.47</td>
<td>90-105</td>
<td>8.3-8.6</td>
<td>46.5-47.5</td>
<td>0.85</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>1130-1200</td>
<td>0.36-0.37</td>
<td>77-87</td>
<td>7.0-7.4</td>
<td>44-46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AH-3009S-E</td>
<td>High</td>
<td>2100</td>
<td>0.87-0.94</td>
<td>191-223</td>
<td>8.2</td>
<td>58-58</td>
<td>2.53</td>
<td>20.5</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>1860</td>
<td>0.74-0.75</td>
<td>150-165</td>
<td>7.3</td>
<td>55.5-56</td>
<td>1.55</td>
<td></td>
</tr>
</tbody>
</table>

*Certain ratings and specifications may change due to product improvements or modifications. Refer to the product manuals for safety precautions.

**Dimensions of the AH-1006/1509/2009S-E**

*The mounting angle of the unit body can be adjusted in 8 steps. (0, 11.3, 22.5, 33.8, 45, 56.3, 67.5, 90°)*

**Dimensions of the AH-3009S-E**

*The mounting angle of the unit body can be adjusted in 8 steps. (0, 11.3, 22.5, 33.8, 45, 56.3, 67.5, 90°)*

**Results of Noise Analysis**

- **AH-1006S-E**
- **AH-1509S-E**
- **AH-2009S-E**
- **AH-3009S-E**

---

- **Air conducting fan**
- **Figure 10:** External attachment pitch 680 (690)
- **Figure 11:** Internal attachment pitch 525 (825)
- **Figure 12:** Effective range for one air conducting fan.
- **Figure 13:** Installation guideline
- **Figure 14:** Wind velocity distribution

---

![Diagram of air conducting fan](image-url)
Installation guideline

Effective range for one air conducting fan.

- There are cases where the reach distance is extended by angled venting, which causes the Wind to flow along the floor's surface.
- The Wind velocity distribution may be disturbed by enclosing walls, beams, pillars and other obstructions.
- Depending on conditions of the building, there may be difference in the spacing of units during installation.
Jet Towel

Since developing the world's first high-speed hand dryer in 1993, Mitsubishi Electric has continued to improve technologies and services focusing on ease of use for our customers.

Many paper towels are made from recycled paper, so it does not necessarily lead to environmental destruction.

Example: Company A (10-story building)

<table>
<thead>
<tr>
<th>Paper towel used</th>
<th>Paper towel used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx. 320,000</td>
<td></td>
</tr>
</tbody>
</table>

No. of paper towels made from one tree (8m high, 14cm dia.) (2-month supply for 1 dispenser: 2 towels each time, 200 times/day)

1 tree

Approx. 20,000 paper towels

Approx. 13,000 sheets/day

Survey conducted by Mitsubishi Electric

The high-speed Jet Towel™ hand dryer uses jet streams of air to dry hands, eliminating the paper waste associated with the use of paper towels, and thus relieving you of the trouble of waste disposal as well. The preservation of forest resources will also contribute to enhancing your corporate image.

For Corporate Management

Substantial Cost Reduction

The monthly expense is reduced to a fraction of the cost in comparison to paper towels or rolled-cloth towels. The higher the use, the greater the savings.

= 64 bags of waste/day!

(Assuming 200 paper towels/bag)

For Building Management

Easy Maintenance

The only maintenance required is clean the air filter and removing water from the drain tank*. Save time by eliminating the daily replenishment of paper towels, disposal of paper waste and replacing cloth-roll towels.

For Customers

Improved Service

Evaluated highly for its sanitary characteristics, the Jet Towel is popular among facilities and shops alike. In addition to its ability to dry hands completely in a matter of seconds and offer a clean sanitary environment for customers, maintenance and running costs are minimized for maximum cost efficiency. The result is enhanced customer service.

For the Environment

No Waste Paper

Uses per day

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper towels</td>
<td>Cloth-roll towels</td>
</tr>
<tr>
<td>JT-SB216JSH</td>
<td>JT-SB216KSN</td>
</tr>
<tr>
<td>JT-SB216JSH2</td>
<td>JT-SB216KSN2</td>
</tr>
</tbody>
</table>

*Used 25 days per month

Jet Towel: Heater on for 10sec., off for 12sec. per use; constantly on (1 day = 24hr; 1mo = 30d); Electricity cost of (¥) 27 yen/kWh

Paper towels: Paper cost of (¥) 1 yen per sheet; 2 sheets per use

Cloth-roll towels: Rental fee of (¥) 600 yen per roll: 200 uses per roll

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Heaters on</td>
<td>Heaters off</td>
</tr>
<tr>
<td>Electricity cost per month</td>
<td></td>
</tr>
<tr>
<td>400 uses</td>
<td>300 uses</td>
</tr>
<tr>
<td>200 uses</td>
<td>100 uses</td>
</tr>
<tr>
<td>10,000</td>
<td>15,000</td>
</tr>
<tr>
<td>15,000</td>
<td>22,500</td>
</tr>
<tr>
<td>20,000</td>
<td>30,000</td>
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<Calculation conditions>

Feature of the Mitsubishi Electric Jet Towel


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### Feature of the Mitsubishi Electric Jet Towel

#### For the Environment
**No Waste Paper**

The high-speed Jet Towel™ hand dryer uses jet streams of air to dry hands, eliminating the paper waste associated with the use of paper towels, and thus relieving you of the trouble of waste disposal as well. The preservation of forest resources will also contribute to enhancing your corporate image.

<table>
<thead>
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<td>1 tree (8m high, 14cm dia.) = Approx. 20,000 paper towels</td>
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</tbody>
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(2-month supply for 1 dispenser: 2 sheets each time, 200 times/day)

Example: Company A (10-story building)

- **Paper towel used**
  - Approx. 320,000 sheets/month

- **Cloth-roll towels**
  - JT-16A
  - JT-16B
  - JT-16C
  - JT-16C3
  - JT-SB116D
  - JT-SB216ESH
  - JT-SB216ESN
  - JT-SB216KSN
  - JT-SB216KSN2
  - JT-SB216KSN2
  - JT-216CS4/CS4K
  - JT-SB116C3
  - JT-SB216KSN2
  - JT-SB216KSN2

*Many paper towels are made from recycled paper, so it does not necessarily lead to environmental destruction.*

#### For Corporate Management
**Substantial Cost Reduction**

The monthly expense is reduced to a fraction of the cost in comparison to paper towels or rolled-cloth towels. The higher the use, the greater the savings.

<table>
<thead>
<tr>
<th>Uses per day</th>
<th>100 uses</th>
<th>200 uses</th>
<th>300 uses</th>
<th>400 uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper towels</td>
<td>5,000</td>
<td>10,000</td>
<td>15,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Cloth-roll towels</td>
<td>7,500</td>
<td>15,000</td>
<td>22,500</td>
<td>30,000</td>
</tr>
<tr>
<td>JT-SB216ESH2</td>
<td>Heater on</td>
<td>252</td>
<td>484</td>
<td>716</td>
</tr>
<tr>
<td>JT-SB216KSN2</td>
<td>Heater off</td>
<td>181</td>
<td>343</td>
<td>505</td>
</tr>
</tbody>
</table>

*Calculation conditions:
- Used 25 days per month
- JT Towel: Heater on for 10sec., off for 12sec.; per use, constantly on (1 day = 24hr; 1mo = 30d); Electricity cost of (¥) 27 yen/kWh
- Paper towels: Paper cost of (¥) 1 yen per sheet; 2 sheets per use
- Cloth-roll towels: Rental fee of (¥) 600 yen per roll: 200 uses per roll

#### For Building Management
**Easy Maintenance**

The only maintenance required is clean the air filter and removing water from the drain tank*. Save time by eliminating the daily replenishment of paper towels, disposal of paper waste and replacing cloth-roll towels.

*Tank must also be cleaned.

#### For Customers
**Improved Service**

Evaluated highly for its sanitary characteristics, the Jet Towel is popular among facilities and shops alike. In addition to its ability to dry hands completely in a matter of seconds and offer a clean sanitary environment for customers, maintenance and running costs are minimized for maximum cost efficiency. The result is enhanced customer service.
Jet Towel Slim
- Amazingly quiet at 56dB*1 2 dB less than previous model
- Stronger front and back panels for greater impact resistance
- Switches moved internally to prevent unauthorized tampering

(JT-SB216KSN2 model available only in white)

Jet Towel Smart
- High speed drying with low energy use and quiet operation
- Robust, tamper-resistant body
(JT-S2AP equipped with metal panel)
- 0.1 second quick response improves user drying experience

(JT-S2A model available only in white)

Custom color options available!
The Jet Towel Smart / Smart Lite can be specially color-customized for large orders. Your logo can also be added to the unit for a unique look. A great way to promote your business and catch attention.

*Contact your local Mitsubishi Electric sales office for details.

Jet Towel Mini
- Low energy use and quiet operation
- Compact yet spacious and easy to use
- Easy to clean and hygienic

● Certain ratings and specifications may change due to product improvements or modifications. ● Refer to the product manuals for safety precautions.
Eco Changes is the Mitsubishi Electric Group’s environmental statement, and expresses the Group’s stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.