

MODEL	VL-250CZPVU-R-E
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Heat exchange system	Heat recovery ventilating system		
Heat exchanger material	Sensible heat exchanger		
Cladding	Steel sheet		
Heat insulation material	Polyethylene foam		
Motor	DC motor		
Blower	180mm diameter centrifugal fan		
Filter	Non-woven fabrics filter		
Duct connecting	Synthetic resin		
Duct connecting cover	Styrene foam		
Outside air condition	Shall be higher than -15°C		
Return(Suction) air condition	Shall be lower than 40°C, 95%RH		
Surrounding air condition	Indoor temperature and humidity should not exceed the dew point temperature 12°C (e.g. RH60% / 20°C)		
Supply fan operation under low outdoor temperature	-3°C to -15°C : Intermittent operation -15°C or less : Continuous supply air stopped.	※Continuous exhaust air	
Function	Heat recovery ventilation/ Bypass ventilation, Fan speed 1,2,3,4 The air flow increment by 1% from 25% to 100%		
Dimensions (Height x Width x Depth)	565mm x 595mm x 356mm		
Weight	26kg		
Electrical power supply	220-240V~ 50Hz / 220V~ 60Hz		
Insulation resistance	10MΩ or more		
Dielectric strength	AC 1000V 1 minute		
Maximum current [A]	1.0		

■ Specification

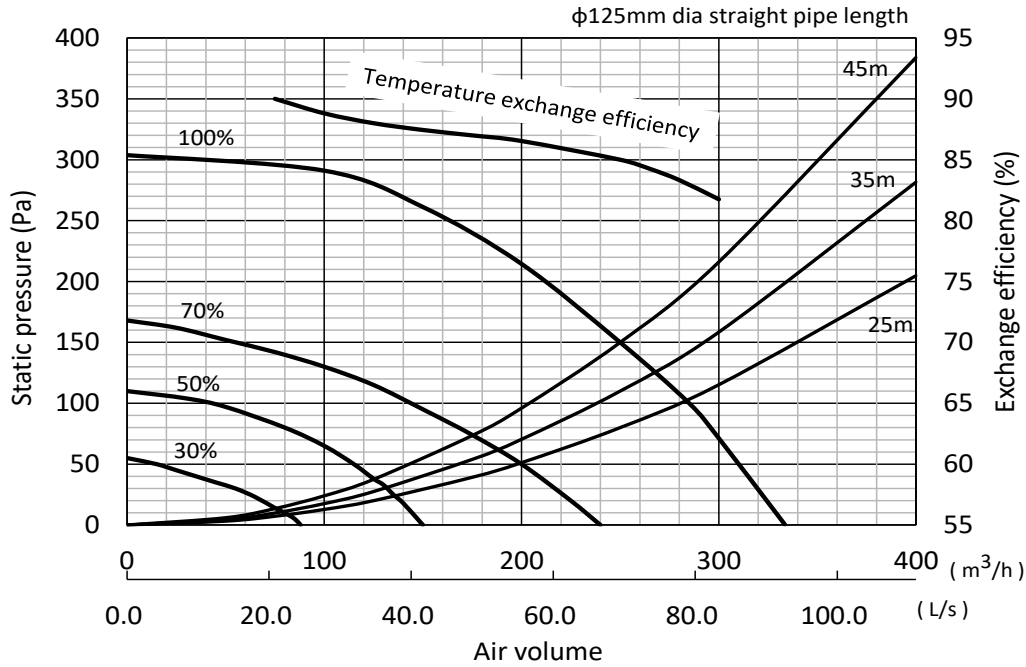
Ventilation mode		Heat recovery mode			
Fan speed		Fan Speed 4 (100%)	Fan Speed 3 (70%)	Fan Speed 2 (50%)	Fan Speed 1 (30%)
Running current [A]		0.76	0.35	0.20	0.12
Input power [W]		106	44	23	11
Air volume	[m <sup>3</sup> /h]	250	175	125	75
	[L/s]	69	49	35	21
External static pressure [Pa]		150	74	38	14
Temperature exchange efficiency [%]		85	87	88	90
Sound pressure level @3m [dB]		31	22	16	15 >
ErP Class		A+			

■ Attention

1. The above values are at factory default.
2. The running current, the input power, the efficiency and the noise are based on the rating air volume, and 230V/50Hz.
3. The sound pressure level at 3m is spherical.
4. Temperature exchange efficiency (%) is based on winter condition.
5. Mitsubishi Electric measures figures in the chart according to EN13141-7:2010, and the characteristic curves are measured by chamber method.

SPECIFICATIONS	※Specification may be subject to change without notice.			
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■ Characteristic curve



■ Attention

- Mitsubishi Electric measures figures in the chart according to EN13141-7:2010, and the characteristic curves are measured by chamber method.

■ Sound data

Fan speed	Point	Sound power (Lw), octave band centre frequency Hz (dB)								Total LwA dB(A)
		63	125	250	500	1000	2000	4000	8000	
100%	Inlet	67	68	55	53	50	39	33	22	55
	Outlet	79	73	69	64	61	55	48	40	67
	Breakout	46	56	53	50	47	38	32	26	52
70%	Inlet	60	64	48	46	43	31	24	12	49
	Outlet	74	68	61	56	53	44	37	28	59
	Breakout	40	47	44	41	38	26	19	13	43
50%	Inlet	55	58	41	40	36	22	15	6	43
	Outlet	70	61	52	50	46	35	26	16	52
	Breakout	37	42	38	36	31	18	10	7	37
30%	Inlet	48	48	31	31	24	8	4	5	33
	Outlet	62	51	43	39	32	19	9	6	42
	Breakout	33	32	32	27	19	7	5	6	27

■ Attention

- Measurements of sound power were undertaken in accordance with the direct method as described in BS EN ISO 3741:2010, BS EN ISO 13141-6:2014 and BS EN ISO 5135:1999.
- Reverberation time measurements were undertaken for case radiated noise and duct noise, including measurements of representative background noise. The data was processed to calculate casing radiated and in-duct sound power levels in third octave bands.
- In-duct sound power levels were calculated in accordance with BS EN ISO 5135:1999.

■ SAP Appendix Q Table

Application	Air flow rate (l/s)	SFP (W/l/s)	Thermal efficiency (%)
Kitchen + 1 wet room	21	0.62	90
Kitchen + 2 wet rooms	29	0.67	89
Kitchen + 3 wet rooms	37	0.79	88
Kitchen + 4 wet rooms	45	1.00	87
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SPECIFICATIONS



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VL-250CZPVU-R-E

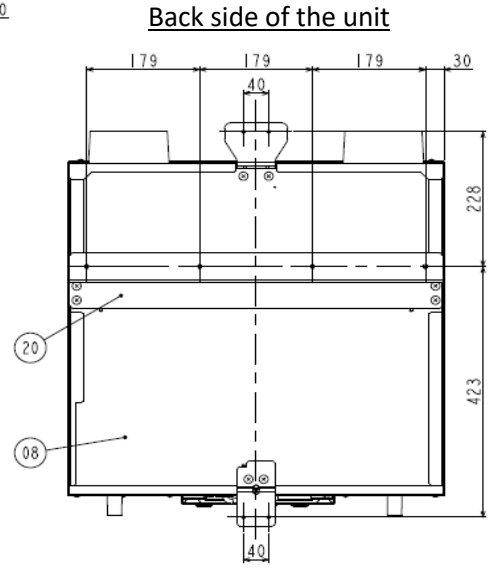
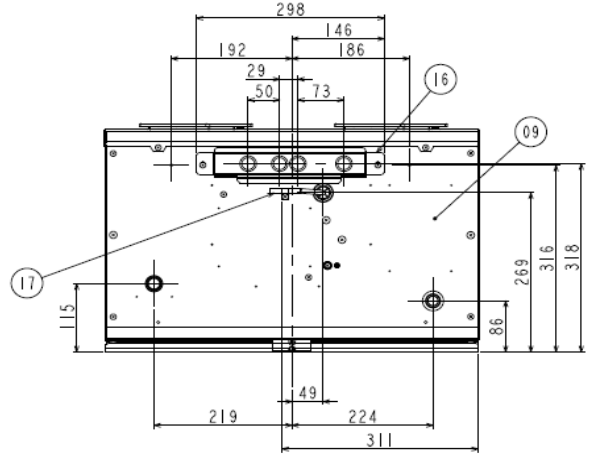
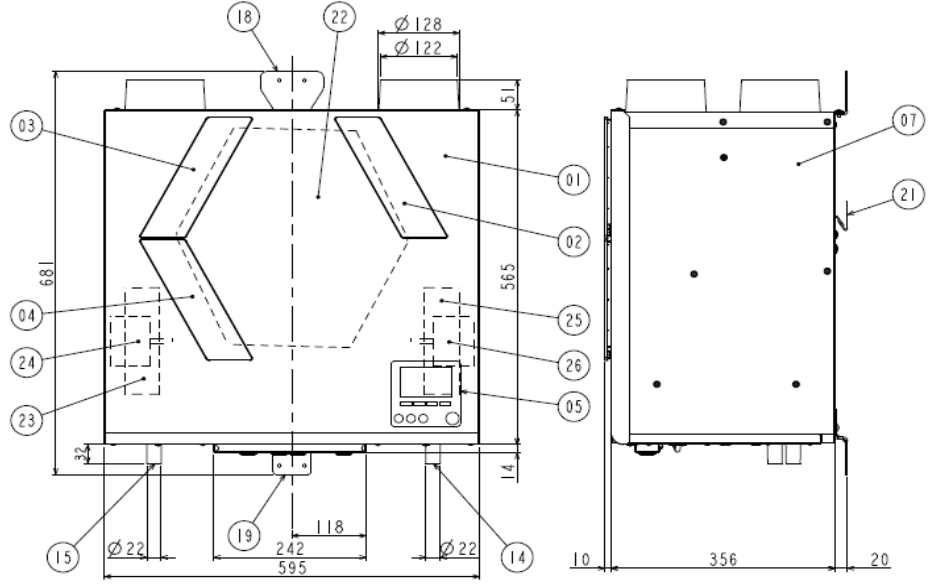
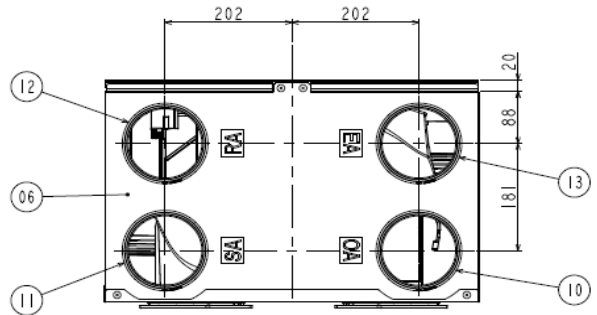
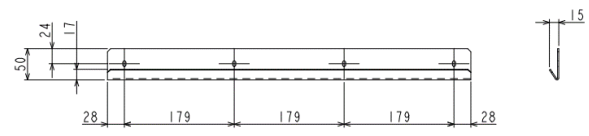
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■ Outline drawings

	UNIT	SCALE
	mm	N.T.S

Wall bracket



Back side of the unit

Parts List

No.	PARTS NAME	MATERIAL	REMARKS	No.	PARTS NAME	MATERIAL	REMARKS
01	Front Casing	Painted metal	Munsell 6.2PB 8.8/1.6	14	Drain pipe (EA)	Synthetic Resin	
02	Filter Cover (OA)	Synthetic Resin		15	Drain pipe (SA)	Synthetic Resin	
03	Filter Cover (RA)	Synthetic Resin		16	PCB Under Cover	Steel sheet	Munsell 6.2PB 8.8/1.6
04	Filter Cover (SA)	Synthetic Resin		17	Power Supply Cord	—	
05	Controller	—		18	Wall Mount Hook Top	Galvanized Steel	
06	Top Casing	Painted metal	Munsell 6.2PB 8.8/1.6	19	Wall Mount Hook Down	Galvanized Steel	
07	Side Casing	Painted metal	Munsell 6.2PB 8.8/1.6	20	Wall Mount Hook Center	Galvanized Steel	
08	Back Casing	Galvanized Steel Sheet		21	Wall Bracket	Galvanized Steel	
09	Bottom Casing	Painted metal	Munsell 6.2PB 8.8/1.6	22	Heat Exchanger	Synthetic Resin	
10	Pipe Guide (OA)	Synthetic Resin		23	Air Supply Fan	Synthetic Resin	
11	Pipe Guide (SA)	Synthetic Resin		24	Air Supply Fan Motor	DC	
12	Pipe Guide (RA)	Synthetic Resin		25	Air Exhaust Fan	Synthetic Resin	
13	Pipe Guide (EA)	Synthetic Resin		26	Air Exhaust Fan Motor	DC	

※OA : Outdoor Air, SA : Supply Air, RA : Return Air, EA : Exhaust Air

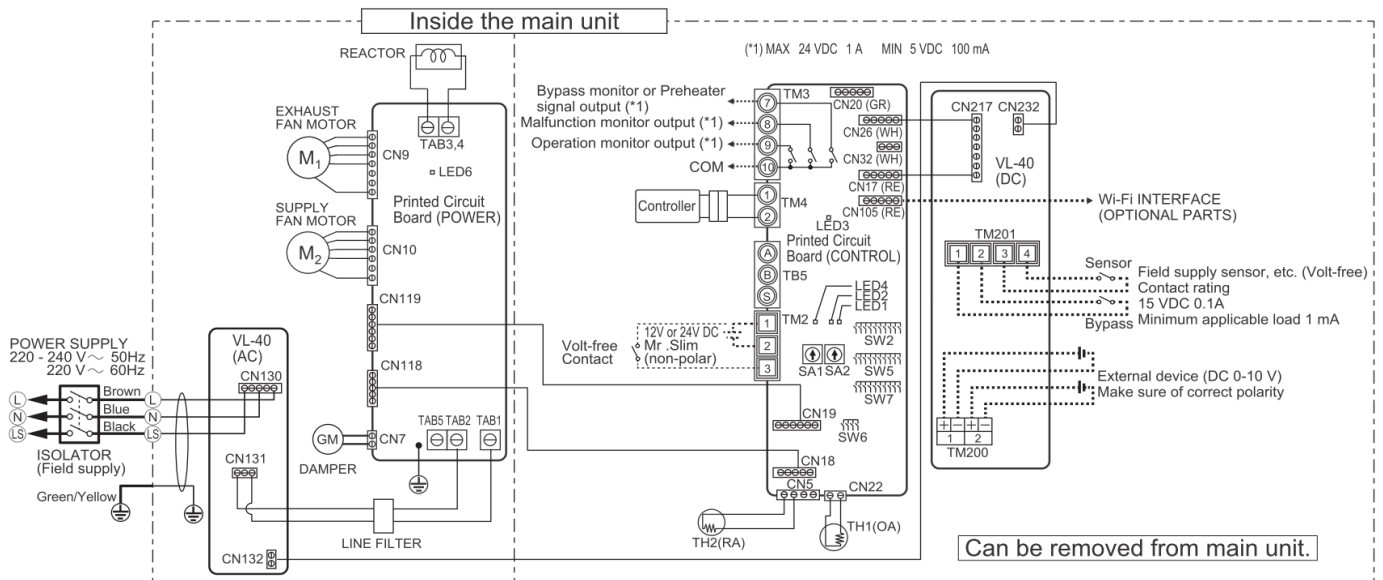
OUTLINE DRAWINGS

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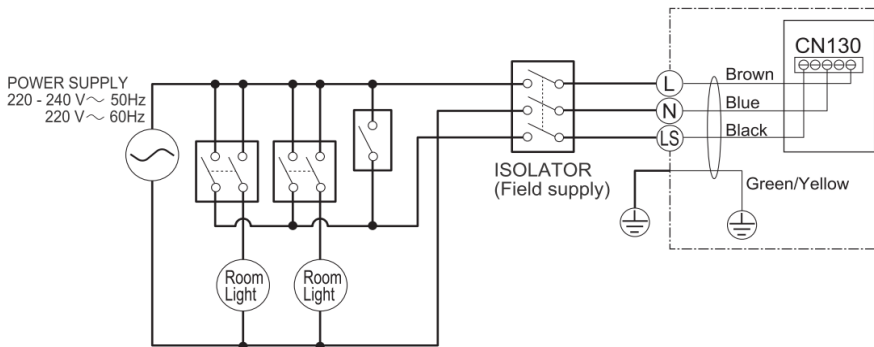
## ■ Wiring diagrams



### Wiring Diagram

#### ■ NOTE

1. Connect the bold lines.
2. Make sure to connect the ground wire.



Definition of symbols		
M1	Motor for exhaust fan	CN18, CN19, CN118, CN119
M2	Motor for supply fan	CN130, CN131, CN132, CN232
GM	Motor for By-pass damper	CN217, CN26, CN32
TH1	Thermistor for outside air	CN22
TH2	Thermistor for return air	CN5
TM2	Terminal block (External control input)	CN7
TM4	Terminal block (Remote controller)	
TM3	Terminal block (Monitor output)	
TM200	Terminal block (DC 0-10V)	LED1 to LED4
TM201	Terminal block (Volt-free)	LED6
TAB1, TAB2	Connector (Power supply)	SA1
TAB3,4	Connector (Reactor)	SA2
TAB5	not in use	SW2, SW5 to SW7
CN9, CN10	Connector (Fan motor)	
CN17 to CN20	Connector	
CN105	Connector (IT)	
		Connector
		Connector (Thermistor OA)
		Connector (Thermistor RA)
		Connector (Motor for By-pass damper)
		Inspection indicator lamp
		Power supply indicator lamp
		Address setting rotary switch (10 digit)
		Address setting rotary switch (1 digit)
		Switch
		Terminal block
		Connector on PCB

## ■ Attention

1. Electrical work must be carried out safely and reliably by a professional electrical contractor (properly qualified electrician) in accordance with internal wiring provisions and electrical-equipment technical standards.
2. Use 220 to 240V AC Power.
3. Use the designated electric wires, and connect them securely so that they do not come loose.
4. Be sure to install the ground wire.
5. Install an all-pole power supply isolator at the power supply side as per local electrical regulations. All supply circuits must be disconnected before obtaining access to the terminal devices. Use the specified cable size and connect the cables securely to prevent disconnection when they are pulled.

### WIRING DIAGRAMS

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**■ Features of Lossnay**

1. A Lossnay unit provides 24-hour ventilation for the entire house. The heat recovery system provides fresh air at a comfortable air temperature.
2. With simple wall-mount design, the units can be easily installed in compact places in houses such as the roof space, hallway cupboard, kitchen, etc.
3. Airflow can be adjusted within the range between 25% and 100% by 1% to meet the designed airflow rate.
4. Lossnay can be monitored and controlled via MELCloud from anywhere an internet connection is available.  
\*MELCloud is a Cloud-based solution for controlling Lossnay either locally or remotely by computer, tablet or smartphone via internet.
5. The quiet operation is achieved with the fan designed for only this model.
6. Optional high efficiency filters can be installed inside the unit without any filter box, which saves space.
7. By using 0-10V signal from the controller(local supply) such as the humidistats and CO2 sensors, the airflow of the Lossnay unit can be changed. It is also connected to the light switch(local supply) and can change to the boost operation(Input 220-240V). It allows the fan speed to automatically change according to the bathroom occupation, the CO2 level, and the humidity level.
8. It is possible to select manual switching or automatic switching between "Lossnay ventilation (with heat exchange)" and "By-pass ventilation (without heat exchange)".
9. Operating temperature range is down to -15°C. With a pre-heater, it is available down to -25°C.


**■ Caution for installation**

**【Ventilation design】**

1. For the outside air intake vent, choose a position where combustion gas or other similar exhaust air is not sucked in and the vent is not buried by snow.
2. Do not install the product at locations where the product is prone to be damaged from salt or hot springs. Failure to heed this warning may result in malfunction of product.
3. Do not install the product at locations where toxic gas or gas containing corrosive components such as acids, alkaline, organic solvents, or paints is generated.
4. Do not install the product near bedrooms.
5. For living rooms (e.g. bedrooms) where it is anticipated that building ambient noise will be below 30 dB(A), use commercially available ducts that have sound deadening qualities on the supply air side.
6. Install supply air and exhaust air grills at locations where they are less likely to reverberate.
7. In cold regions or regions with strong winds, wind outside sometimes gets inside when operation of the product is stopped. So, we recommend providing a motorized shutter midway along the supply air and exhaust air ducts.
8. Install the product so that discharged gas or exhaust air from burning appliances and equipment does not flow back inside the product.
9. Use an outdoor hood, that makes it less likely for rain water, snow or small animals (e.g. bats) from entering the ends of the supply air and exhaust air ducts.
10. At the outdoor hood installation position, allow at least 3x the diameter of the duct through holes between the outdoor hood and the ducts so that exhaust air is not mixed in with supply air. (Preferably a distance of 450 mm or more should be ensured between the outdoor hood and the ducts.)
11. In areas where the outdoor air is below -20°C, electric shutters(local supply) is required in the OA duct in addition to the pre-heater. With the pre-heater, the OA temperature must be higher than -15°C.
12. Do not use duct booster fan on the RA/EA duct or the OA/SA duct. If an external force is applied to the built-in bypass damper, the damper may be fixed on the bypass side, when it is switching between Lossnay mode and Bypass mode, and heat recovery may be prevented.

**【Installing the Lossnay unit】**

1. The unit is exclusively vertical mounting type.
2. Do not install the product in hot places in the direct sunlight and in smoky places.
3. Do not install the Lossnay unit or the remote controller in a bathroom or other humid location.
4. Install the product and the duct piping on the indoor side of the insulation layer/airtight layer.
5. Install the product (on the wall) in the direction of the duct connecting flange so that it is horizontal (within  $\pm 1^\circ$  ).

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**【Duct piping】**

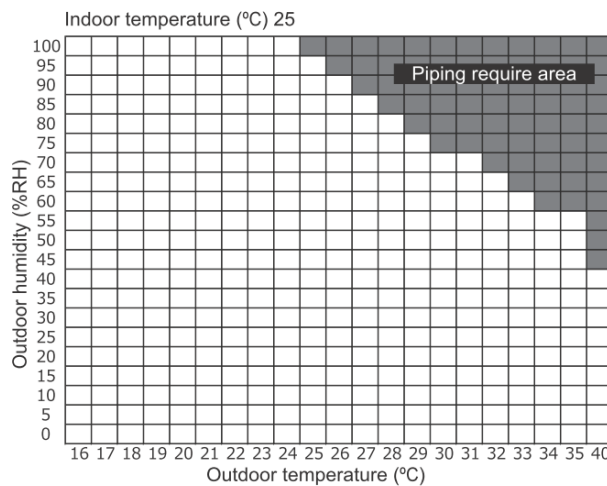
1. When metal ducts penetrate through metal-sheeted wooden buildings or structures, install the product so that there is no electrical contact between the metal ducts and the metal sheeting.
2. Secure duct piping with commercially available fixing bands, aluminum tape, etc. to prevent piping from coming loose. Install outdoor piping from the product so that it is tilted at a downward pitch of at least 1/30 towards the outside.
3. Be sure to insulate ducts down to the base of the duct connecting flanges.
4. Do not allow duct piping to contact the inspection opening, ceiling hanging bolts, beams, pillars, and other duct piping.
5. When discharging the air from a bathroom, use ducts made of a material that does not allow water to leak.
6. When using PCV ducts or metal ducts for the SA side ducts, be sure to connect ducts having silencer before the grill.
7. Calk the duct connecting flanges that discharge air from the bathroom with calking compound. When using calking compound, take care to prevent it from oozing from the ducts.

**【Duct heater】**

1. When using duct heaters (supply air preheaters, supply air after-heaters), make sure to use safety devices that do not have self-return functions. Do not supply the duct heaters with electricity directly from the product.
2. When using duct heaters (supply air preheaters, supply air after-heaters) that do not have temperature control functions, select duct heaters that have the appropriate capacity according to the airflow passing through the heaters.

**【Drain piping】**

1. Be sure to connect drain piping by the following procedure to prevent freezing and dew condensation forming on the surface of the piping.
  - Connect the drain piping on the indoor side of the insulation layer.
  - Insulate the drain piping up to the end of the piping
  - Do not let the end of draing piping be immersed in the rain gutter, etc.  
(At times of heavy snow, the rain gutter freezes and drain water is not discharged, which results in water leaking from the Lossnay unit)
2. Connect the drain pipe so that it has at least three degree of downward gradient from the lower part of the unit.
3. Be sure to attach commercially available check valves.
4. This unit has two drain pipes for EA and SA.
  - Drain pipe (EA) : Piping required.
  - Drain pipe (SA) : Depend on temperature and humidity, see the following conditions.



**■ Care and attention on the use of Lossnay unit**

1. To ensure correct and safe use, read the instruction manual thoroughly.
2. To keep the Lossnay functions in good condition for a long time, clean dirt or dust from the filters periodically.
3. To prevent dew condensation forming on the Lossnay core and water droplets from adhering to the product when there is a drop in the temperature of the outside air, operation of the supply air fan is changed automatically.  
(The exhaust fan runs continuously regardless of outdoor air temperature.)  
(Even while the supply air fan has stopped, the Lossnay unit sometimes operates periodically to measure the outdoor air temperature)

**SAFETY NOTES**

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MODEL	VL-250CZPVU-L-E
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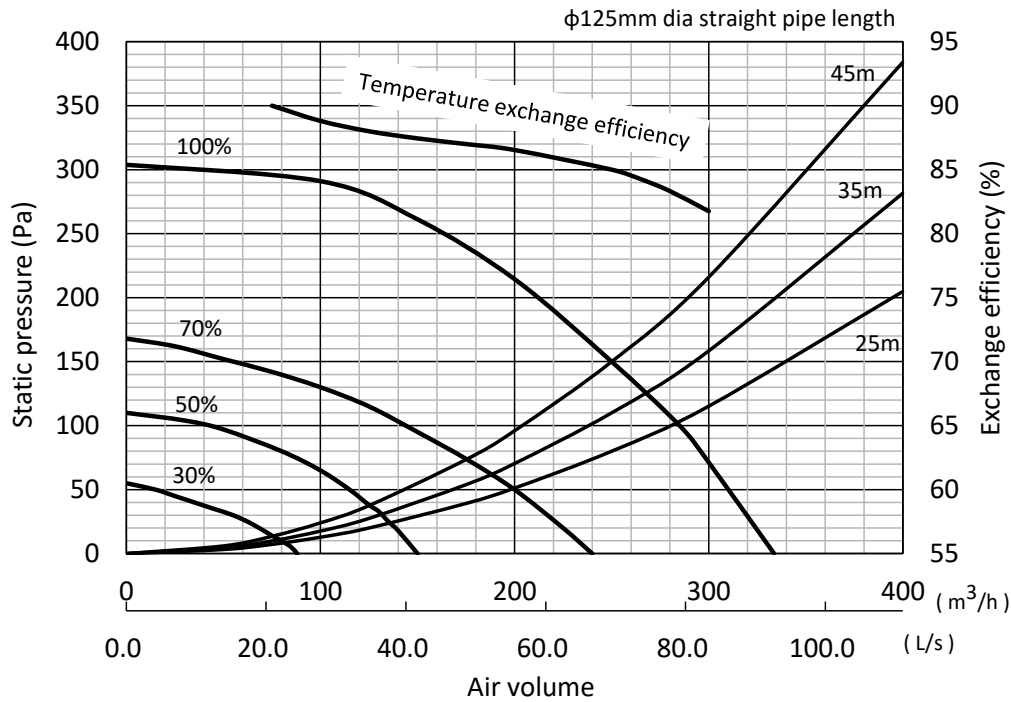
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■ Characteristic curve



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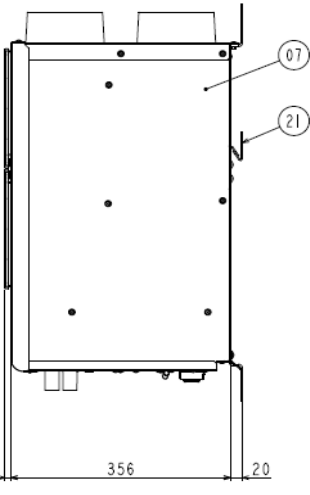
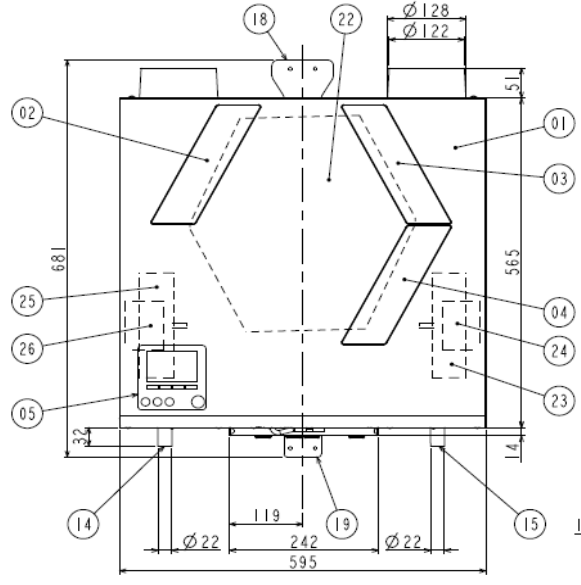
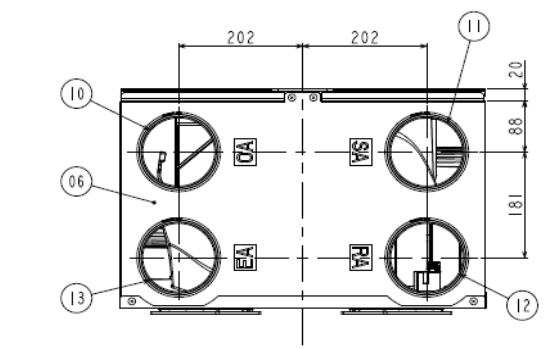
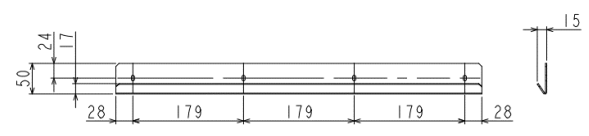
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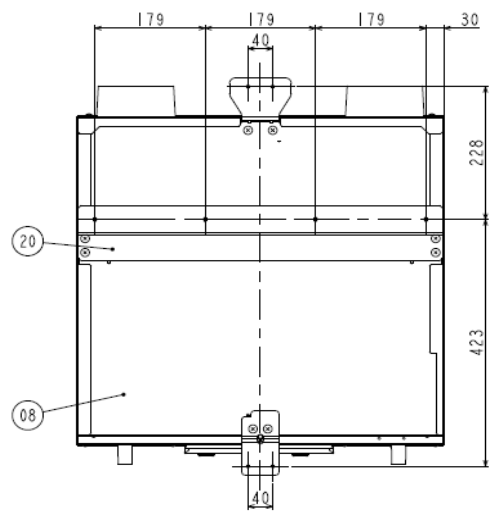
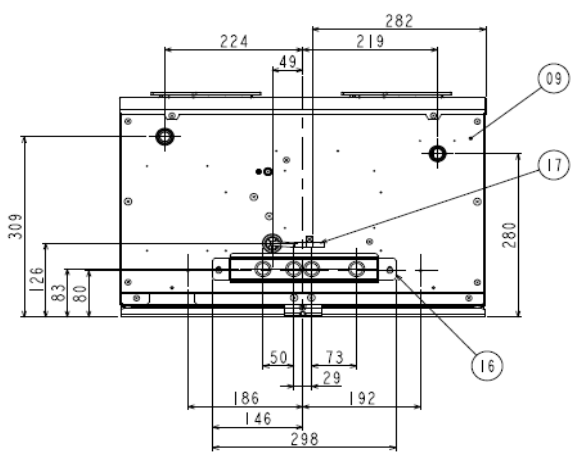
■ Outline drawings

	UNIT	SCALE
	mm	N.T.S

Wall bracket



Back side of the unit



Parts List

No.	PARTS NAME	MATERIAL	REMARKS	No.	PARTS NAME	MATERIAL	REMARKS
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05	Controller	—		18	Wall Mount Hook Top	Galvanized Steel	
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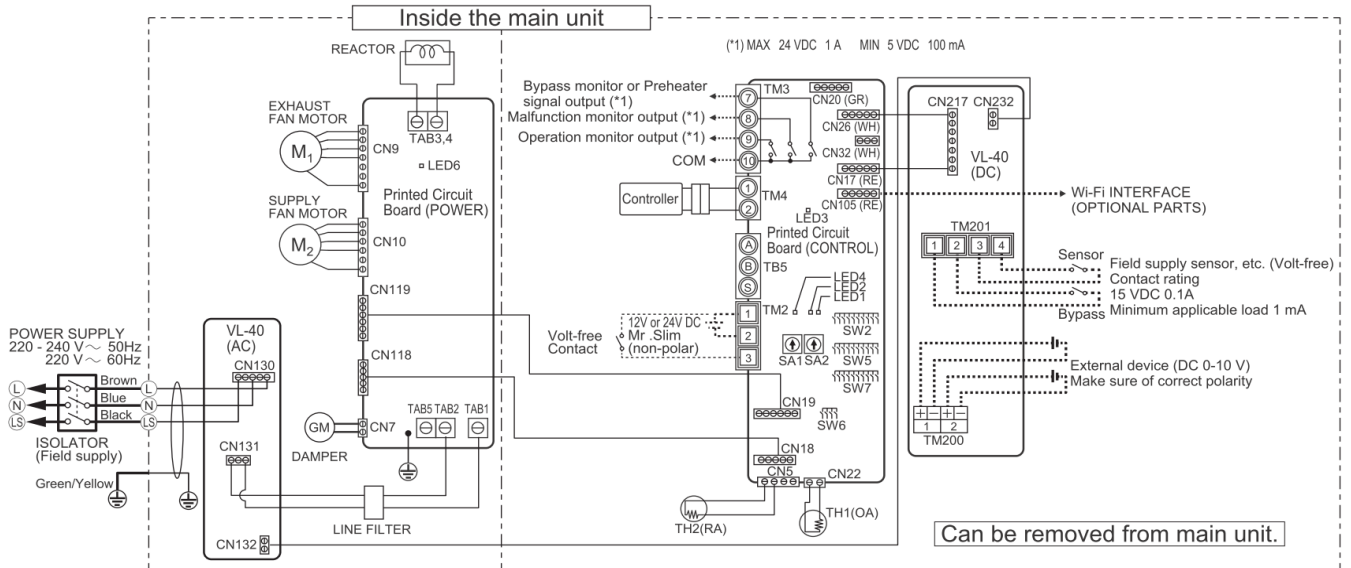
※OA : Outdoor Air, SA : Supply Air, RA : Return Air, EA : Exhaust Air

OUTLINE DRAWINGS



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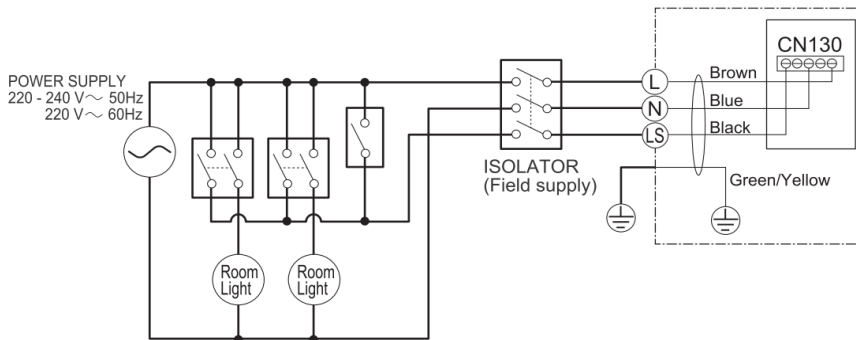
## ■ Wiring diagrams





### Wiring Diagram

#### ■ NOTE

1. Connect the bold lines.
2. Make sure to connect the ground wire.



Definition of symbols			
M1	Motor for exhaust fan	CN18, CN19, CN118, CN119	Connector
M2	Motor for supply fan	CN130, CN131, CN132, CN232	Connector
GM	Motor for By-pass damper	CN217, CN26, CN32	Connector
TH1	Thermistor for outside air	CN22	Connector (Thermistor OA)
TH2	Thermistor for return air	CN5	Connector (Thermistor RA)
TM2	Terminal block (External control input)	CN7	Connector (Motor for By-pass damper)
TM4	Terminal block (Remote controller)		
TM3	Terminal block (Monitor output)	LED1 to LED4	Inspection indicator lamp
TM200	Terminal block (DC 0-10V)	LED6	Power supply indicator lamp
TM201	Terminal block (Volt-free)	SA1	Address setting rotary switch (10 digit)
TAB1, TAB2	Connector (Power supply)	SA2	Address setting rotary switch (1 digit)
TAB3,4	Connector (Reactor)	SW2, SW5 to SW7	Switch
TAB5	not in use		
CN9, CN10	Connector (Fan motor)		
CN17 to CN20	Connector		
CN105	Connector (IT)		
		SYMBOL  	Terminal block Connector on PCB

## ■ Attention

1. Electrical work must be carried out safely and reliably by a professional electrical contractor (properly qualified electrician) in accordance with internal wiring provisions and electrical-equipment technical standards.
2. Use 220 to 240V AC Power.
3. Use the designated electric wires, and connect them securely so that they do not come loose.
4. Be sure to install the ground wire.
5. Install an all-pole power supply isolator at the power supply side as per local electrical regulations. All supply circuits must be disconnected before obtaining access to the terminal devices. Use the specified cable size and connect the cables securely to prevent disconnection when they are pulled.

### WIRING DIAGRAMS

※Specification may be subject to change without notice.



DATE

12-Jan-21

TYPE  
MODEL

NUMBER

Heat Recovery Ventilator LOSSNAY  
VL-250CZPVU-L-E

N19SGGD0002B

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■ Features of Lossnay

1. A Lossnay unit provides 24-hour ventilation for the entire house. The heat recovery system provides fresh air at a comfortable air temperature.
2. With simple wall-mount design, the units can be easily installed in compact places in houses such as the roof space, hallway cupboard, kitchen, etc.
3. Airflow can be adjusted within the range between 25% and 100% by 1% to meet the designed airflow rate.
4. Lossnay can be monitored and controlled via MELCloud from anywhere an internet connection is available.  
\*MELCloud is a Cloud-based solution for controlling Lossnay either locally or remotely by computer, tablet or smartphone via internet.
5. The quiet operation is achieved with the fan designed for only this model.
6. Optional high efficiency filters can be installed inside the unit without any filter box, which saves space.
7. By using 0-10V signal from the controller(local supply) such as the humidistats and CO2 sensors, the airflow of the Lossnay unit can be changed. It is also connected to the light switch(local supply) and can change to the boost operation(Input 220-240V). It allows the fan speed to automatically change according to the bathroom occupation, the CO2 level, and the humidity level.
8. It is possible to select manual switching or automatic switching between "Lossnay ventilation (with heat exchange)" and "By-pass ventilation (without heat exchange)".
9. Operating temperature range is down to -15°C. With a pre-heater, it is available down to -25°C.


■ Caution for installation

【Ventilation design】

1. For the outside air intake vent, choose a position where combustion gas or other similar exhaust air is not sucked in and the vent is not buried by snow.
2. Do not install the product at locations where the product is prone to be damaged from salt or hot springs. Failure to heed this warning may result in malfunction of product.
3. Do not install the product at locations where toxic gas or gas containing corrosive components such as acids, alkaline, organic solvents, or paints is generated.
4. Do not install the product near bedrooms.
5. For living rooms (e.g. bedrooms) where it is anticipated that building ambient noise will be below 30 dB(A), use commercially available ducts that have sound deadening qualities on the supply air side.
6. Install supply air and exhaust air grills at locations where they are less likely to reverberate.
7. In cold regions or regions with strong winds, wind outside sometimes gets inside when operation of the product is stopped. So, we recommend providing a motorized shutter midway along the supply air and exhaust air ducts.
8. Install the product so that discharged gas or exhaust air from burning appliances and equipment does not flow back inside the product.
9. Use an outdoor hood, that makes it less likely for rain water, snow or small animals (e.g. bats) from entering the ends of the supply air and exhaust air ducts.
10. At the outdoor hood installation position, allow at least 3x the diameter of the duct through holes between the outdoor hood and the ducts so that exhaust air is not mixed in with supply air. (Preferably a distance of 450 mm or more should be ensured between the outdoor hood and the ducts.)
11. In areas where the outdoor air is below -20°C, electric shutters(local supply) is required in the OA duct in addition to the pre-heater. With the pre-heater, the OA temperature must be higher than -15°C.
12. Do not use duct booster fan on the RA/EA duct or the OA/SA duct. If an external force is applied to the built-in bypass damper, the damper may be fixed on the bypass side, when it is switching between Lossnay mode and Bypass mode, and heat recovery may be prevented.

【Installing the Lossnay unit】

1. The unit is exclusively vertical mounting type.
2. Do not install the product in hot places in the direct sunlight and in smoky places.
3. Do not install the Lossnay unit or the remote controller in a bathroom or other humid location.
4. Install the product and the duct piping on the indoor side of the insulation layer/airtight layer.
5. Install the product (on the wall) in the direction of the duct connecting flange so that it is horizontal (within  $\pm 1^\circ$  ).

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**【Duct piping】**

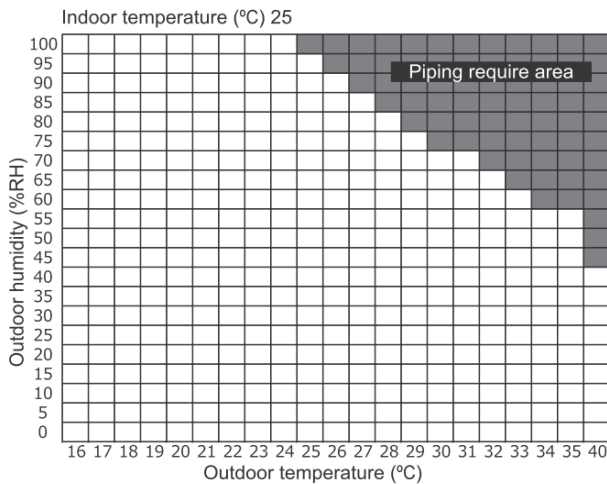
1. When metal ducts penetrate through metal-sheeted wooden buildings or structures, install the product so that there is no electrical contact between the metal ducts and the metal sheeting.
2. Secure duct piping with commercially available fixing bands, aluminum tape, etc. to prevent piping from coming loose. Install outdoor piping from the product so that it is tilted at a downward pitch of at least 1/30 towards the outside.
3. Be sure to insulate ducts down to the base of the duct connecting flanges.
4. Do not allow duct piping to contact the inspection opening, ceiling hanging bolts, beams, pillars, and other duct piping.
5. When discharging the air from a bathroom, use ducts made of a material that does not allow water to leak.
6. When using PCV ducts or metal ducts for the SA side ducts, be sure to connect ducts having silencer before the grill.
7. Calk the duct connecting flanges that discharge air from the bathroom with calking compound. When using calking compound, take care to prevent it from oozing from the ducts.

**【Duct heater】**

1. When using duct heaters (supply air preheaters, supply air after-heaters), make sure to use safety devices that do not have self-return functions. Do not supply the duct heaters with electricity directly from the product.
2. When using duct heaters (supply air preheaters, supply air after-heaters) that do not have temperature control functions, select duct heaters that have the appropriate capacity according to the airflow passing through the heaters.


**【Drain piping】**

1. Be sure to connect drain piping by the following procedure to prevent freezing and dew condensation forming on the surface of the piping.
  - Connect the drain piping on the indoor side of the insulation layer.
  - Insulate the drain piping up to the end of the piping
  - Do not let the end of draing piping be immersed in the rain gutter, etc.  
(At times of heavy snow, the rain gutter freezes and drain water is not discharged, which results in water leaking from the Lossnay unit)
2. Connect the drain pipe so that it has at least three degree of downward gradient from the lower part of the unit.
3. Be sure to attach commercially available check valves.
4. This unit has two drain pipes for EA and SA.
  - Drain pipe (EA) : Piping required.
  - Drain pipe (SA) : Depend on temperature and humidity, see the following conditions.



**■ Care and attention on the use of Lossnay unit**

1. To ensure correct and safe use, read the instruction manual thoroughly.
2. To keep the Lossnay functions in good condition for a long time, clean dirt or dust from the filters periodically.
3. To prevent dew condensation forming on the Lossnay core and water droplets from adhering to the product when there is a drop in the temperature of the outside air, operation of the supply air fan is changed automatically.  
(The exhaust fan runs continuously regardless of outdoor air temperature.)  
(Even while the supply air fan has stopped, the Lossnay unit sometimes operates periodically to measure the outdoor air temperature)

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