ENERGY RECOVERY VENTILATOR
CASE REFERENCE WORLDWIDE

Commercial
United Kingdom
Mead's Business Centre

Residential
Taiwan, China
(Central Park)

Residential
Taiwan, China
(Kuensun condominium)

Residential
Taiwan, China
(Merry Day)

Panasonic®

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Global Site: aircon.panasonic.com
PRO Club: panasonicproclub.global

CATALOG NO: P-INERV001
06.2023

Panasonic

ENERGY RECOVERY VENTILATOR

ONE-STOP ECO IAQ SOLUTION

- ENERGY SAVING
- AIR PURIFICATION
- THERMAL COMFORT

IMPORTANCE OF VENTILATION

Tightly sealed buildings are becoming increasingly common for energy efficiency purpose, reducing energy loss associated with heating and cooling. However, airtight buildings limited ingoing fresh air into the building results in poor indoor quality which adversely affects our health. Adequate ventilation, therefore, plays an essential role in maintaining a healthy living environment.

COMMON ISSUES TRIGGERED BY INSUFFICIENT VENTILATION

Commercial

Residential

ERV AS A MODERN SOLUTION

Among various ways of achieving ventilation, the utilization of Energy Recovery Ventilator (ERV) is a modern and effective solution. In different aspects, ERV is able to bring more benefits, comparing to the traditional ventilation method.

1. Achieve Air Purification
2. Increase Comfort Level
3. Increase Energy Saving

	ERV	Traditional Ventilation
Purification of intake air	○	△
Stable fresh air intake	○	△
Heat exchange	○	△
Equipment cost	△	○
Maintenance cost	△	○

○ Excellent / Available △ Less advantageous

AIR PURIFICATION

ENHANCED IAQ

The Energy Recovery Ventilator draws fresh air from outside while stale indoor air is exhausted. With 24-hour continuous ventilation, Indoor Air Quality (IAQ) is enhanced by exhausting out harmful indoor air contaminants.

Pre Filter Filter outdoor large dust particles and insects

MERV16 Filter  Filter dust and particles as tiny as 0.3μm

Efficient Filter

High-density purifying filter removal of particles as tiny as 0.3μm

MERV16 Filter

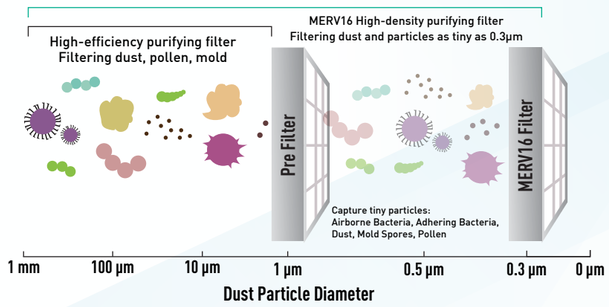
Able to filter 0.3μm up to

≥95%*

*Tested by using MERV16 filter for model FV-35ZY1, following ANSI/ASHRAE Standard 52.2-2017 [Testing Institution: Blue Heaven Technologies, Test report no. 23-105-1]

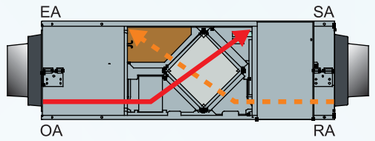
Recommended to change filter every 4-6 months and clean every month

Energy Recovery Ventilator Filter Structure



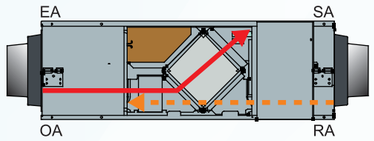
Speedy Bypass Ventilation

Diversion damper is equipped for Bypass Ventilation. When room airflow (RA) is greater than supply airflow (SA), it allows speedy exhaust of indoor polluted air. By using bypass ventilation during season change, it achieves better thermal comfort and energy savings.



[Heat Exchange Mode]

- In heat exchange mode, it pre-cools the hot outdoor air before entering the house. Thus, energy is saved while providing fresh air.



[Normal Ventilation Mode]

- Bypass vertilation
- When outdoor air is highly polluted, it is not recommended to use bypass ventilation. It may cause negative pressure and polluted outdoor air may ingress into the houses through the gaps at the doors and windows.

COMFORT

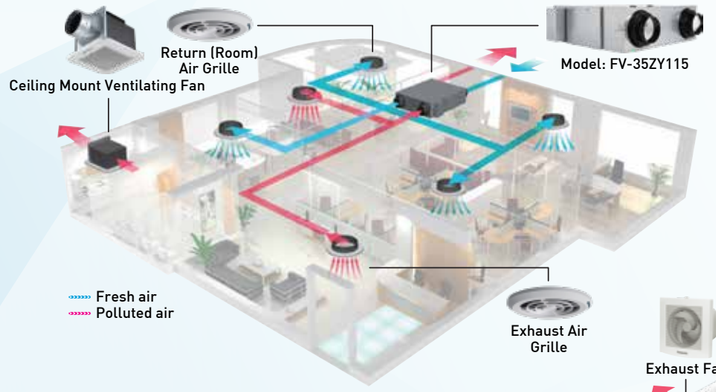
OPTIMUM INDOOR AIR COMFORT

An Energy Recovery Ventilator employs energy recovery technology, which uses balanced airflows and recovers otherwise-expended total energy comprised of heat (sensible energy) and humidity (latent energy). Subsequently, less energy is needed for conditioning while maintaining high-level ventilation.

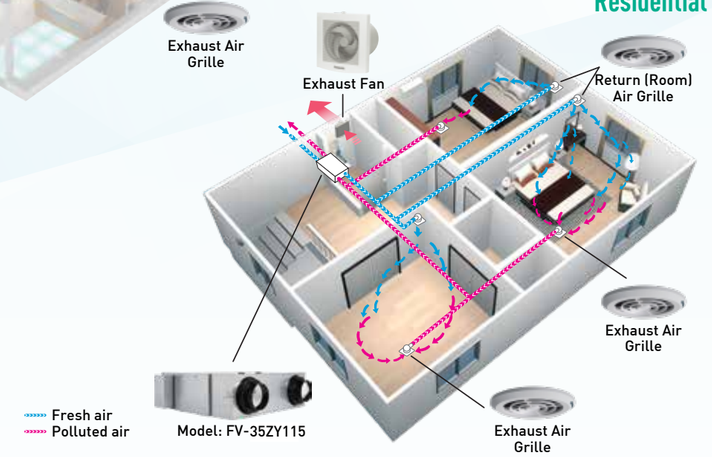
Thermal Comfort

The newly developed Energy Recovery Ventilator can be interlocked with air conditioning system. It offers balance, humidity control and comfort. Indoor occupants get to enjoy fresh air currents while maintaining optimal temperature.

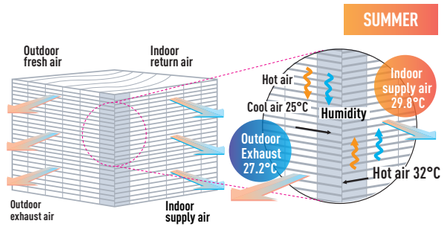
Office



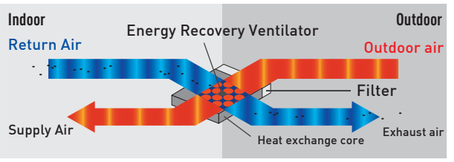
Residential



Inside of Heat Exchange Core (diagram)



Principle of Heat Exchange



Easy Installation and Maintenance

Slim Design

Installation has never been easier. With the height of only 450mm, Energy Recovery Ventilator is compact to fit into small spaces.

Flexible Mounting

Compact design and flexible mounting allow for easy installation in various indoor setting. It can be ceiling-mounted or installed upside-down.

Ceiling Mounted

Upside-down Mounted

LCD Control Panel

LCD Control Panel can be mounted on the wall, with a screen displaying circulation mode, airflow, filter maintenance reminder, etc. it offers simplified control buttons for ease of use, all necessary information with a touch of button.

EFFICIENCY

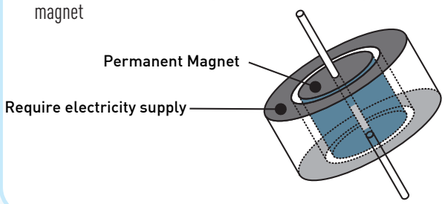
ENERGY AND COST SAVING

Motor Efficiency

DC (Direct Current) motor is used which consumes less power, thus achieves energy savings. In addition, the temperature rise of DC motor is lower when compared with AC (Alternating Current) motor, which results in longer life expectancy of DC motor.

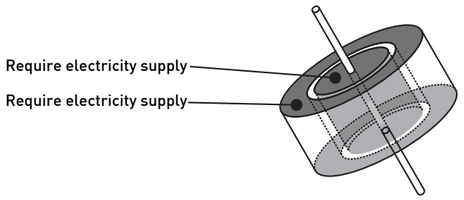
DC Motor

Stator uses electrical magnet while rotor uses permanent magnet



AC Motor

Both stator & rotor uses electrical magnet



Dual DC Motors

Dual DC motors achieve energy savings by over 43%*

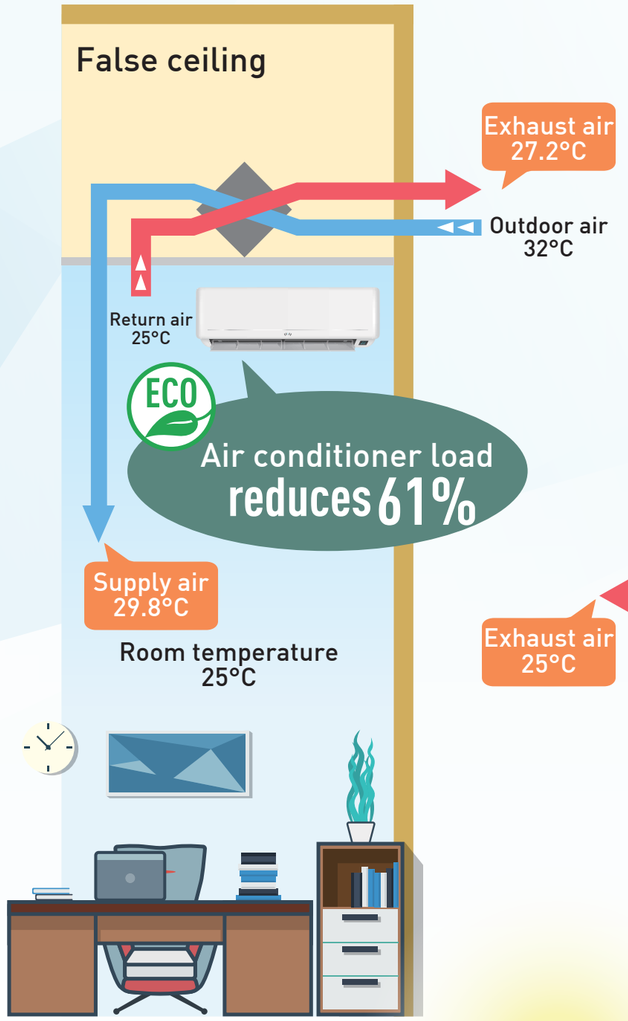
Motors	AC Motors	DC Motors	Energy usage
Electricity use (W)	315	180	-43%

*Comparison between DC model FV-50ZY1 180W vs AC old model (FY-E50DZ1) 315W

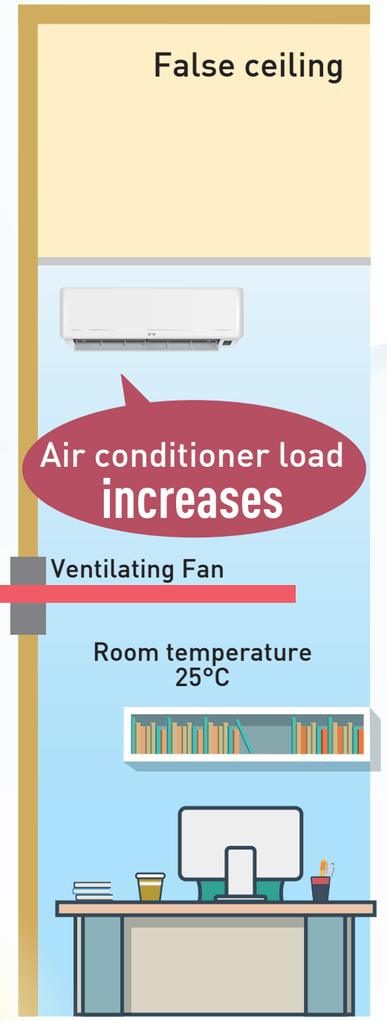
Energy Efficiency

Highly efficient Energy Recovery Ventilator reduces energy loss during ventilation, thus achieves energy saving. Below is an example in summer. By utilizing indoor return cold air to cool down outdoor air before intake to indoor, the indoor cooling effort is significantly reduced.

Energy Recovery Ventilation Mode



Normal Ventilation Mode



Summer Time

Utilize indoor return air to cool down incoming outdoor air at the heat exchange unit

ENERGY RECOVERY VENTILATOR

FV-35ZY115

Replacement Filter
Part No.: FV-FP35ZY115
Cleaning period: once per month
Replacement period: every 4 to 6 months

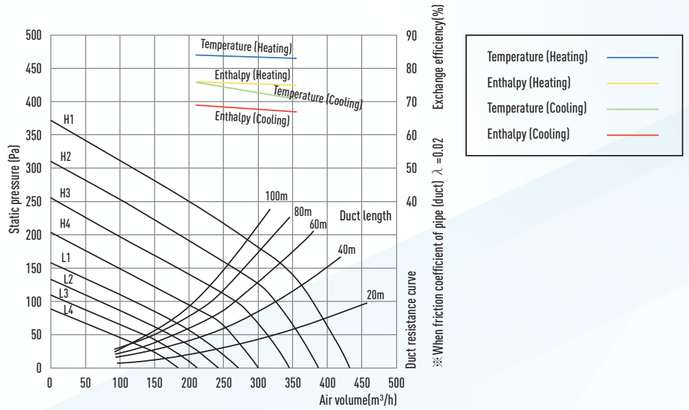
Safety is verified by various standards including
IEC (report no. 230106103GZS-001),
UKCA (report no. 230106101GZU-001) and
CE (report no. 230106101GZU-001)
^UKCA and CE reports are as reference only.
They are only applicable to European model FV-35ZY1G.

Features

Air Volume up to
350 m³/h

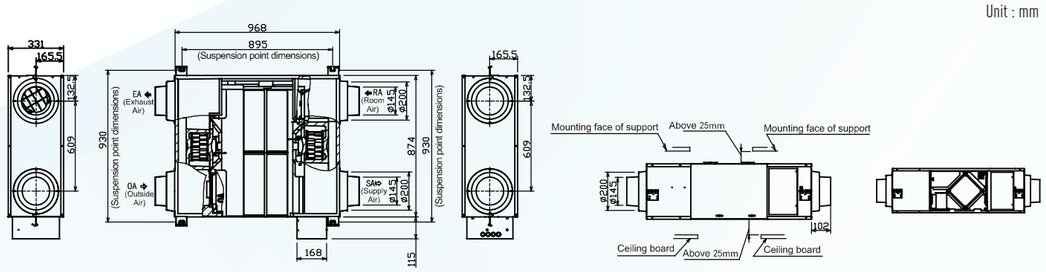
- MERV16 Filter
- Air-Con Connection
- High Efficiency
- 24 Hours Vent
- Two Ventilation Modes
- Low Noise

Performance



Dimensions

Unit : mm



Model: FV-35ZY115

Voltage & Hz	Notch	Static Pressure (Pa)	Air Volume (m³/h)	Input Power (W)	Temperature Exchange Efficiency (%)		Enthalpy Exchange Efficiency (%)		Noise (dB(A))	Applicable duct diameter	Net Weight (kg)
					Cooling	Heating	Cooling	Heating			
230V-60Hz	Hi	140	350	149	71	83	67	75	39	Ø150	37
	Lo	50.5	210	58	76	84	69	76	33		

1. The input power and exchange efficiency are the values measured under the standard air volume.
2. The above specification are the values measured under the factory set.
3. The power indicated on the name plate is the maximum value under the static pressure of 0 Pa.
4. The noise is measured 1.5 m directly below the center of the energy recovery ventilator. The noise value of the product is measured in a full anechoic chamber.
   Under actual conditions, due the impact of ambient sound, the noise value will be greater than the target value. The noise rises by about 1 dB (A) under reverse installation.
5. The air volume in normal ventilation mode is basically the same as the air volume in energy recovery mode.
6. The energy recovery efficiency test should be performed according to the method specified in Appendix 4 of JIS B 8628 (2003). The test environmental conditions should be subject to the winter and summer conditions specified in Table 1 and Table 2 of JIS B 8628 (2017). Other test methods should be subject to JIS B 8628 (2003).

ENERGY RECOVERY VENTILATOR

FV-50ZY115

Replacement Filter
Part No.: FV-FP50ZY115
Cleaning period: once per month
Replacement period: every 4 to 6 months

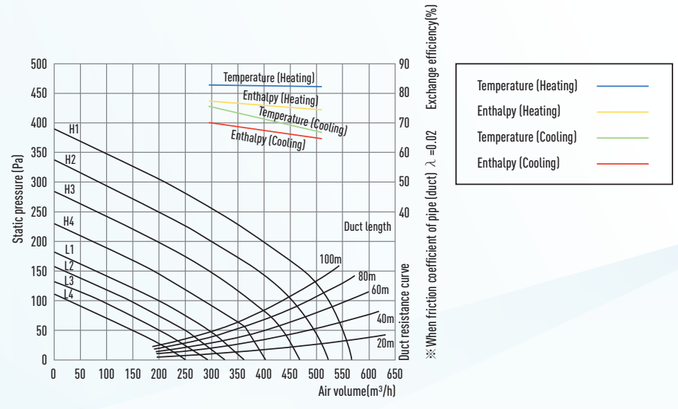
Safety is verified by various standards including
IEC (report no. 230106103GZS-001),
UKCA (report no. 230106101GZU-001) and
CE (report no. 230106101GZU-001)
^UKCA and CE reports are as reference only.
They are only applicable to European model FV-50ZY1G.

Features

Air Volume up to
500 m³/h

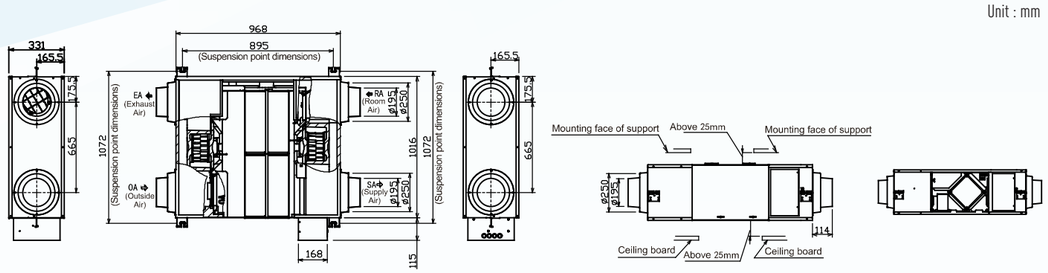
- MERV16 Filter
- Air-Con Connection
- High Efficiency
- 24 Hours Vent
- Two Ventilation Modes
- Low Noise

Performance



Dimensions

Unit : mm



Model: FV-50ZY115

Voltage & Hz	Notch	Static Pressure (Pa)	Air Volume (m³/h)	Input Power (W)	Temperature Exchange Efficiency (%)		Enthalpy Exchange Efficiency (%)		Noise (dB(A))	Applicable duct diameter	Net Weight (kg)
					Cooling	Heating	Cooling	Heating			
230V-60Hz	Hi	130	500	189	65	81	62.5	73	43	Ø200	40
	Lo	47	300	76	74	82	68	76	32		

1. The input power and exchange efficiency are the values measured under the standard air volume.
2. The above specification are the values measured under the factory set.
3. The power indicated on the name plate is the maximum value under the static pressure of 0 Pa.
4. The noise is measured 1.5 m directly below the center of the energy recovery ventilator. The noise value of the product is measured in a full anechoic chamber.
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ENERGY RECOVERY VENTILATOR

FV-65ZY115

Replacement Filter
Part No.: FV-FP65ZY115
Cleaning period: once per month
Replacement period: every 4 to 6 months

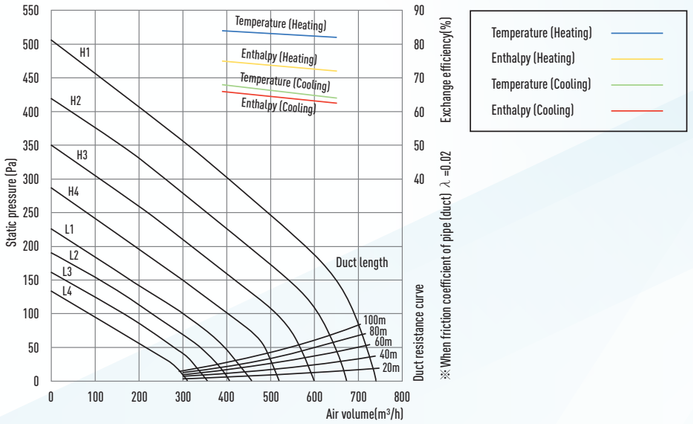
Safety is verified by various standards including
IEC (report no. 230106103GZS-001),
UKCA (report no. 230106101GZU-001) and
CE (report no. 230106101GZU-001)
^UKCA and CE reports are as reference only.
They are only applicable to European model FV-65ZY1G.

Features

Air Volume up to 650 m³/h

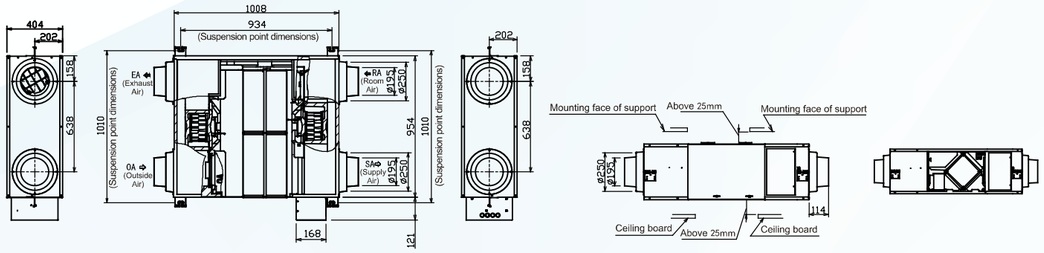
- MERV16 Filter
- Air-Con Connection
- High Efficiency
- 24 Hours Vent
- Two Ventilation Modes
- Low Noise

Performance



Dimensions

Unit : mm



Model: FV-65ZY115

Voltage & Hz	Notch	Static Pressure (Pa)	Air Volume (m³/h)	Input Power (W)	Temperature Exchange Efficiency (%)		Enthalpy Exchange Efficiency (%)		Noise (dB(A))	Applicable duct diameter	Net Weight (kg)
					Cooling	Heating	Cooling	Heating			
230V-60Hz	Hi	150	650	441	64	82	62.5	72	45	Ø200	48
	Lo	54	390	180	68	84	66	75	34		

1. The input power and exchange efficiency are the values measured under the standard air volume.
2. The above specification are the values measured under the factory set.
3. The power indicated on the name plate is the maximum value under the static pressure of 0 Pa.
4. The noise is measured 1.5 m directly below the center of the energy recovery ventilator. The noise value of the product is measured in a full anechoic chamber.
   Under actual conditions, due the impact of ambient sound, the noise value will be greater than the target value. The noise rises by about 1 dB (A) under reverse installation.
5. The air volume in normal ventilation mode is basically the same as the air volume in energy recovery mode.
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ENERGY RECOVERY VENTILATOR

FV-80ZY115

Replacement Filter
Part No.: FV-FP80ZY115
Cleaning period: once per month
Replacement period: every 4 to 6 months

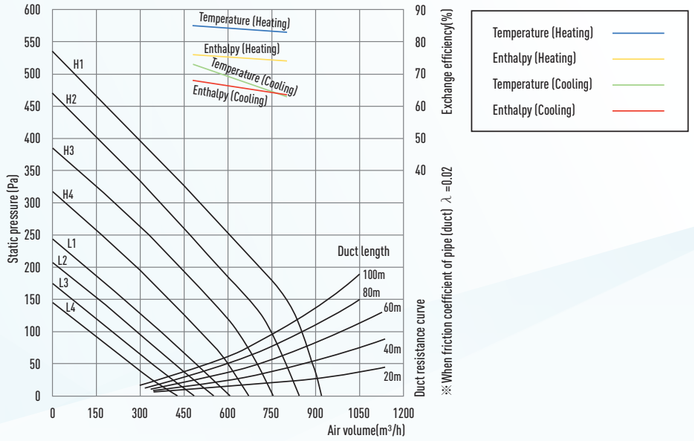
Safety is verified by various standards including
IEC (report no. 230106103GZS-001),
UKCA (report no. 230106101GZU-001) and
CE (report no. 230106101GZU-001)
^UKCA and CE reports are as reference only.
They are only applicable to European model FV-80ZY1G.

Features

Air Volume up to 800 m³/h

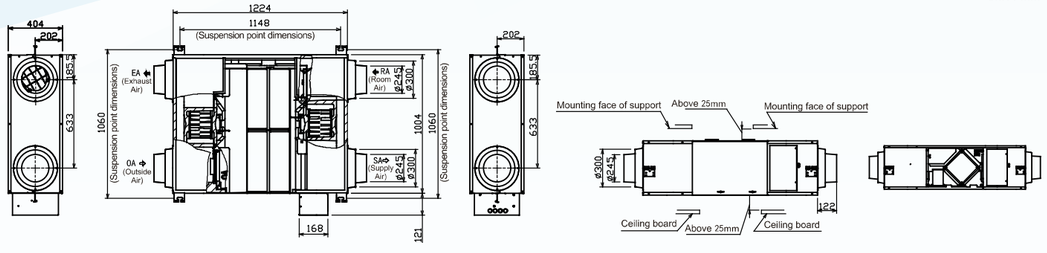
- MERV16 Filter
- Air-Con Connection
- High Efficiency
- 24 Hours Vent
- Two Ventilation Modes
- Low Noise

Performance



Dimensions

Unit : mm



Model: FV-80ZY115

Voltage & Hz	Notch	Static Pressure (Pa)	Air Volume (m³/h)	Input Power (W)	Temperature Exchange Efficiency (%)		Enthalpy Exchange Efficiency (%)		Noise (dB(A))	Applicable duct diameter	Net Weight (kg)
					Cooling	Heating	Cooling	Heating			
230V-60Hz	Hi	150	800	494	63	83	63.5	73	45	Ø250	60
	Lo	54	480	212	73	85	68	75	35		

1. The input power and exchange efficiency are the values measured under the standard air volume.
2. The above specification are the values measured under the factory set.
3. The power indicated on the name plate is the maximum value under the static pressure of 0 Pa.
4. The noise is measured 1.5 m directly below the center of the energy recovery ventilator. The noise value of the product is measured in a full anechoic chamber.
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ENERGY RECOVERY VENTILATOR

FV-1KZY115

Replacement Filter
Part No.: FV-FP1KZY115
Cleaning period: once per month
Replacement period: every 4 to 6 months

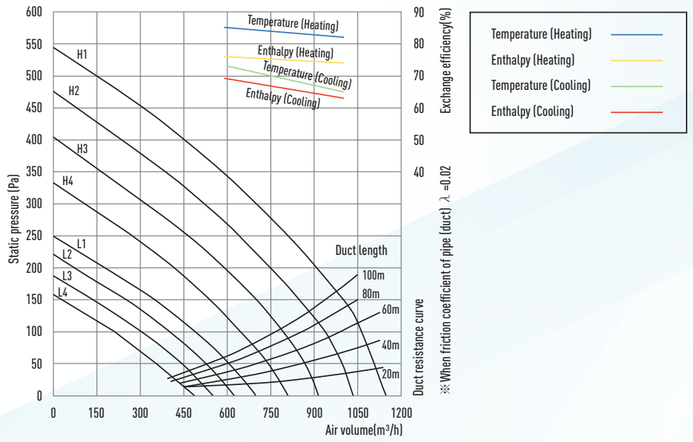
Safety is verified by various standards including
IEC (report no. 230106103GZS-001),
UKCA (report no. 230106101GZU-001) and
CE (report no. 230106101GZU-001)
^UKCA and CE reports are as reference only.
They are only applicable to European model FV-1KZY1G.

Features

Air Volume up to 1,000 m³/h

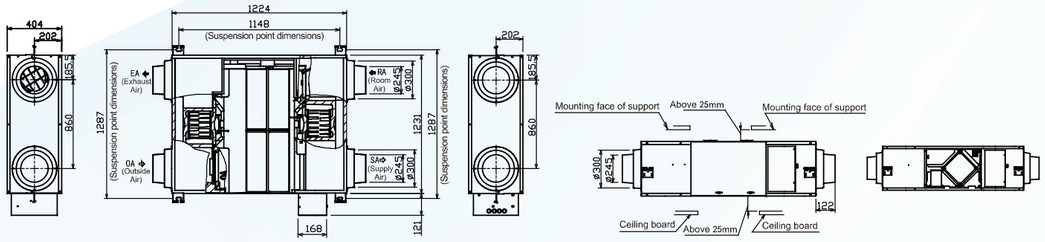
- MERV16 Filter
- Air-Con Connection
- High Efficiency
- 24 Hours Vent
- Two Ventilation Modes
- Low Noise

Performance



Dimensions

Unit : mm



Model: FV-1KZY115

Voltage & Hz	Notch	Static Pressure (Pa)	Air Volume (m³/h)	Input Power (W)	Temperature Exchange Efficiency (%)		Enthalpy Exchange Efficiency (%)		Noise (dB(A))	Applicable duct diameter	Net Weight (kg)
					Cooling	Heating	Cooling	Heating			
230V-60Hz	Hi	150	1000	578	65	82	63	74	46	Ø250	64
	Lo	54	600	235	73	85	69	76	36		

1. The input power and exchange efficiency are the values measured under the standard air volume.
2. The above specification are the values measured under the factory set.
3. The power indicated on the name plate is the maximum value under the static pressure of 0 Pa.
4. The noise is measured 1.5 m directly below the center of the energy recovery ventilator. The noise value of the product is measured in a full anechoic chamber.
   Under actual conditions, due the impact of ambient sound, the noise value will be greater than the target value. The noise rises by about 1 dB (A) under reverse installation.
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6. The energy recovery efficiency test should be performed according to the method specified in Appendix 4 of JIS B 8628 (2003). The test environmental conditions should be subject to the winter and summer conditions specified in Table 1 and Table 2 of JIS B 8628 (2017). Other test methods should be subject to JIS B 8628 (2003).

ENERGY RECOVERY VENTILATOR

FV-1HZY115

Replacement Filter
Part No.: FV-FP80ZY115 (2 sets are used each time)
Cleaning period: once per month
Replacement period: every 4 to 6 months

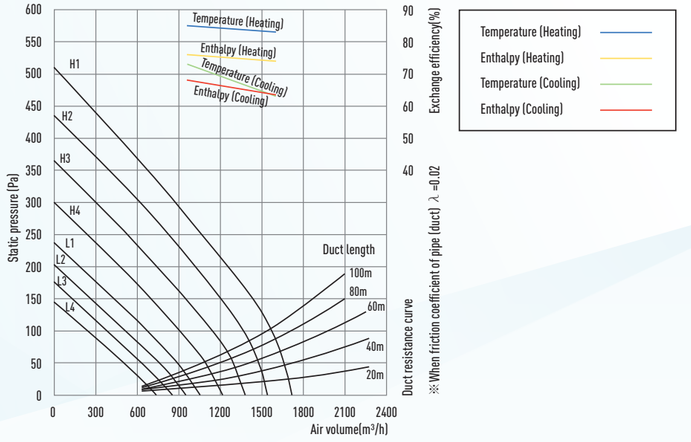
Safety is verified by various standards including
IEC (report no. 230106103GZS-001),
UKCA (report no. 230106101GZU-001) and
CE (report no. 230106101GZU-001)
^UKCA and CE reports are as reference only.
They are only applicable to European model FV-1HZY1G.

Features

Air Volume up to 1,500 m³/h

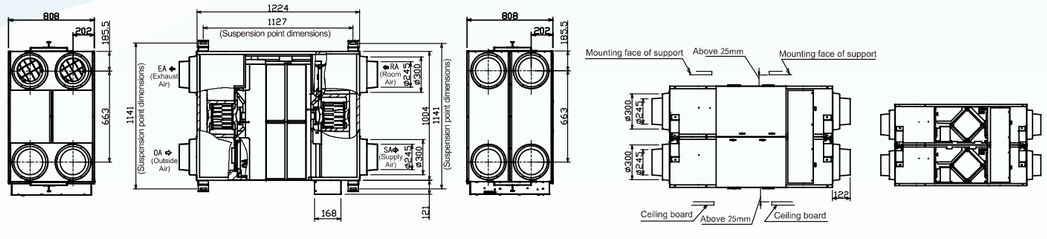
- MERV16 Filter
- Air-Con Connection
- High Efficiency
- 24 Hours Vent
- Two Ventilation Modes
- Low Noise

Performance



Dimensions

Unit : mm



Model: FV-1HZY115

Voltage & Hz	Notch	Static Pressure (Pa)	Air Volume (m³/h)	Input Power (W)	Temperature Exchange Efficiency (%)		Enthalpy Exchange Efficiency (%)		Noise (dB(A))	Applicable duct diameter	Net Weight (kg)
					Cooling	Heating	Cooling	Heating			
230V-60Hz	Hi	130	1500	987	63	83	63.5	73	49	Ø250	116
	Lo	48	900	430	73	85	68	75	41.5		

1. The input power and exchange efficiency are the values measured under the standard air volume.
2. The above specification are the values measured under the factory set.
3. The power indicated on the name plate is the maximum value under the static pressure of 0 Pa.
4. The noise is measured 1.5 m directly below the center of the energy recovery ventilator. The noise value of the product is measured in a full anechoic chamber.
   Under actual conditions, due the impact of ambient sound, the noise value will be greater than the target value. The noise rises by about 1 dB (A) under reverse installation.
5. The air volume in normal ventilation mode is basically the same as the air volume in energy recovery mode.
6. The energy recovery efficiency test should be performed according to the method specified in Appendix 4 of JIS B 8628 (2003). The test environmental conditions should be subject to the winter and summer conditions specified in Table 1 and Table 2 of JIS B 8628 (2017). Other test methods should be subject to JIS B 8628 (2003).

ENERGY RECOVERY VENTILATOR

FV-2KZY115

Replacement Filter
Part No.: FV-FP1KZY115 (2 sets are used each time)
Cleaning period: once per month
Replacement period: every 4 to 6 months

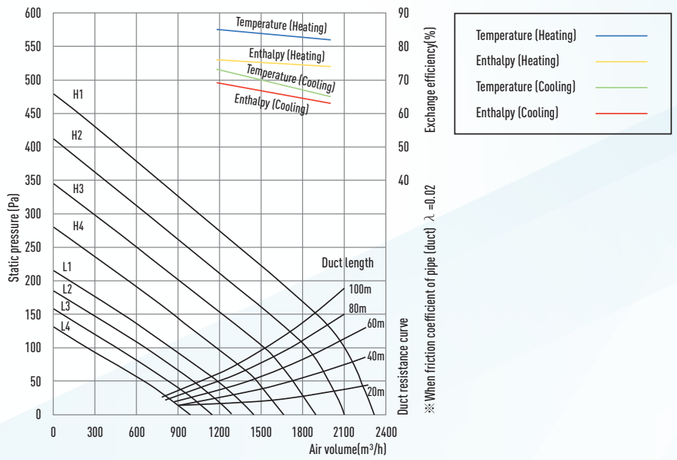
Safety is verified by various standards including
IEC (report no. 230106103GZS-001),
UKCA (report no. 230106101GZU-001) and
CE (report no. 230106101GZU-001)
^UKCA and CE reports are as reference only.
They are only applicable to European model FV-2KZY1G.

Features

Air Volume up to 2,000 m³/h

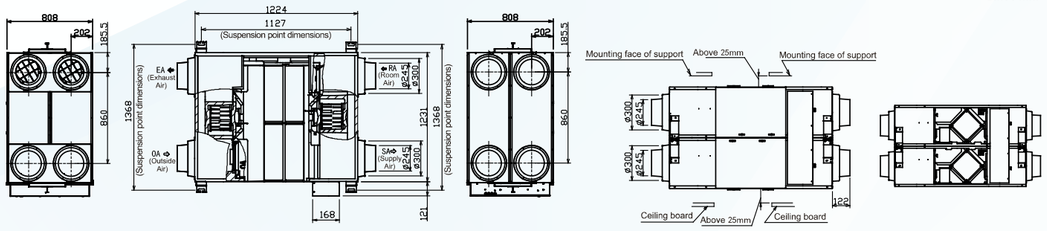
- MERV16 Filter
- Air-Con Connection
- High Efficiency
- 24 Hours Vent
- Two Ventilation Modes
- Low Noise

Performance



Dimensions

Unit : mm



Model: FV-2KZY115

Voltage & Hz	Notch	Static Pressure (Pa)	Air Volume (m³/h)	Input Power (W)	Temperature Exchange Efficiency (%)		Enthalpy Exchange Efficiency (%)		Noise (dB(A))	Applicable duct diameter	Net Weight (kg)
					Cooling	Heating	Cooling	Heating			
230V-60Hz	Hi	130	2000	1155	65	82	63	74	51	Ø250	139
	Lo	48	1200	490	73	85	69	76	43.5		

1. The input power and exchange efficiency are the values measured under the standard air volume.
2. The above specification are the values measured under the factory set.
3. The power indicated on the name plate is the maximum value under the static pressure of 0 Pa.
4. The noise is measured 1.5 m directly below the center of the energy recovery ventilator. The noise value of the product is measured in a full anechoic chamber. Under actual conditions, due the impact of ambient sound, the noise value will be greater than the target value. The noise rises by about 1 dB (A) under reverse installation.
5. The air volume in normal ventilation mode is basically the same as the air volume in energy recovery mode.
6. The energy recovery efficiency test should be performed according to the method specified in Appendix 4 of JIS B 8628 (2003). The test environmental conditions should be subject to the winter and summer conditions specified in Table 1 and Table 2 of JIS B 8628 (2017). Other test methods should be subject to JIS B 8628 (2003).

ACCESSORY

Control Panel

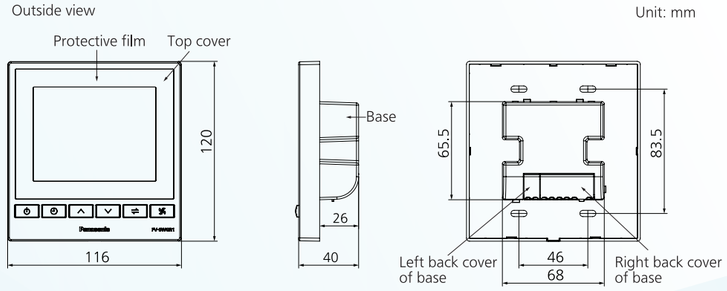
FV-SWGR1

Features

Voltage: 230V
Rated Wattage: 2W
Dimension: 116mm x 120mm
Weight: 0.26kg
LCD Panel
Switch Button between heat exchange and ventilation

Dimensions

Unit: mm



The control panel has built-in RS485, supports communication with the BMS (Building Management System), allowing interlocking between the ERV and the Air Conditioning system through non-voltage contact.

ERV

ERV

A/C

Central Control System