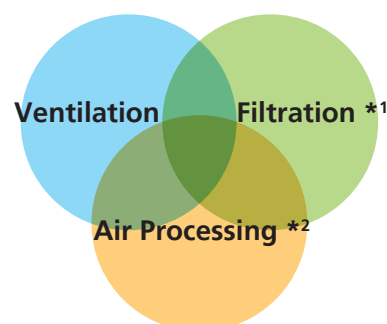


Air Treatment Equipment

Daikin's air treatment systems creating a higher IAQ

Components of indoor air quality

Air Conditioning +



A recent trend rapidly gaining popularity is for air treatment to be required as well as air conditioning. Daikin has a lineup of 3 products that provide adequate IAQ, according to the client's needs.

		Outdoor-Air Processing Unit	Heat Reclaim Ventilator	
			VKM-GC Type	VAM-GJ Type
Connections with VRV systems	Refrigerant Piping	Connectable	Connectable	Not connectable
	Wiring	Connectable	Connectable	Connectable
	After-cool & After-heat Control	Available	Available	Not available
Ventilation System		Air supply only	Air supply & air exhaust	Air supply & air exhaust
Heat Exchange Element		—	Energy savings obtained	Energy savings obtained
High Efficiency Filter (Option)		Available	Available	Available
PM2.5 Filter (Option)		Available	Not available	Available
Airflow Rate		1,080 - 2,100 m³/h	500 - 950 m³/h	150 - 2,000 m³/h

*1. PM2.5 filter (Option) is necessary.

*2. Refers to bringing outdoor air to near indoor temperature and delivering to a room.

Outdoor-air processing unit

FXMQ-MF Series

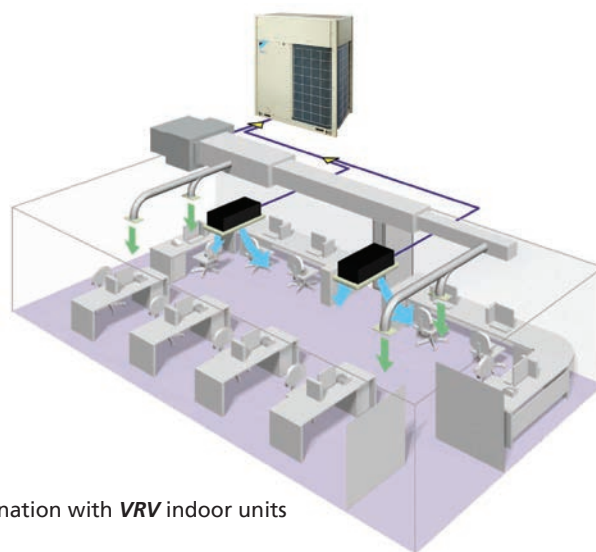
Combine fresh air treatment and air conditioning, supplied from a single system.



Lineup

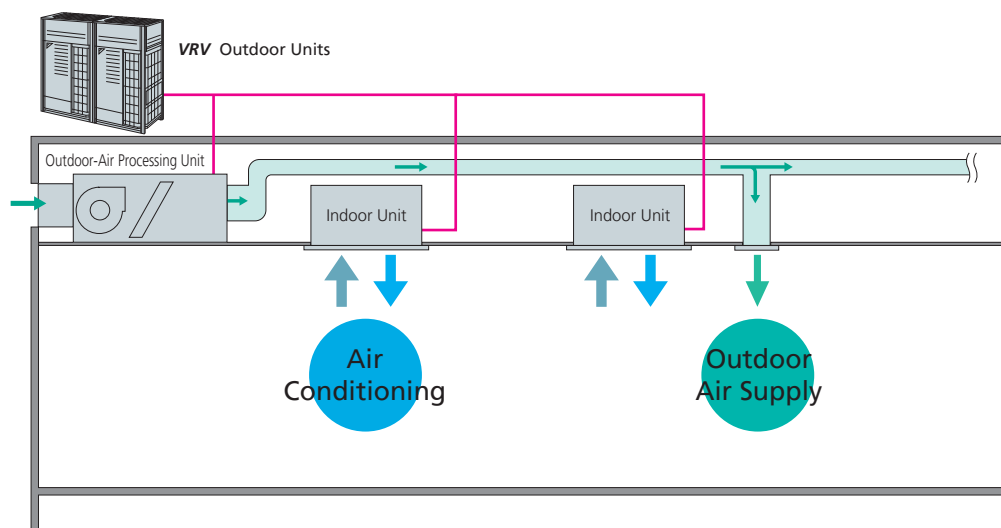
Model Name	FXMQ125MFV1	FXMQ200MFV1	FXMQ250MFV1
Capacity index	125	200	250
Airflow rate	1,080 m ³ /h	1,680 m ³ /h	2,100 m ³ /h

Fresh air treatment and air conditioning can be achieved with a single system. **VRV** indoor units for air conditioning and an outdoor-air processing unit can be connected to the same refrigerant line. This results in enhanced design flexibility.



Combination with **VRV** indoor units

Air conditioning and outdoor air processing can be accomplished using a single system.



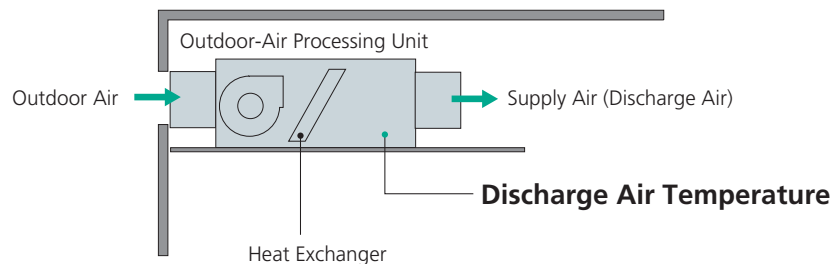
Connection Conditions

- Outdoor-air processing units can be used without indoor units. The total connection capacity index must be 50% to 100% of the capacity index of the outdoor units.
- When outdoor-air processing units and standard indoor units are combined, the total connection capacity index of the outdoor-air processing units must not exceed 30% of the capacity index of the outdoor units. Because connection is possible depending on conditions even when the capacity index of outdoor-air processing units exceeds 30% of the capacity index of the outdoor units, contact your local distributor.

Air Treatment Equipment

Outdoor-air processing / Discharge air temperature control

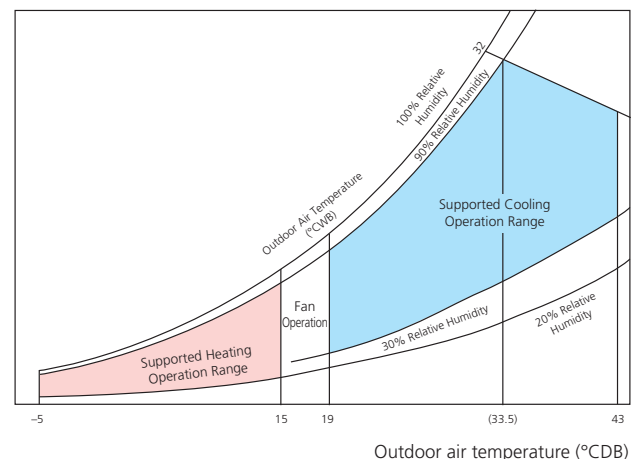
The unit supplies outdoor fresh air controlling discharge air temperature from the unit. Thereby reducing the indoor air conditioning load.



- * The default setting of the discharge air temperature is 18°C for cooling operation, and 25°C for heating operation. Using field settings, the set temperature may be changed within the range 13-25°C for cooling operation, and 18-30°C for heating operation.
- * While in unit protection mode and depending on outdoor air conditions, discharge air temperature may not be at the set temperature.
- * The fan stops in defrosting, oil returning and hot start operations due to mechanical protection control.

- Applicable to outdoor air temperature range from -5 - 43°C.
In cooling operation, 19 - 43°C is adoptable.

Notes: 1. The operation range shown in the graph is under the following conditions.
Indoor and Outdoor Unit
Equivalent piping length: 7.5 m,
Level difference: 0 m.
2. The system will not operate in fan mode when the outdoor air temperature is 5°C or below.



- Notes:
- * Linked control of this unit and the Heat Reclaim Ventilator is not supported.
 - * This unit is intended for the treatment of outdoor air only. Not to be used for maintaining indoor air temperature. Be sure that the discharge airflow will not blow on people directly. When outdoor-air processing is in excess, the unit switches to thermo-off mode, and outdoor air flows into the room directly.
 - * For outdoor ducts, be sure to provide heat insulation to prevent condensation.
 - * Group control of the product and standard indoor units is not supported. A separate remote controller should be connected to individual unit.
 - * If the unit is utilised to operate 24 hours a day, maintenance (part replacement, etc.) must be performed periodically.
 - * Temperature setting and Power Proportional Distribution (PPD) are not possible even if the intelligent Touch Controller or the intelligent Touch Manager is installed.
 - * The remote controller wired to the outdoor-air processing unit must not be set as the master remote controller. Otherwise, when set to "Auto," the operation mode will switch according to the outdoor air conditions, regardless of the indoor temperature.

Filtration equipment

PM2.5 Filter (Option)

* Refer to page 178-180 for details.

The filter removes PM2.5 particles suspended in the air, and also sulfur oxides and nitrogen oxides, providing clean air to the room.

- PM2.5 filter: Removes 99% or more of 2.5µm particulate matter.
- Activated carbon filter: Removes sulfur oxides and nitrogen oxides.

Activated carbon filter



High-efficiency filter & Long-life filter (Option)

- High performance filters with dust collection efficiencies (JIS calorimetry) of 90% and 65% are available as options. Long-life filter is also available.

Standard specifications

Type				Ceiling Mounted Duct Type					
MODEL				FXMQ125MFV1		FXMQ200MFV1		FXMQ250MFV1	
Power supply				1-phase 220-240 V, 50 Hz					
Cooling capacity *1			Btu/h	47,800		76,400		95,500	
			kW	14.0		22.4		28.0	
Heating capacity *1			Btu/h	30,400		47,400		59,400	
			kW	8.9		13.9		17.4	
Power consumption			kW	0.359		0.548		0.638	
Casing				Galvanised steel plate					
Dimensions (H × W × D)			mm	470 × 744 × 1,100		470 × 1,380 × 1,100			
Fan	Motor output		kW	0.380					
	Airflow rate		m³/min	18		28		35	
			cfm	635		988		1,236	
	External static pressure		220 V/240 V	Pa	185/225		225/275		205/255
Air filter				*2					
Refrigerant piping	Liquid		mm	φ 9.5 (Flare)					
	Gas		mm	φ 15.9 (Flare)		φ 19.1 (Brazing)		φ 22.2 (Brazing)	
	Drain		mm	PS1B female thread					
Machine weight			kg	86		123			
Sound level *3		220 V/240 V	dB(A)	42/43		47/48			
Connectable outdoor units *4				6 HP and above		8 HP and above		10 HP and above	
Operation range (Fan mode operation between 15 and 19°C)			Cooling	19 to 43°C					
			Heating	-5 to 15°C					
Range of the discharge temperature *5			Cooling	13 to 25°C					
			Heating	18 to 30°C					

Notes: *1. Specifications are based on the following conditions:

- Cooling: Outdoor temp. of 33°CDB, 28°CWB (68% RH), and discharge temp. of 18°CDB.
- Heating: Outdoor temp. 0°CDB, -2.9°CWB (50% RH), and discharge temp. of 25°CDB.
- Equivalent reference piping length: 7.5 m (0 m horizontal)

*2. An intake filter is not supplied, so be sure to install the optional long-life filter or high-efficiency filter. Please mount it in the duct system of the suction side. Select a dust collection efficiency (gravity method) of 50% or more.

*3. Anechoic chamber conversion value, measured at a point 1.5 m downward from the unit centre. These values are normally somewhat higher during actual operation as a result of ambient conditions.

*4. It is possible to connect to the outdoor unit if the total capacity of the indoor units is 50% to 100% of the capacity index of the outdoor unit.

*5. Local setting mode is not displayed on the remote controller.

• This equipment cannot be incorporated into the remote group control of the **VRF** system.

Options

MODEL			FXMQ125MFV1	FXMQ200MFV1	FXMQ250MFV1
Operation/control	Operation remote controller		BRC1H61W(K) / BRC1E63 / BRC2E61		
	Central remote controller		DCS302CA61		
	Unified ON/OFF controller		DCS301BA61		
	Wiring adaptor for electrical appendices (1)		KRP2A61		
	Wiring adaptor for electrical appendices (2)		KRP4AA51		
Filters	Long-life replacement filter		KAFJ371L140	KAF371M280	
	High-efficiency filter	Colourimetric method 65%	KAFJ372L140	KAF372M280	
		Colourimetric method 90%	KAFJ373L140	KAF373M280	
	Filter chamber *1		KDJ3705L140	KDJ3705L280	
PM2.5 filtration unit *2			BAF429A20A		
PM2.5 with activated carbon filtration unit *2			BAF429A20AC		
Drain pump kit			KDU30L250VE		
Adaptor for wiring			KRP1B61		

Notes: *1. Filter chamber has a suction-type flange. (Main unit does not.)

- Dimensions and weight of the equipment may vary depending on the options used.
- Some options may not be usable due to the equipment installation conditions, so please confirm prior to ordering.
- Some options may not be used in combination.
- Operating sound may increase somewhat depending on the options used.

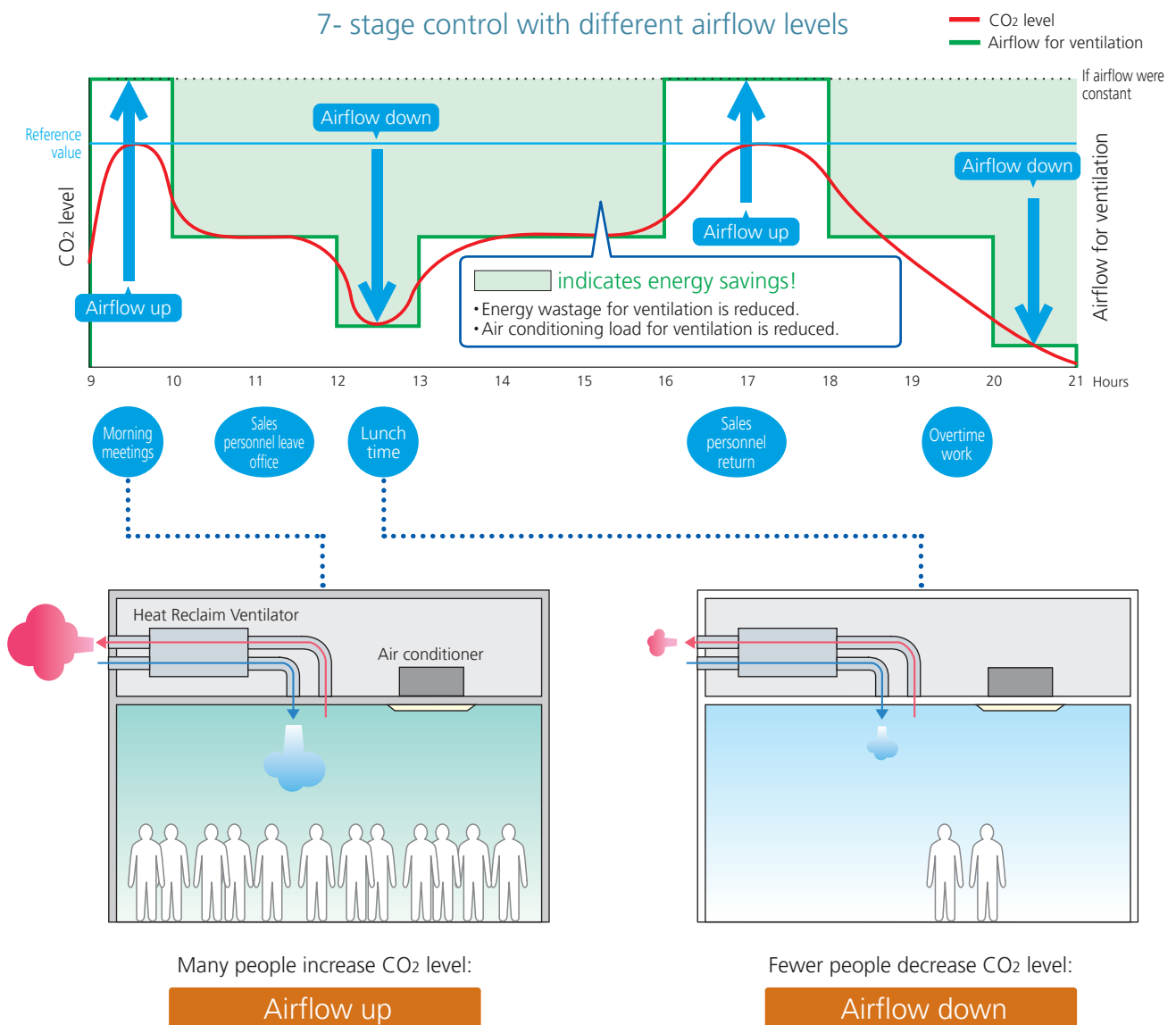
*2. Refer to pages 178 - 180 for details.

Air Treatment Equipment

CO₂ Sensor Optional Kit Connection for VAM / VKM Series

The CO₂ sensor controls airflow so that it best matches the changes of CO₂ level in the room. This prevents energy losses from over-ventilation while maintaining indoor air quality with optional CO₂ sensor.

- Example of CO₂ sensor operation in an office room:



PM2.5 filtration unit (Option) for VAM / VKM / FXMQ-MF series

Rapid urbanization has increased industrial and automobile emissions, resulting in higher PM2.5 levels. This has become the source of respiratory diseases and poses a serious threat to a long term health issue. As the air quality has worsened, research has shown the harmful effects of PM2.5 on the health of the general public.

Double-layered efficient filtration

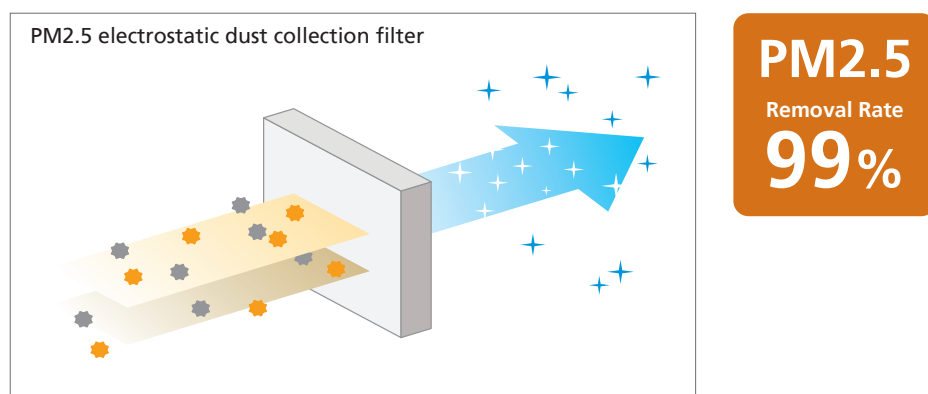
PM2.5 filters are double-layered.

1. The front filter effectively removes large particles.
2. The PM2.5 filter layer contains a large amount of static electricity to capture particulate matter efficiently.



Filtering PM2.5 efficiently for healthier and more comfortable environments

This filter removes 99% or more of 2.5 μm particulate matter.

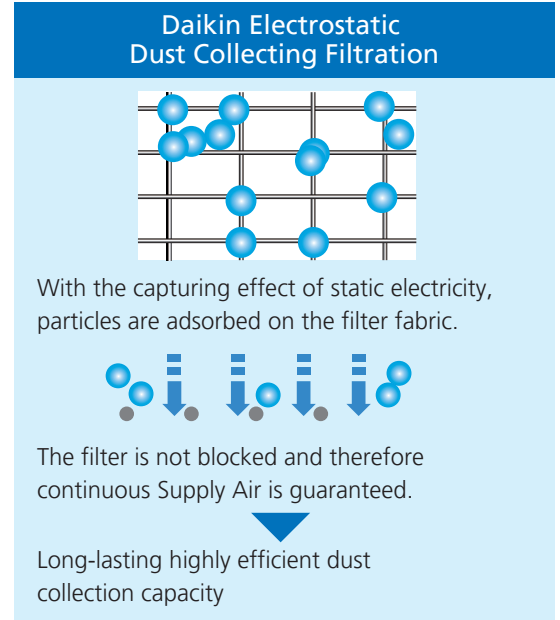


*Test results by the Heating, Ventilation and Air Conditioning Lab at Tongji University
Test environment: temperature 25-26°CDB, humidity 58-60%RH

Air Treatment Equipment

Electrostatic dust collection filter: more efficient and longer lasting effect

The PM2.5 filter layer contains a large amount of static electricity to capture particulate matter efficiently, including those smaller than the grid mesh. The filter is difficult to be blocked by particles and has good ventilation and long life span.

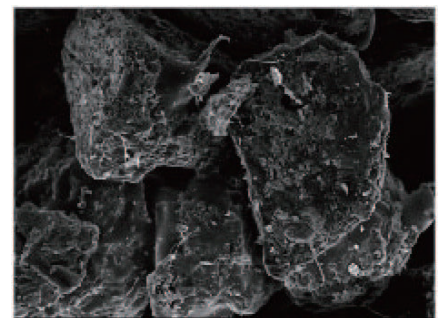


PM2.5 with activated carbon filtration unit (Option) for VAM / VKM / FXMQ-MF series Extra-high performance filter against sulfur oxides and nitrogen oxides

Effective Use of Active Carbon Material to Enlarge the Adsorption Area

As an expert in the research and development of filters, DAIKIN has specifically selected active carbon material as the main substance to constitute the filter against sulfur oxides and nitrogen oxides. The material's usable pore surface is fully exploited, thus extending the filter's durability.

Notes: Surface area of active carbon: 700 m²/g
Given a newspaper page of 40.6 cm wide by 54.6 cm long,
each gram of active carbon has a surface area of 3,000 newspaper pages.

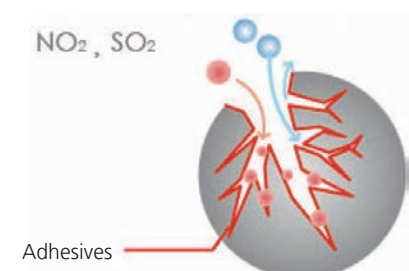


Intelligent Identification, Super-effective Adhesion

The special substance added in the pores of active carbon can exclusively target sulfur oxide and nitrogen oxide gases and stick to them without blocking other unidentified gases. This ensures long durability of the filter.

Note: The figures are based on in-house tests under the following lab conditions:
temperature 22 to 25°CDB, humidity 35 to 40% RH, air flow rate 0.2 m/s.

Unidentified Gases



Specifications

PM2.5 filtration unit

MODEL		BAF249A150	BAF249A300	BAF249A350	BAF249A500	BAF429A20A
Dimensions (H × W × D)	mm	220×603×366	220×603×366	300×623×366	300×623×366	470×971×370
Connection Duct Diameter	mm	φ 100	φ 150	φ 150	φ 200	580×348
Airflow Rate	m ³ /h	150	250	350	500	2,100
PM2.5 Filter	Initial Pressure Drop	Pa	34	30	31	42
	Filter Lifetime ^{*1}	1 year				
	Filtration Efficiency ^{*2}	99% or higher				
	Filter Material No. ^{*3}	BAF244A300		BAF244A500		BAF424A20A

Notes: 1. Annual usage: 400 hrs/month x 12 months = 4,800 hrs

2. 99% or higher removal rate of ultra-fine particles with diameters of 2.5 μm or more.

3. Filters come with applicable filtration units with a one-year life. They can be purchased and replaced according to their model numbers.

PM2.5 with activated carbon filtration unit

MODEL		BAF249A150C	BAF249A300C	BAF249A350C	BAF249A500C	BAF429A20AC
Dimensions (H × W × D)	mm	220×603×366	220×603×366	300×623×366	300×623×366	470×971×370
Connection Duct Diameter	mm	φ 100	φ 150	φ 150	φ 200	580×348
Airflow Rate	m ³ /h	150	250	350	500	2,100
Total Initial Pressure Drop for PM2.5 with Activated Carbon Filtration Unit	Pa	37	35	36	51	less than 50
PM2.5 Filter	Initial Pressure Drop	Pa	34	30	31	42
	Filter Lifetime ^{*1}	1 year				
	Filtration Efficiency ^{*2}	99% or higher				
	Filter Material No. ^{*3}	BAF244A300		BAF244A500		BAF424A20A
Activated Carbon Filter	Initial Pressure Drop	Pa	3	5	5	9
	Filter Lifetime	1 year				
	Filter Material No. ^{*3}	BAF244A300C		BAF244A500C		BAF424A20AC

Notes: 1. Annual usage: 400 hrs / month × 12 months = 4,800 hrs.

2. 99% or higher removal rate of ultra-fine particles with diameters of 2.5 μm or more.

3. Filters come with applicable filtration units with a one-year life. They can be purchased and replaced according to their model numbers.