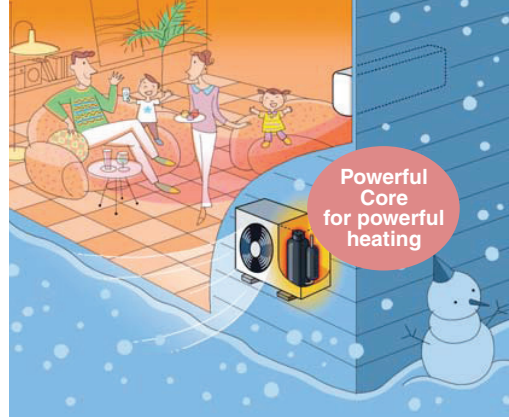


# FH VEHZ SERIES

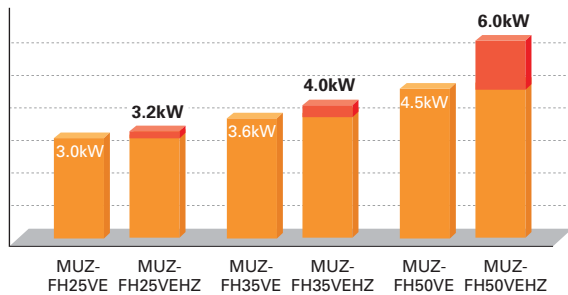
Unlike conventional air conditioning systems, the FH Series doesn't lose heating capacity when it's cold outside. Original technologies ensure excellent heating performance under extremely low outdoor temperatures and an impressive guaranteed operating range.



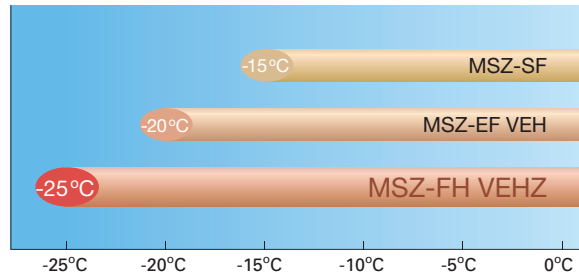
## Unparalleled Heating Performance

FH Series outdoor units are equipped with a high-output compressor that provides enhanced heating performance under low outdoor temperatures. The heating operation range is extended down to  $-25^{\circ}\text{C}$ .

### Declared Capacity (at reference design temperature)

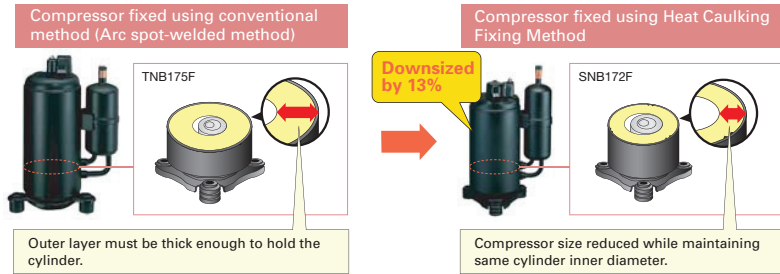


### Operation Range



### Compact, Powerful Compressor

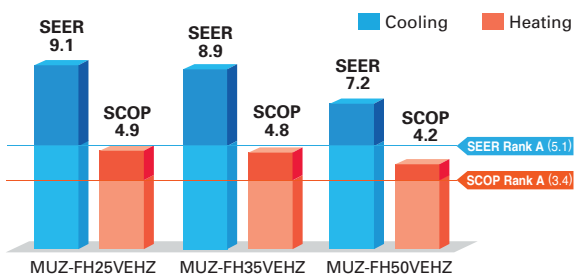
A special manufacturing technology, "Heat Caulking Fixing Method," has been introduced to reduce compressor size while maintaining a high compressor output. This technology enables the installation of a powerful compressor in compact MUZ outdoor units. As a result, excellent heating performance is achieved when operating in cold outdoor environments.



## High Energy Efficiency – Energy Rank of A<sup>+</sup> or higher for All Models



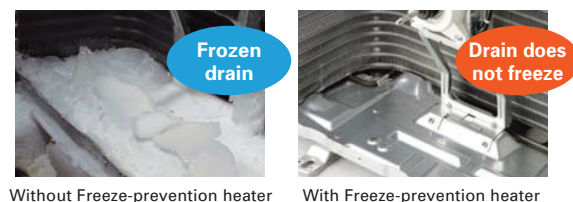
With indoor units that combine functionality, design and capacity and outdoor units equipped with a high-efficiency compressor, the MUZ-FH VEHZ simultaneously achieves high heating capacity and energy-saving performance.



## Freeze-prevention Heater Equipped as Standard

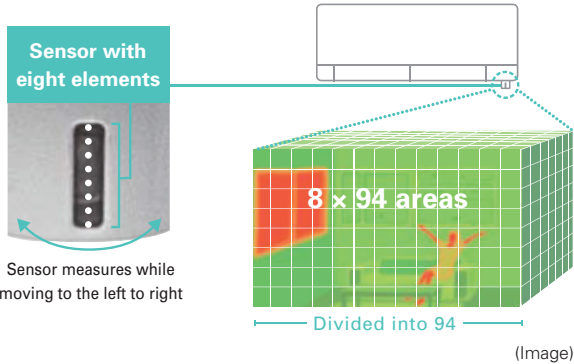
The Freeze-prevention heater restricts lowered capacity and operation shutdowns caused by the drain water freezing. This supports stable operation in low-temperature environments.

### Operation Guaranteed at Outside Temperature of $-25^{\circ}\text{C}$



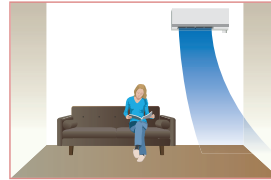
## 3D i-see Sensor

The FH Series is equipped with 3D i-see Sensor, an infrared-ray sensor that measures the temperature at distant positions. While moving to the left and right, eight vertically arranged sensor elements analyze the room temperature in three dimensions. This detailed analysis makes it possible to judge where people are in the room, thus allowing creation of features such as "Indirect airflow," to avoid airflow hitting people directly, and "direct airflow" to deliver airflow to where people are.



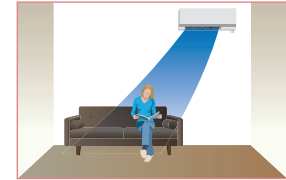
### Indirect Airflow

The indirect airflow setting can be used when the flow of air feels too strong or direct. For example, it can be used during cooling to avert airflow and prevent body temperature from becoming excessively cooled.



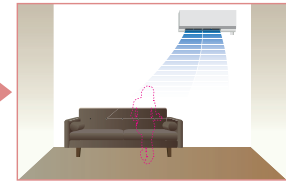
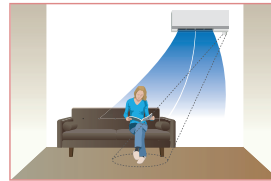
### Direct Airflow

This setting can be used to directly target airflow at people such as for immediate comfort when coming indoors on a hot (cold) day.



### Absence Detection

The sensors detect whether there are people in the room. When no-one is in the room, the unit automatically switches to energy-saving mode.



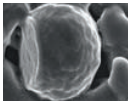
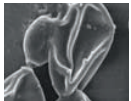
The "3D i-see Sensor" detects people's absence and the power consumption is automatically reduced approximately 10% after 10 minutes and 20% after 60 minutes.

## Plasma Quad

Air, like water, is something we use everyday unconsciously. Yet, clean, fresh air is a vital part of creating a healthy space for humans. Achieving this healthy air is Plasma Quad, a plasma-based filter system that effectively removes four kinds of air pollutants; namely, bacteria, viruses, allergens and dust, which the air contains countless particles of.

#### Bacteria

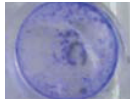
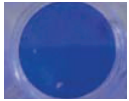
Test results have confirmed that Plasma Quad neutralizes 99% of bacteria in 115 minutes in a 25m<sup>3</sup> test space.

Plasma Quad off  Plasma Quad on 

<Test No.> KRCES-Bio.Test Report No.23\_0317

#### Viruses

Test results have confirmed that Plasma Quad neutralizes 99% of virus particles in 65 minutes in a 25m<sup>3</sup> test space.

Without Plasma Quad  With Plasma Quad 

\* Hepatic cells turn transparent when affected by a virus.  
<Test No.> vrc.center, SMC No.23-002

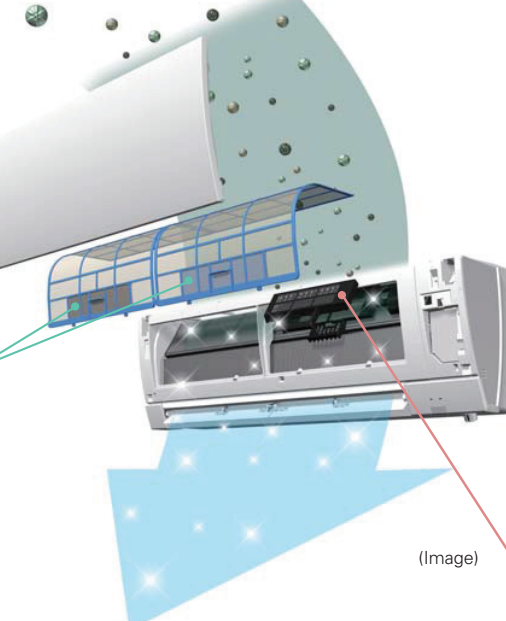
#### Allergens

In a test, air containing cat fur and pollen was passed through the air cleaning device at the low airflow setting. Before and after measurements confirm that Plasma Quad neutralizes 94% of cat fur and 98% of pollen.  
<Test No.> ITEA No.12M-RPTFEB022

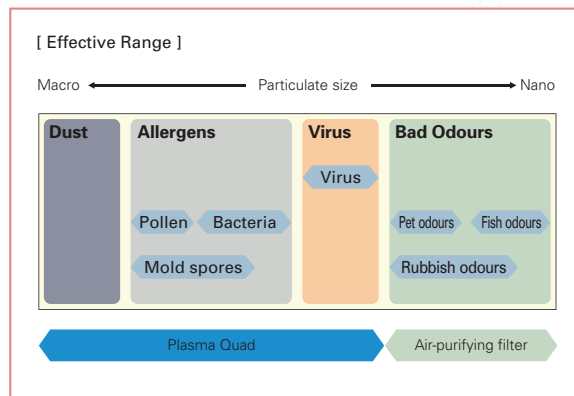
#### Dust

In a test, air containing dust and ticks was passed through the air cleaning device at the low airflow setting. Before and after measurements confirm that Plasma Quad removes 88.6% of dust and ticks.  
<Test No.> ITEA No.12M-RPTFEB022

Effective deodorizing using the air-purifying filter

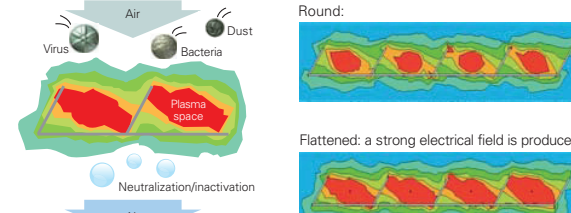


(Image)



### Principle of Plasma Quad

Plasma Quad attacks bacteria and viruses from inside the unit using a strong curtain-like electrical field and discharge of electric current across the whole inlet-air opening of the unit. Tungsten discharge electrodes are used as they provide both discharge capacity and strength. In addition, through flattening the standard, round form of the field to a ribbon-like shape, a strong electrical field is produced.



Round:

Flattened: a strong electrical field is produced.

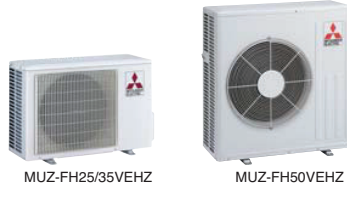
# MSZ-FH VEHZ SERIES



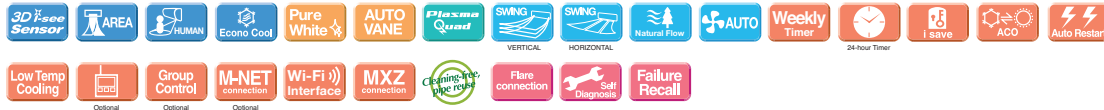
## Indoor Unit



## Outdoor Unit



## Remote Controller



Type			Inverter Heat Pump				
Indoor Unit			MSZ-FH25VE	MSZ-FH35VE	MSZ-FH50VE		
Outdoor Unit			MUZ-FH25VEHZ	MUZ-FH35VEHZ	MUZ-FH50VEHZ		
Refrigerant			R410A (*1)				
Power Supply	Source		Outdoor power supply				
	Outdoor (V/Phase/Hz)		230 / Single / 50				
Cooling	Design Load		kW	2.5	3.5	5.0	
	Annual Electricity Consumption (*2)		kWh/a	96	138	244	
	SEER (*4)			9.1	8.9	7.2	
	Energy Efficiency Class			A+++	A+++	A++	
	Capacity	Rated	kW	2.5	3.5	5.0	
		Min - Max	kW	0.8 - 3.5	0.8 - 4.0	1.9 - 6.0	
Total Input	Rated	kW	0.485	0.820	1.380		
	Design Load		kW	3.2 (-10°C)	4.0 (-10°C)	6.0 (-10°C)	
Heating (Average Season) (*5)	Declared Capacity		at reference design temperature	kW	4.0 (-10°C)	6.0 (-10°C)	
			at bivalent temperature	kW	4.0 (-10°C)	6.0 (-10°C)	
			at operation limit temperature	kW	2.6 (-25°C)	3.8 (-25°C)	
	Back Up Heating Capacity		kW	0.0 (-10°C)	0.0 (-10°C)	0.0 (-10°C)	
	Annual Electricity Consumption (*2)		kWh/a	924	1173	2006	
SCOP (*4)	Energy Efficiency Class			A++	A++	A+	
	Capacity	Rated	kW	3.2	4.0	6.0	
		Min - Max	kW	1.0 - 6.3	1.0 - 6.6	1.7 - 8.7	
	Total Input	Rated	kW	0.580	0.800	1.480	
Operating Current (max)		A	9.6	10.5	14.0		
Indoor Unit	Input		Rated	kW	0.029	0.029	0.031
	Operating Current (max)		A	0.4	0.4	0.4	
	Dimensions		H x W x D	mm	305 (+17) - 925 - 234		
	Weight		kg	13.5	13.5	13.5	
	Air Volume (SLO-Lo-Mid-Hi-SHI (*3) (Dry/Wet))	Cooling	m <sup>3</sup> /min	3.9 - 4.7 - 6.3 - 8.6 - 11.6 (10.5)		6.4 - 7.4 - 8.6 - 10.1 - 12.4	
		Heating	m <sup>3</sup> /min	4.0 - 4.7 - 6.4 - 9.2 - 13.2		5.7 - 7.2 - 9.0 - 11.2 - 14.6	
	Sound Level (SPL) (SLO-Lo-Mid-Hi-SHI (*3))	Cooling	dB(A)	20 - 23 - 29 - 36 - 42		27 - 31 - 35 - 39 - 44	
		Heating	dB(A)	20 - 24 - 29 - 36 - 44		25 - 29 - 34 - 39 - 46	
	Sound Level (PWL)		dB(A)	58	58	60	
	Outdoor Unit	Dimensions		H x W x D	mm	550 - 800 - 285	
Weight		kg	37	37	55		
Air Volume		Cooling	m <sup>3</sup> /min	31.3	33.6	48.8	
		Heating	m <sup>3</sup> /min	31.3	33.6	51.3	
Sound Level (SPL)		Cooling	dB(A)	46	49	51	
		Heating	dB(A)	49	50	54	
Sound Level (PWL)		dB(A)	60	61	64		
Operating Current (max)		A	9.2	10.1	13.6		
Breaker Size		A	10	12	16		
Ext. Piping		Diameter		Liquid / Gas	mm	6.35 / 9.52	
	Max. Length		Out-In	m	20		
	Max. Height		Out-In	m	12		
Guaranteed Operating Range [Outdoor]		Cooling	°C	-10 ~ +46			
		Heating	°C	-25 ~ +24			

(\*1) Refrigerant leakage contributes to climate change. Refrigerant with lower global warming potential (GWP) would contribute less to global warming than a refrigerant with higher GWP, if leaked to the atmosphere. This appliance contains a refrigerant fluid with a GWP equal to 1975. This means that if 1kg of this refrigerant fluid would be leaked to the atmosphere, the impact on global warming would be 1975 times higher than 1kg of CO<sub>2</sub>, over a period of 100 years. Never try to interfere with the refrigerant circuit yourself or disassemble the product yourself and always ask a professional.

(\*2) Energy consumption based on standard test results. Actual energy consumption will depend on how the appliance is used and where it is located.

(\*3) SHI: Super High

(\*4) SEER, SCOP and other related description are based on COMMISSION DELEGATED REGULATION (EU) No.626/2011. The temperature conditions for calculating SCOP are based on "Average Season".

(\*5) Please see page 47 for heating (warmer season) specifications.