

Panasonic

FSV VRF SYSTEMS 2021/2022



Panasonic®

**Building Passion,
Building Solutions.**
Panasonic Air Conditioning Systems

We face a time in which "quality air" differentiates business. It's a time for Panasonic to fully display its strengths. Our ability to assemble and build superior systems isn't just due to the rich resources we have as a comprehensive electronics manufacturer, but also to Panasonic's 100 years of tradition, where each person thinks and acts on their own initiative while working in a team to reach further heights. We do not compromise. Each of our independent selves is a one stop solution. We face our customers' challenges together with our customers and do all that we can to build effective systems. As a true partner for our customers, we strive to always be at the forefront of business.

- Please read the Installation Instructions carefully before installing the unit, and the Operating Instructions before using it.
- Specifications are subject to change without prior notice.
- The contents of this catalogue are accurate as of March 2021.
- Due to printing considerations, actual colours may vary slightly from those shown.
- All graphics are provided solely for the purpose of illustrating a point.

! Do not add or replace refrigerant other than the specified type. Manufacturer is not responsible for damage or deterioration in safety due to usage of other refrigerant.

Authorised Dealer

FSV Mini FSV ID, TH, MARCH 2021

Panasonic Heating & Cooling Solutions

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



aircon.panasonic.global



Residential &
Light Commercial Use



Commercial Use



A Better Life, A Better World

QUALITY AIR FOR LIFE

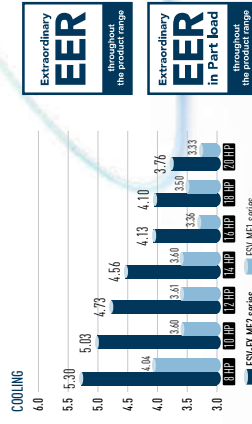
FSV-EX Advantages



The most efficient, powerful and quiet system in Panasonic's history. There has never been a VRF system like it. It's the story of a true game changer.

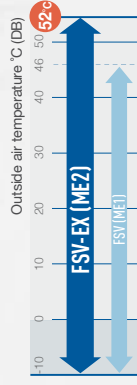
Extraordinary energy-saving performance

The FSV-EX marks a revolutionary step forward in VRF efficiency. A look at the incredible EER value clearly indicates that. What's more, this high EER value is achieved even during part load operation. This shows the extraordinary energy-saving performance the FSV-EX is capable of providing.



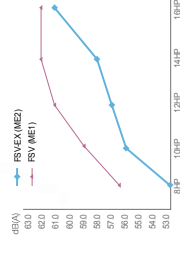
Extended operation range up to 52°C

The FSV-EX can provide cooling even when the outside temperature reaches a maximum of about 52°C. And amazingly, it can still operate at 100% capacity when the outside temperature is as high as 43°C. This high power capability enables reliable operation even under extremely high temperature conditions.



Low-noise operation

Numerous technological innovations, including an improved compressor and a newly designed bell mouth and larger fan, have dramatically reduced the outdoor noise level. The result is an even more comfortable building environment.



Multiple large-capacity all inverter compressors (more than 14HP)

Two independently controlled inverter compressors achieve high efficiency. Redesigned components in the body provide performance improvement especially in the rated cooling condition and EER performance.



Enlarged heat exchanger surface area with triple surface*

The new heat exchanger features a triple-surface construction. Compared to the divided dual-surface construction in current models, there is no division of space and the area for heat exchange is larger. Also, highly efficient piping pattern increases heat exchange performance by 5%.



* For 8.8 10HP unit, the heat exchanger is 2 row design.

Intelligent 3-stage Oil Management System



In a VRF system, where lengthy piping and a large number of indoor units need to be controlled collectively, the key to maintaining the system's reliability is to ensure an appropriate amount of oil is secured in the compressors. In order to avoid oil shortage in the compressor, maximum operation is normally forcibly conducted at regular intervals to recover oil from indoor units. This method, typically employed in a standard VRF, causes the system to overheat or overcool and thus waste energy.

In Panasonic VRF systems, a sensor for detecting oil levels is mounted in each compressor. In installations with multiple outdoor units, a shortage of oil in one compressor can be compensated for by recovering oil either from another compressor in the same unit, from a compressor in an adjacent outdoor unit, or from a connected indoor unit. Panasonic VRF systems provide users with a comfortable environment whilst saving energy.

The Panasonic system efficiently manages oil recovery in three stages; minimising the frequency of forced oil recovery while reducing energy cost and maintaining comfort.

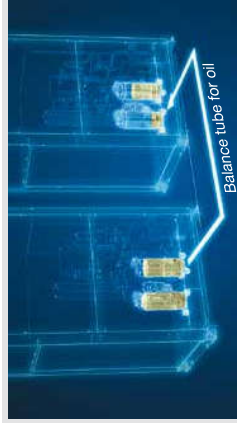
STAGE-1

Panasonic compressors are equipped with sensors which monitor oil levels precisely at all times. If oil levels fall, oil can be transferred from other compressors within the same outdoor unit.



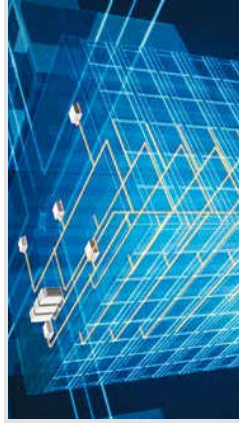
STAGE-2

If oil levels in all compressors within the outdoor unit fall, oil can be replenished from adjacent outdoor units.



STAGE-3

Forced oil recovery is implemented only if oil levels become insufficient in spite of above measures. The Panasonic system's design concept is radically different from conventional oil systems.

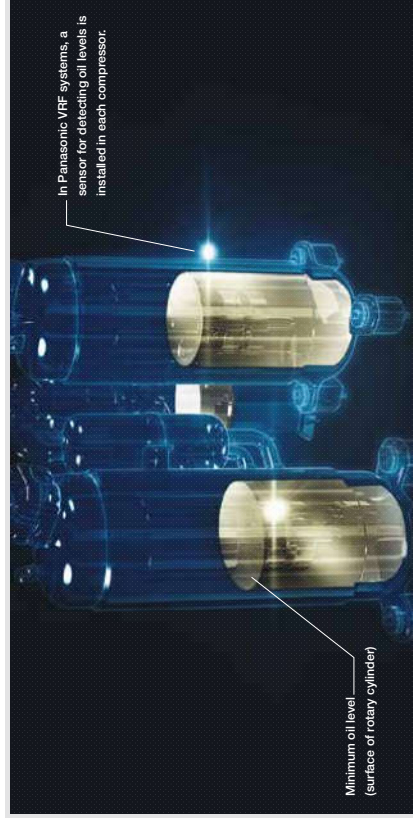


Features of 3-stage oil recovery design

1

Oil sensors installed in each compressor

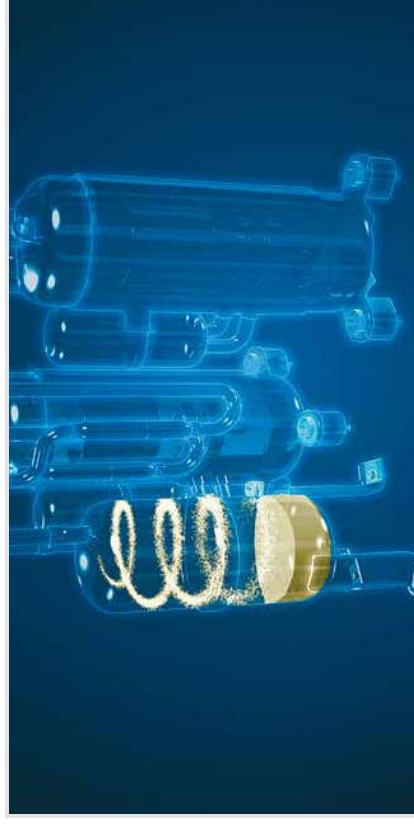
Oil sensors installed in each Panasonic compressor precisely monitor oil levels, eliminating unnecessary oil recovery.



2

Highly functional oil separator

Thanks to extended separate piping, oil recovery efficiency reaches 90%, minimising the oil to be discharged from the compressor.



FSV Systems

FSV systems are designed for energy savings, high efficiency, and high durability with strong cooling power even operating at high ambient temperature. Panasonic continuously apply advanced technologies to meet the requirements of diverse situations and contribute to the creation of comfortable living spaces.

2-WAY FSV-EX ME2 Series

Extraordinary energy-saving performance and powerful operation

Space-saving Combination Model

Cooling or Heating Type

Hi-Durability Model

- Wide range of systems from 8HP to 80HP
- Class-leading EER of 5.3 (for 8HP model)
- Industry-leading low noise of 53.0 DB (8HP model)
- Cooling operation possible with outdoor temperature as high as 52°C (DB)
- Long maximum pipe length (up to 1,000 m)
- Up to 64 indoor units connectable
- External static pressure of 60 Pa
- Extended operating range allows heating with outdoor temperatures as low as -23°C (WB)
- Suitable for R22 renewal project **R22**



High Efficiency Combination Model

Cooling or Heating Type

Hi-Durability Model

- Wide range of systems from 8HP to 64HP
- Class-leading EER of 5.3 (for 8HP model)
- Higher EER than the Space-saving Combination Model
- e.g., a combination of two 10-HP units delivering 20-HP reduces compressor load
- Suitable for R22 renewal project **R22**



2-WAY Mini-FSV LE2 Series

For small-scale commercial and residential use

Cooling or Heating Type 1/3-phase

4/5/6 HP

- High external static pressure 35Pa
- Wide operation range: Cooling: -10°C to 46°C DB, Heating at: -20°C to 18°C WB
- Refrigerant chargeless up to 50m
- Extraordinary energy saving: 5.08 EER for 4-HP model
- Demand response (Peak cut) by optional parts.
- Maximum number of connectable indoor units : 9*
- Diversity ratio 50-130%
- DC inverter technology combined with R410A for excellent efficiency
- Demand response (Peak cut) by optional parts.
- One ampere starting current
- Full range of indoor units and control options
- Auto restart from outdoor unit
- Hi-durability outdoor unit model is available.
- Suitable for R22 renewal project **R22**
- 6 HP only, 4 HP for 7 units, 5 HP for 6 units.



2-WAY Mini-FSV LE1 Series

For small-scale commercial and residential use

Cooling or Heating Type 3-phase

8/10 HP

- High external static pressure 35Pa
- Wide operation range: Cooling: -10°C to 46°C DB, Heating at: -20°C to 18°C DB
- Maximum number of connectable indoor units : 13
- Diversity ratio 50-130%
- DC inverter technology combined with R410A for excellent efficiency
- Actual piping length: 150m (Total piping length: 300m)
- System difference of elevation: 50m / 40m (outdoor above/below)
- Difference in elevation between indoor units: 15m
- Demand response (Peak cut) by optional parts.
- One ampere starting current
- Full range of indoor units and control options
- Auto restart from outdoor unit
- Hi-durability outdoor unit model is available.
- Suitable for R22 renewal project **R22**



2-WAY FSV-EX ME2 Series

High Efficiency Combination Model

Appearance																				
HP																				
Model name																				
Power supply																				

2-WAY FSV-EX ME2 Series

Space-saving Combination Model

Appearance	    										
	HP	U-8ME2H7		U-12ME2H7		U-16ME2H7		U-20ME2H7		U-24ME2H7	
Model name		380/400/415V/3-phase/50Hz 380/400/3-phase/60Hz									
Power supply	Cooling	kW	22.4	28.0	33.5	40.0	46.0	50.0	56.0	61.5	68.0
	BTU/h		76,500	95,600	114,300	136,500	153,600	170,600	191,100	209,300	232,100
Capacity	Heating	kW	31.5	37.5	45.0	50.0	56.0	63.0	69.0	76.5	
	BTU/h		85,300	107,500	128,000	136,600	153,600	170,600	191,100	215,000	261,100
EER / COP	Cooling	WW	5.30	5.03	4.73	4.56	4.31	4.10	3.76	4.44	4.69
	Heating	WW	5.94	5.56	5.38	5.29	5.13	5.05	4.60	5.48	5.31
Dimensions	H x W x D	mm	1,842 x 770 x 1,000	1,842 x 1,180 x 1,000	1,842 x 1,180 x 1,000	1,842 x 1,180 x 1,000	1,842 x 1,180 x 1,000	1,842 x 1,180 x 1,000	1,842 x 1,540 x 1,000	1,842 x 2,020 x 1,000	1,842 x 2,420 x 1,000
	Net weight	kg	210	270	315	375	435	480	540	540	540
Electrical ratings	Cooling	Running current A	7.14 / 6.79 / 6.54	8.92 / 8.14 / 8.81	11.8 / 11.2 / 10.8	15.3 / 14.5 / 14.0	18.4 / 17.5 / 16.8	20.6 / 19.6 / 18.9	24.6 / 23.4 / 22.5	21.4 / 20.4 / 19.6	24.2 / 23.0 / 22.2
	Heating	Running current A	4.23	5.57	7.08	8.77	10.9	12.2	14.9	12.7	14.5
Starting current	Running current A		1	1	1	1	1	1	1	1	1
	Power input kW		4.26	5.67	6.97	8.51	9.75	11.1	13.7	12.6	14.4
Air flow rate	Running current A		1	1	1	1	1	1	1	1	1
	Power input kW		4.26	5.67	6.97	8.51	9.75	11.1	13.7	12.6	14.4
Refrigerant amount at shipment	Running current A		1	1	1	1	1	1	1	1	1
	Power input kW		4.26	5.67	6.97	8.51	9.75	11.1	13.7	12.6	14.4
External static pressure	Running current A		1	1	1	1	1	1	1	1	1
	Power input kW		4.26	5.67	6.97	8.51	9.75	11.1	13.7	12.6	14.4
Piping connections	Running current A		1	1	1	1	1	1	1	1	1
	Power input kW		4.26	5.67	6.97	8.51	9.75	11.1	13.7	12.6	14.4
Ambient temperature operating range	Running current A		1	1	1	1	1	1	1	1	1
	Power input kW		4.26	5.67	6.97	8.51	9.75	11.1	13.7	12.6	14.4
Sound	Running current A		1	1	1	1	1	1	1	1	1
	Power input kW		4.26	5.67	6.97	8.51	9.75	11.1	13.7	12.6	14.4
Sound power level	Running current A		1	1	1	1	1	1	1	1	1
	Power input kW		4.26	5.67	6.97	8.51	9.75	11.1	13.7	12.6	14.4

Appearance											
HP		U-8ME2H7		U-12ME2H7		U-16ME2H7		U-20ME2H7		U-24ME2H7	
Model name		U-8ME2H7		U-12ME2H7		U-16ME2H7		U-20ME2H7		U-24ME2H7	
Power supply		380/400/415V/3-phase/50Hz 380/400/3-phase/60Hz									
Capacity	Cooling	kW	140.0	145.0	151.0	156.0	162.0	168.0	174.0	180.0	186.0
	BTU/h		477,800	494,900	515,400	532,100	552,900	573,400	593,900	614,300	631,400
Heating	BTU/h		155.0	160.0	169.0	175.0	182.0	189.0	196.0	201.0	207.0
	kW		45.0	46.5	49.5	51.5	53.5	55.5	57.5	59.5	61.5
EER / COP	Cooling	WW	4.09	3.99	3.95	3.87	3.86	3.76	3.76	3.76	3.76
	Heating	WW	5.00	4.95	4.79	4.75	4.60	4.50	4.40	4.30	4.25
Dimensions	H x W x D		1,842 x 1,020 x 1,000	1,842 x 1,020 x 1,000	1,842 x 1,380 x 1,000	1,842 x 1,380 x 1,000	1,842 x 1,380 x 1,000	1,842 x 1,380 x 1,000	1,842 x 1,380 x 1,000	1,842 x 1,380 x 1,000	1,842 x 1,380 x 1,000
	Net weight	kg	1,005	1,005	1,065	1,065	1,125	1,125	1,185	1,185	1,245
Electrical ratings	Cooling	Running current A	57.7 / 54.8 / 52.9	60.6 / 57.6 / 55.5	63.8 / 60.6 / 58.4	67.3 / 63.9 / 61.6	70.1 / 66.6 / 64.2	73.6 / 70.1 / 67.6	76.2 / 72.6 / 70.1	79.7 / 76.2 / 73.6	83.2 / 79.7 / 77.2
	Power input kW		34.2	36.3	38.2	40.3	42.0	43.7	45.4	47.1	48.8
Starting current	Running current A		1	1	1	1	1	1	1	1	1
	Power input kW		31.0	32.3	33.6	34.9	36.2	37.5	38.8	40.1	41.4
Air flow rate	Running current A		1	1	1	1	1	1	1	1	1
	Power input kW		31.0	32.3	33.6	34.9	36.2	37.5	38.8	40.1	41.4
Refrigerant amount at shipment	Running current A		1	1	1	1	1	1	1	1	1
	Power input kW		31.0	32.3	33.6	34.9	36.2	37.5	38.8	40.1	41.4
External static pressure	Running current A		1	1	1	1	1	1	1	1	1
	Power input kW		31.0	32.3	33.6	34.9	36.2	37.5	38.8	40.1	41.4
Piping connections	Running current A		1	1	1	1	1	1	1	1	1
	Power input kW		31.0	32.3	33.6	34.9	36.2	37.5	38.8	40.1	41.4
Ambient temperature operating range	Running current A		1	1	1	1	1	1	1	1	1
	Power input kW		31.0	32.3	33.6	34.9	36.2	37.5	38.8	40.1	41.4
Sound	Running current A		1	1	1	1	1	1	1	1	1
	Power input kW		31.0	32.3	33.6	34.9	36.2	37.5	38.8	40.1	41.4
Sound power level	Running current A		1	1	1	1	1	1	1	1	1
	Power input kW		31.0	32.3	33.6	34.9	36.2	37.5	38.8	40.1	41.4

Global remarks

Rated conditions	Cooling	Heating
Indoor air temperature	27°C DB / 19°C WB	20°C DB
Outdoor air temperature	35°C DB	7°C DB / 45°C WB

These specifications are subject to change without notice.

2-WAY Mini-FSV LE2 Series

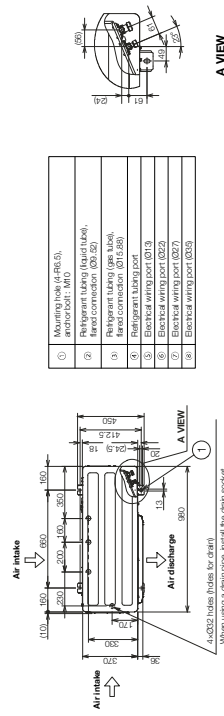
HP	4	4	5	5	6	6
Model name	U-4LE2H4	U-4LE2H7	U-5LE2H4	U-5LE2H7	U-6LE2H4	U-6LE2H7
Power supply	220/230/240V/ 3-phase/50Hz	380/400/415V/ 3-phase/50Hz	220/230/240V/ 1-phase/50Hz	380/400/415V/ 3-phase/50Hz	220/230/240V/ 1-phase/50Hz	380/400/415V/ 3-phase/50Hz
Voltage	220V 230V 240V	380V 400V 415V	220V 230V 240V	380V 400V 415V	220V 230V 240V	380V 400V 415V
Capacity	kW BTU/h	12.1 41,300	12.1 41,300	14.0 47,800	15.5 52,900	15.5 52,900
Cooling	kW BTU/h	12.5 42,700	12.5 42,700	16.0 54,600	16.5 56,300	16.5 56,300
Heating	kW BTU/h	12.5 42,700	12.5 42,700	16.0 54,600	16.5 56,300	16.5 56,300
EER/COEP	WW/W	5.08	5.08	4.61	4.61	4.27
Dimensions H x W x D	mm	946 x 960 x 370	946 x 960 x 370	946 x 960 x 370	946 x 960 x 370	946 x 960 x 370
Net weight	kg	106	106	106	106	106
Electrical ratings	Running current A	11.90 11.40 10.90	3.69 3.56 3.46	15.20 14.50 13.90	4.91 4.67 4.50	18.10 17.30 16.60
Cooling	Power input kW	2.38 2.38 2.38	2.38 2.38 2.38	3.04 3.04 3.04	3.04 3.04 3.04	3.63 3.63 3.63
Heating	Power input kW	10.60 10.10 9.70	3.47 3.29 3.18	15.20 14.60 14.0	4.93 4.68 4.51	16.20 15.50 14.90
Starting current	A	2.10 2.10 2.10	2.10 2.10 2.10	3.05 3.05 3.05	3.05 3.05 3.05	3.25 3.25 3.25
Air flow rate	m ³ /min	69	69	72	72	74
Refrigerant amount at shipment	L/s	1.150	1.150	1.200	1.200	1.233
Piping connection	mm (inches)	R410A 6.70	R410A 6.70	R410A 6.70	R410A 6.70	R410A 6.70
Ambient temperature operating range	mm (inches)	015.88 (05/8)	015.88 (05/8)	015.88 (05/8)	015.88 (05/8)	015.88 (05/8)
Cooling	Normal mode	09.12 (03/8)	09.12 (03/8)	09.12 (03/8)	09.12 (03/8)	09.12 (03/8)
Heating	Normal mode	09.12 (03/8)	09.12 (03/8)	09.12 (03/8)	09.12 (03/8)	09.12 (03/8)
Sound pressure level (Cooling)	dB(A)	52.0	52.0	53.0	53.0	54.0
Sound pressure level (Heating)	dB(A)	45.0	45.0	46.0	46.0	47.0
Sound power level (Cooling)	dB	69.0	69.0	71.0	71.0	73.0

* As a foot print.

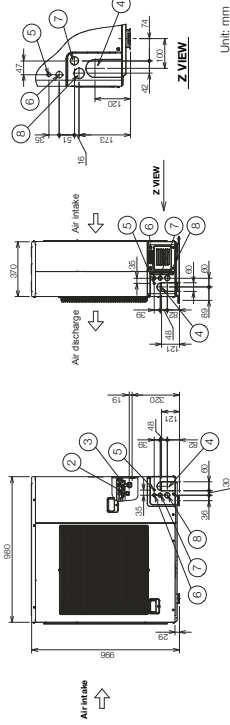
** High durable model (with suffix "E") has same specifications.

Dimensions

U-4LE2H4 / U-4LE2H7
U-5LE2H4 / U-5LE2H7
U-6LE2H4 / U-6LE2H7



When using a drain pipe, install the drain model unit with the drain cap.



Unit: mm

2-WAY Mini-FSV LE1 Series

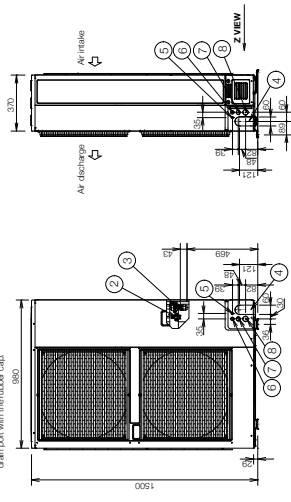
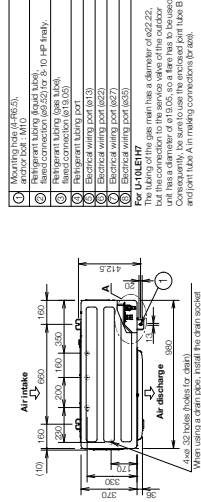
HP	8	8	10
Model name	U-8LE1H7	U-8LE1H7	U-10LE1H7
Power supply	380/400/415V/3-phase/50Hz	380/400/415V/3-phase/50Hz	380/400/415V/3-phase/50Hz
Voltage	380V	400V	415V
Capacity	kW BTU/h	22.4 76,500	28.0 96,000
Cooling	kW BTU/h	25.0 85,300	28.0 96,000
Heating	kW BTU/h	25.0 85,300	28.0 96,000
EER/COEP	WW/W	4.20	3.59
Dimensions H x W x D	mm	1,500 x 960 x 370	1,500 x 960 x 370
Net weight	kg	132	133
Electrical ratings	Running current A	8.70	8.25
Cooling	Power input kW	5.33	5.33
Heating	Power input kW	5.33	5.33
Starting current	A	5.53	5.53
Air flow rate	m ³ /min	150	160
Refrigerant amount at shipment	L/s	2.500	2.667
Piping connection	mm (inches)	R410A 6.30	R410A 6.60
Ambient temperature operating range	mm (inches)	019.05 (03/4)	022.22 (07/8)
Cooling	Normal mode	09.52 (03/8)	09.52 (03/8)
Heating	Normal mode	09.52 (03/8)	09.52 (03/8)
Sound pressure level (Cooling)	dB(A)	59.0	62.0
Sound pressure level (Heating)	dB(A)	52.0	55.0
Sound power level (Cooling)	dB	80.0	83.0

* As a foot print.

** High durable model (with suffix "E") has same specifications.

Dimensions

U-8LE1H7 / U-10LE1H7



Unit: mm

24-hour nanoe™ X Air protection*

While the general filters in air purifiers are effective against airborne bacteria and viruses, nanoe™ X also works to inhibit longer-living, adhered bacteria and viruses. As well as this, the Panasonic Comfort Cloud and WLAN smart adaptor (CZ-CAPWFC1) gives you access to your air conditioner anywhere, anytime, so you can turn nanoe™ X on even while you're out and enjoy 24-hour quality air.



Glass surface
Virus lifespan
up to 4 days**

Wood
Virus lifespan
up to 2 days**

Adhered Viruses
Last up to
2-7 days**

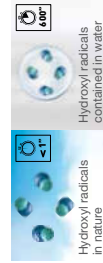
*Unit must be constantly turned on and operating in the air purification mode - nanoe™ X
** <https://www.businessinsider.com/coronavirus-lifespan-on-surfaces-graphic-2020-3>

What is unique about nanoe™ X ?



① Huge Quantity

9.6 trillion hydroxyl radicals are generated per a second, inhibiting bacteria and adhered viruses. (nanoe X Generator Mark 1 generates 4.8 trillion hydroxyl radicals/ sec)



② Longer lifespan

By creating hydroxyl radicals contained in water, nanoe™ X technology, increasing hydroxyl radicals lifetime so that nanoe™ X can spread over long distance.

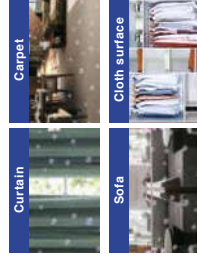


③ Actively fill in the room

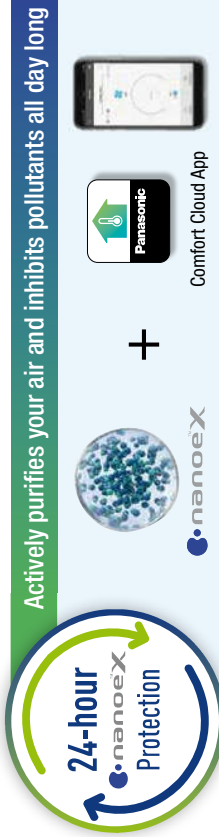
Going beyond standard filter technology, hydroxyl radicals circulate throughout rooms inhibiting both airborne and adhered bacteria and viruses.

Effective on Adhered Pollutants

Nano-sized (5-20 nm) nanoe™ X penetrates deep into fabrics and deodorises, inhibits bacteria, viruses, mould, allergens, pollen and hazardous substances. nanoe™ X extensively spread out through the room to inhibit adhered pollutants adhering to surfaces, while air filters only collect airborne dust but adhered substances.



24hr nanoe™ X comfort, wherever you, anywhere, anytime



Get 24 hr Quality Air for you and your loved ones by turning nanoe™ X on using Panasonic Comfort Cloud even when you're out. nanoe™ X functions in both cooling and heating modes and is maintenance-free, helping you keep your costs down with cleaner air.

Clean air independently when you are away
(Fan Mode + nanoe™ X ON)

Comfort and Clean air when you are at home
(Cooling or Heating Mode + nanoe™ X ON)



*1 Wireless LAN Remote Control for Internet Connection required optional network adaptor.
*2 Indoor temperature display and some special function are not available through the App for some models.
*3 Energy consumption may vary depending on models and the external static pressure.

- nanoe™ X functions in cooling/heating as well as fan mode after business hours.
- Cleans indoor air even when the space is not in use.
- No need to consume excessive electricity to clean the air.



nanoe™ X cleans indoor air while maintaining a comfortable temperature when people are present.

After business hours, nanoe™ X keeps cleaning indoor air in fan mode.

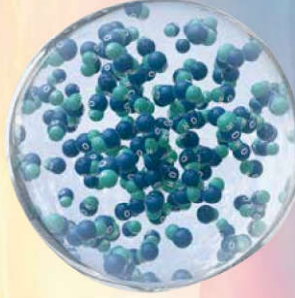
*In case of using 2.2kW-7.3kW 4 way cassette models with fan tap L, flap position 5, standard panel. Energy consumption may vary depending on models.

Bringing nature's balance indoors

nanoe™ X, technology with the benefits of hydroxyl radicals

The well-being benefits of nature are well known - but do you know the power of hydroxyl radicals?

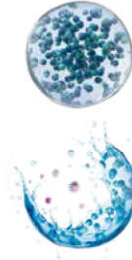
Abundant in nature, hydroxyl radicals (also known as OH radicals) inhibit pollutants, viruses and bacteria to clean and deodorise. nanoe™ X technology brings these incredible benefits indoors by containing hydroxyl radicals in water, so that hard surfaces, soft furnishings and the indoor environment can be a clean and pleasant place to be, whether at home, at work, or visiting hotels, shops, restaurants etc.



Hydroxyl radicals contained in water

A naturally occurring process

Hydroxyl radicals are unstable molecules looking to react with other elements like hydrogen molecules of pollutants, capturing it. Thanks to this reaction, hydroxyl radicals inhibit the growth of pollutants such as viruses, bacteria, moulds, and odours, breaking them down and neutralising the unpleasant effects. This naturally occurring process has major benefits to improve indoor environments.



Bringing nature's balance indoors
nanoe™ X, technology with the benefits of hydroxyl radicals

nanoe™ X, technology with the benefits of hydroxyl radicals

Panasonic's nanoe™ X technology takes a step further and brings nature's detergent - hydroxyl radicals - indoors to help create an ideal environment.

By creating hydroxyl radicals contained in water, nanoe™ X technology significantly boosts their effectiveness, increasing hydroxyl radicals lifetime from less than a second in nature, to more than 600 seconds – 10 minutes.

<https://www.panasonic.com/global/consumer/clean/hydroxyl/technology.html>



Hydroxyl radicals in nature



Hydroxyl radicals contained in water - nanoe™ X

Effectiveness of nanoe™ X

nanoe™ X deodorises, inhibits bacteria & viruses, mould, allergens, pollen and hazardous substances, as well as moisturising the whole room for smoother skin and hair.



Thanks to the nanoe™ X properties, several types of pollutants can be inhibited.



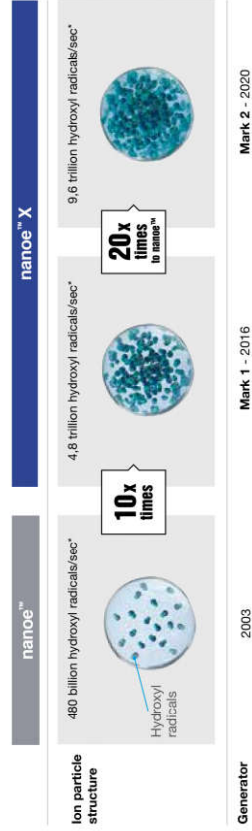
nanoe™ X reliably reaches pollutants.

Hydroxyl radicals transform pollutants' proteins.

Pollutants activity is inhibited.

The evolution of nanoe™ X technology

After annual R&D investments, the technology has been improved with launch of nanoe™ X.



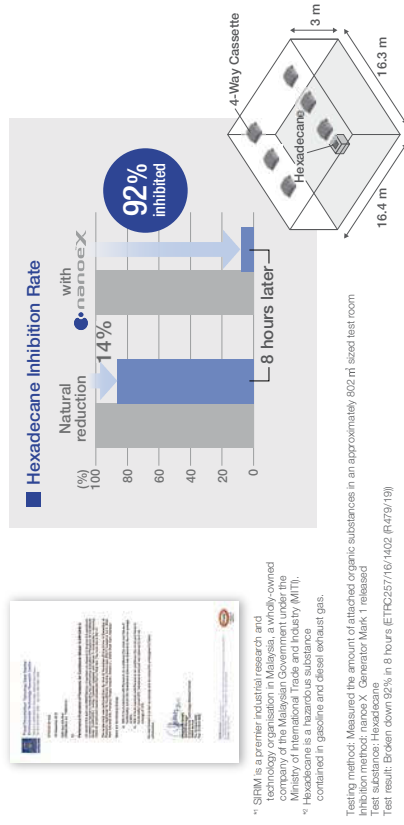
* Measured using ESR method

Verification tests for nanoeTM X effects in large spaces



The nanoe™ X inhibited hexadecane, a chemical contained in PM2.5 (267 m²)

A third-party certification organization SIRIM Berhad (SIRIM)*¹, conducted the performance experiment using a 4-Way Cassette equipped with a nano™ X device to inhibit hexadecane², a chemical contained in PM2.5.



The nanoe™ X reduced the odours adhering to fibers such as curtains and carpets (139 m²)

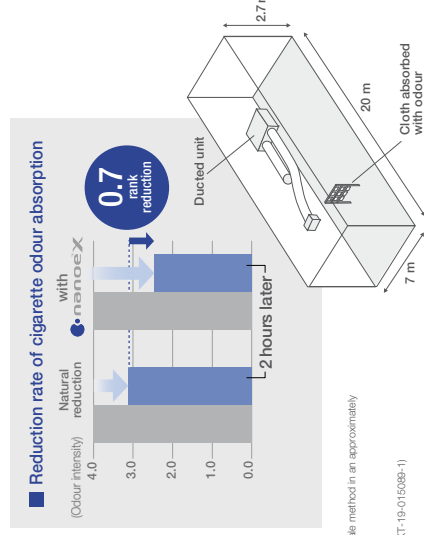
Cigarette smoke odour

Results

Compared to natural reduction, the nanoe™ X blast reduced the odour intensity by more than approximately 0.7 after two hours.

Testing organization

KAKEN TEST CENTER General
Incorporated Foundation in Japan,
international testing institute.



Testing method: Verified using the six-level odour intensity scale method in an approximately 378 m³ sized test room
Inhibition method: nanoe X Generator Mark 2 released
Test substance: Surface-attached cigarette smoke odour
Test result: Odour intensity reduced by 0.7 levels in 2 hours (KT-19-015089.1)

The effects of nanoe™ X are recognised by experts in each field



**Professor
Masafumi
Mukamoto**
Osaka Prefecture University
Veterinary Infectious
Disease Studies



Various types of moulds enter houses along with people and air. Even if preventive action is taken in our everyday lives, it is often very difficult to inhibit the growth of mould, especially in humid environments. With nanosTM X₂, we have experimental results⁴¹⁻⁴³ that show we can inhibit the growth of the types of mould and bacteria commonly found in various places in the house.

Hope for the creation of more comfortable spaces for those who have problems with asthma or atopic dermatitis



**Professor
Masahiro
Sakaguchi**
Azabu University
School of Veterinary Medicine
Laboratory of Veterinary
Microbiology I



We have experimental results that show nanoe™ X is capable of inhibiting allergens, such as pollen and dust mites. It is important to take precautions against the allergens that we inadvertently inhale in our daily lives.

As nanoe™ X is effective in inhibiting invisible allergens, we can expect it will create a cleaner environment. As the safety of nanoe™ X has also been verified, nanoe™ X gives peace of mind to families with small children.

[illegible]

Smart comfort with CONEX

CONEX goes beyond simple remote control to combine sophistication with simplicity, offering IoT integration that connects directly to a variety of apps for next-generation solutions.

Simple and sophisticated design in-and-out

User friendly interface with stylish design measuring just 86 x 86 mm, CONEX is an extremely compact remote controller which perfectly matches with all kinds of modern building.

Easy control and access for end users and installers with just one remote

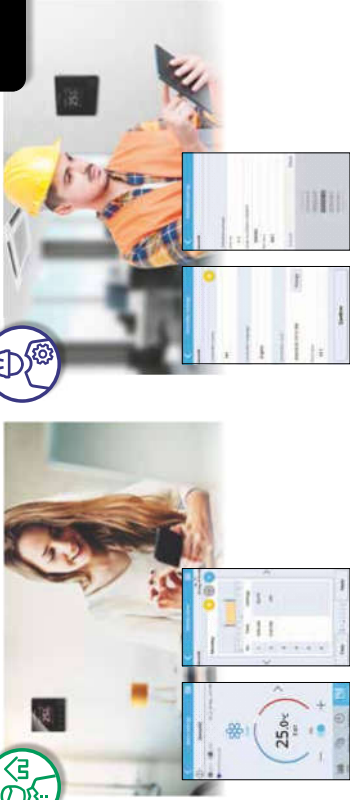
User-friendly day day-to-day operation for end users and simplified set up for installers.

A next-generation remote control solution optimised for usability



True-comfort for end user and installer – H&C Control App

H&C Control App makes complex initial set-up visually touch and feel easy and respond swiftly to clients' requests via Bluetooth using a smartphone or tablet.



Advantages

Comfort day-to-day operations

It's now simpler than ever for end users to further customize settings to meet their needs and perform operations including basic settings.

Intuitive operation for easy configuration

Simplifies initial controller configuration as well as access to comprehensive settings including weekly timers and maintenance.

Straightforward suggestions to clients

Share a single screen with your customer and together tailor everything to meet their needs, from basic setup to weekly timers, all in real time.

Quicker configuration for multiple controllers

Save time and copy templates for weekly timers and settings to multiple remote controllers.



Indoor Units

Wide choice of models depending on the indoor requirements

Key Indoor Units Equipped DC motors



ECONAVI sensor



Providing outstanding energy-saving performance, Panasonic's Inverter VRF System can be connected to ECONAVI to detect when energy is being wasted. ECONAVI senses the presence or absence of people and the level of activity in each area of an office. When unnecessary heating or cooling is detected, indoor units are individually controlled to match office conditions for energy-saving operation.



Detection of the level of activity enables optimum power saving

Activity or absence of people at their desks and the level of activity in the office are detected in real time. Cooling or heating is automatically adjusted for optimum operation required to lower power consumption.

Sensor is remotely located to maximize the energy saving effect

Pillars, walls, cabinets and other fittings obstruct the sensors, reducing the area of detection and lowering the energy-saving effect. Taking into consideration blind spots, Panasonic enables the optimum layout for sensors in any office.



ECONAVI Sensor
CZ-CZNSC1

High-spec wired remote controller



CZ-RTC5B

Large 3.5" full-dot LCD with white LED backlight

Characters and icons are clearly displayed for improved visibility. The display is also large enough to provide a wide range of information for easy confirmation of operation conditions.



Stylish, easy-to-use touch key design

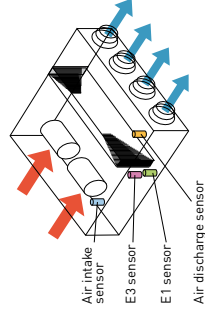
The elegant, flat design features large touch keys in a simple layout enabling easy, intuitive operation.



All ducted series / F3, F2, M1, Z1, E2, E1, H1, type

Discharge air temperature control

Smart sensors control discharge air temperature for precise room temperature control. Possible to reduce cold drafts during heating operation.



Wall mounted / K2 type



Compact design with flat surface enables seamless match with any type of room interior

Noise reducing external valve kit

To reduce noise level of expansion valve.

(Optional accessory)

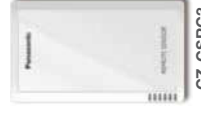


CZ-P65SVK2 (for 22 - 56 type)

CZ-P105SVK2 (for 73 - 106 type)

*When the pipe diameter is Liquid 20.35" (Gas) 0.12.7, please use CZ-P65SVK2.

Remote temperature sensor



CZ-CSRC3

- This is a remote sensor which can be used with indoor units. Use it to detect the room temperature when no remote controller sensor or body sensor is used (connection to a system without a remote controller is possible).
- For joint use with a remote control switch, use the remote control switch as main remote controller.

Wide choice of models depending on the indoor requirements

Wide choice of models depending on the indoor requirements

Cass	22	28	36	45	56	60	73
Capacity kW BTU/h	2.2/5 7,500/5,000	2.8/6.2 9,600/11,000	3.6/7.8 12,000/14,000	4.5/9.7 15,000/17,000	5.6/12.1 19,000/21,000	6.0/13.1 20,400/24,200	7.3/15.6 25,000/27,000
Type	F3 type nanoeX nanoe™ X as a standard F3 type	NEW !!! S-28MF3E5A	NEW !!! S-36MF3E5A	NEW !!! S-45MF3E5A	NEW !!! S-56MF3E5A	NEW !!! S-60MF3E5A	NEW !!! S-73MF3E5A
Mid Static Active Ducted	S-22MF2E5A	S-28MF2E5A	S-36MF2E5A	S-45MF2E5A	S-56MF2E5A	S-60MF2E5A	S-73MF2E5A
F2 type	S-22MA1TE5A	S-28MA1TE5A	S-36MA1TE5A	S-45MA1TE5A	S-56MA1TE5A	S-60MA1TE5A	S-73MA1TE5A
F2 Static Ducted	S-22MA2TE5A	S-28MA2TE5A	S-36MA2TE5A	S-45MA2TE5A	S-56MA2TE5A	S-60MA2TE5A	S-73MA2TE5A
M1 type	S-22MA1TE5A	S-28MA1TE5A	S-36MA1TE5A	S-45MA1TE5A	S-56MA1TE5A	S-60MA1TE5A	S-73MA1TE5A
Slim Low Static Ducted	S-22MA1TE5A	S-28MA1TE5A	S-36MA1TE5A	S-45MA1TE5A	S-56MA1TE5A	S-60MA1TE5A	S-73MA1TE5A
Z1 type	S-22MA2TE5A	S-28MA2TE5A	S-36MA2TE5A	S-45MA2TE5A	S-56MA2TE5A	S-60MA2TE5A	S-73MA2TE5A
Slim Low Static Ducted Twenty Series	S-22MA2TE5A	S-28MA2TE5A	S-36MA2TE5A	S-45MA2TE5A	S-56MA2TE5A	S-60MA2TE5A	S-73MA2TE5A
E2 type							
High Static Ducted / Energy Saving High-Fresh Air Ducted							
E1 type							
High Static Ducted							
H1 type							
High Fresh Air Ducted							
K2 type							
Wall Mounted							
nanoeX nanoe™ X as a standard U2 type							
4-Way Cassette Panel No. CZ-K3H4 Panel No. CZ-KP3A							
Y2 type							
4-Way Mini Cassette Panel No. CZ-KP3AW							
L1 type							
3-Way Cassette Panel No. CZ-K3H2 Panel No. CZ-K3H4 (Only for S-73ML1E5)							
D1 type							
1-Way Cassette Panel No. CZ-KP02							
T2 type							
Ceiling							
P1 type							
Floor Standing							
R1 type							
Concealed Floor Standing							

* High fresh air system is not allowed for 18 kW model, ** Only for CZ-KPU3A

