Panasonic

- 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 August 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

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AC-MSIA-C-21

Panasonic

RESIDENTIAL AIR CONDITIONERS 2021/2022





X-PREMIUM INVERTER R32



X-DELUXE INVERTER R32

nanoeX · Panasonic Comfort Cloud App · Auto X Intelligent. Dynamic. Cool. · Humidity Sensor · Inverter

QUALITY AIR FOR LIFE

A Better Life, A Better World

QUALITY AIR FOR LIFE



Quality air has been a prime concern of many in today's world. While we spend most of our time indoors, we often take the perception that indoor air is cleaner than the outside air.

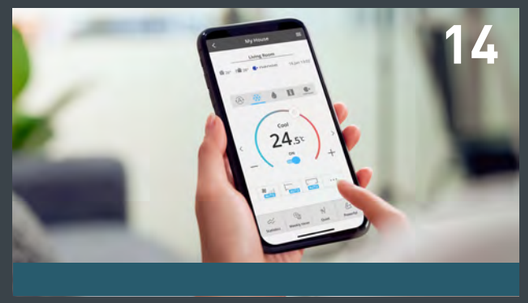
Panasonic is committed to advance frontiers through air quality improvement with "Quality Air For Life" initiatives and bring a great range of air solutions to mitigate indoor air concerns. Quality Air For Life solutions aim to deliver comfortable, clean air and clean energy solutions through four different enabling technologies: Air Purification, Air Conditioning, Air Connectivity and Air Ventilation.

Quality Air Solutions at Home

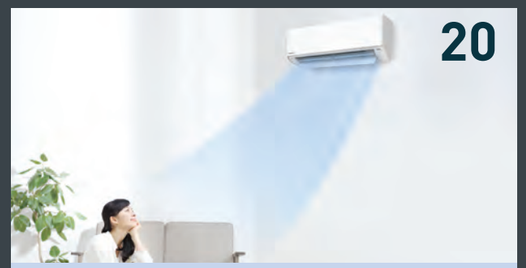
Panasonic offers a wide range of air conditioning solutions to purify and cool indoor spaces for comfort with energy efficiency for a lesser environmental impact. Connect with the Panasonic Comfort Cloud App that keeps you in touch with your home air conditioner remotely while you're away from home.



AIR PURIFICATION
Purifies air and surfaces 24 hours a day



AIR CONNECTIVITY
Stay connected and in control anywhere, anytime



AIR CONDITIONING
Comfortable cool air for you and your family



AIR EFFICIENCY
Eco-friendly and cost saving technologies for a sustainable living

EASY INSTALLATION AND SERVICING 30
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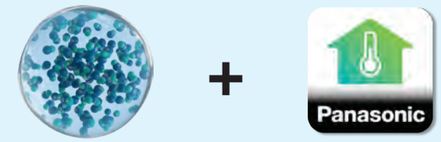


24-HOUR PROTECTION

with nanoe™ X + Comfort Cloud

Your health starts with you at home from the outside world. nanoe™ X with hydroxyl radicals contained in water helps families to ensure constantly clean and safe indoor environments by inhibiting bacteria, viruses, mould and other pollutants while deodorising for clean and fresh air.

Choose Panasonic air conditioners equipped with nanoe™ X and stay connected by downloading the Panasonic Comfort Cloud App* to manage your air conditioners with one device.



nanoeX
(Air Purification)

+

Panasonic
Comfort Cloud App
(Air Connectivity)



*A router with Internet connection is required to connect your air conditioner with the Panasonic Comfort Cloud App.
The CZ-TACG1 accessary is required for STANDARD INVERTER R32.
Built-in network adaptor is available for X-PREMIUM INVERTER R32 and X-DELUXE INVERTER R32.

Stay Safe Indoors with 24-Hour nanoe™ X Air Protection[1]

nanoe™ X technology with the benefits of hydroxyl radicals can effectively inhibit adhered and airborne pollutants, and reduce odours. You can switch ON nanoe™ X mode with the air conditioning operation ON or OFF to actively clean your air when you are at home or operate independently when you are away from home.

nanoe™ X mode operates on low energy consumption and requires no maintenance – thanks to the titanium-made nanoe™ X device. nanoe™ X keeps you and your family safe indoors with 24-hour active air protection.

nanoeX



Switch nanoe™ X mode ON to inhibit pollutants and deodorise while you're away.



Provides a cleaner and comfortable space for you and your loved ones.

*Energy consumption may vary depending on models.

Smartify Your Air Conditioner Anytime, Anywhere

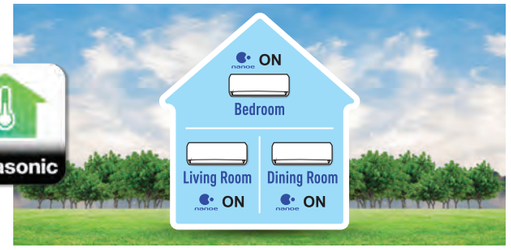
Take control of single or multiple air conditioning units wherever you are. Purify your home with the Panasonic Comfort Cloud App on your mobile device on-the-move.

Purify On-The-Go



Switch on nanoe™ X mode without cooling while away from home.

Control Single or Multiple Units



Convenience to monitor and manage the air conditioners with one mobile device.

[1] The nanoe™ X mode can be run independently from cooling mode, and needs to be ON for the 24-hour air purification to function.

Activate nanoe™ X All Day Long

Making your home a safe place to be. nanoe™ X works at all hours of the day to bring you pleasant mornings and comfortable nights. Giving you a peace of mind, in the comfort of your own home.

MORNING

WAKE UP REFRESHED



Kick start the day at breakfast with quality air that refreshes and energises your morning.

Odours | Allergens | Bacteria & Viruses

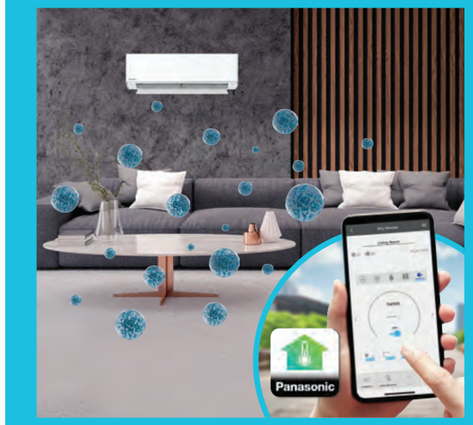
Cool + nanoe™ X



nanoe ON
Cool ON

NOON

AWAY FROM HOME



Control your home air conditioner remotely, with the Panasonic Comfort Cloud app to inhibit pollutants indoors, even when you are away from home.

Bacteria & Viruses | Hazardous Substances | Mould

nanoe™ X



nanoe ON
Cool OFF

24-hour nanoe™ X Protection

nanoe™ X + Panasonic Comfort Cloud App

EVENING

FAMILY EVENING MOMENTS



Return home to cooling and refreshing air as the air conditioner cools your home and nanoe™ X inhibits pollutants at the same time.

Odours | Pollen | Bacteria & Viruses

Cool + nanoe™ X



nanoe ON
Cool ON

NIGHT

PRECIOUS NIGHT SLEEP



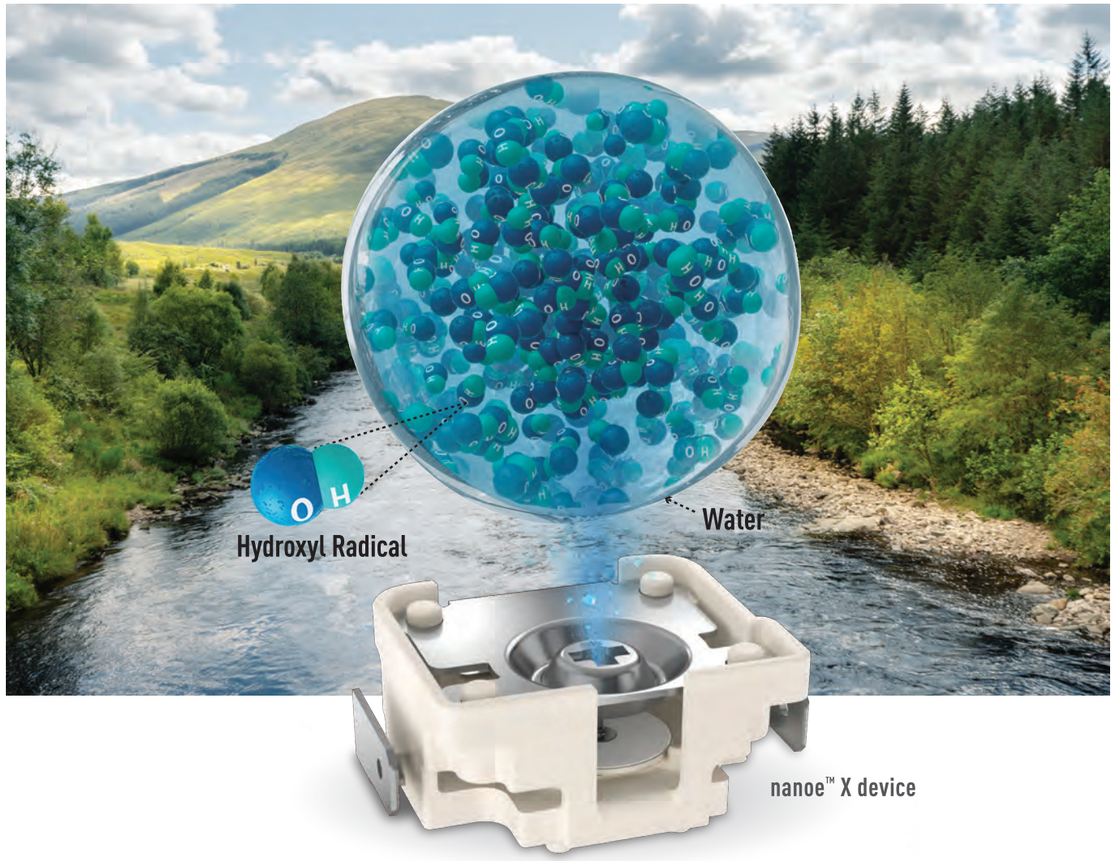
Enjoy a good night's sleep while nanoe™ X keeps your air clean and safe throughout the night. nanoe™ X also helps to moisturise skin and hair for a refreshing morning the next day.

Moisturise Hair & Skin | Bacteria & Viruses

Cool + nanoe™ X



nanoe ON
Cool ON



nanoe™ X, Technology with the Benefits of Hydroxyl Radicals

Known as nature's detergent, hydroxyl radicals (also known as OH radicals) are natural reactive molecules looking to react with other elements such as hydrogen. This reaction enables hydroxyl radicals to inhibit the growth of pollutants.

Panasonic's nanoe™ X technology brings these benefits to the comfort of your home to purify surfaces, soft furnishings and the indoor environment for a pleasant and comfortable living space.

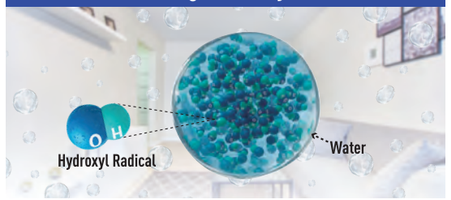
How the nanoe™ X device generates hydroxyl radicals contained in water?



1. Atomised electrode produces condensation.
2. Electrical discharge is applied to the water.
3. Hydroxyl radicals contained in water are generated and released to the room.

Uniqueness of nanoe™ X

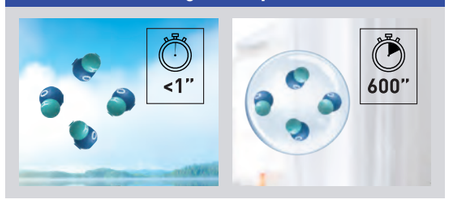
Huge Quantity



nanoe™ X produces 9.6 trillion hydroxyl radicals per second*. Large amounts of hydroxyl radicals contained in nanoe™ X lead to outstanding effects in inhibiting pollutants.

*nanoe X Generator Mark 2 generates 9.6 trillion hydroxyl radicals per second.
nanoe X Generator Mark 1 generates 4.8 trillion hydroxyl radicals per second.

Longer Lifespan



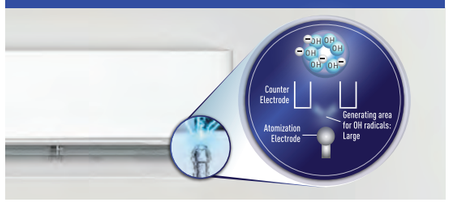
nanoe™ X technology creates hydroxyl radicals contained in water, enhancing their lifespan from less than a second to more than 600 seconds (10 mins) to spread across long distances.

Fills Space Actively



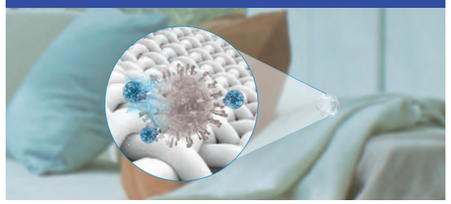
nanoe™ X actively fills the entire room and goes beyond the filter to inhibit adhered and airborne pollutants.

Maintenance-Free



No maintenance, no replacement required. nanoe™ X is a filter-free solution using a titanium-made atomised electrode that does not require maintenance.

Effective on Fabrics and Surfaces



Sized smaller than a steam droplet, nanoe™ X penetrates deeply into cloth fabrics to inhibit and deodorise effectively.

Safe to Use



The safety of nanoe™ X has been tested in labs and institutions.

Visit our website for a list of safety data:
www.panasonic.com/global/consumer/clean/hydroxyl/technology.html

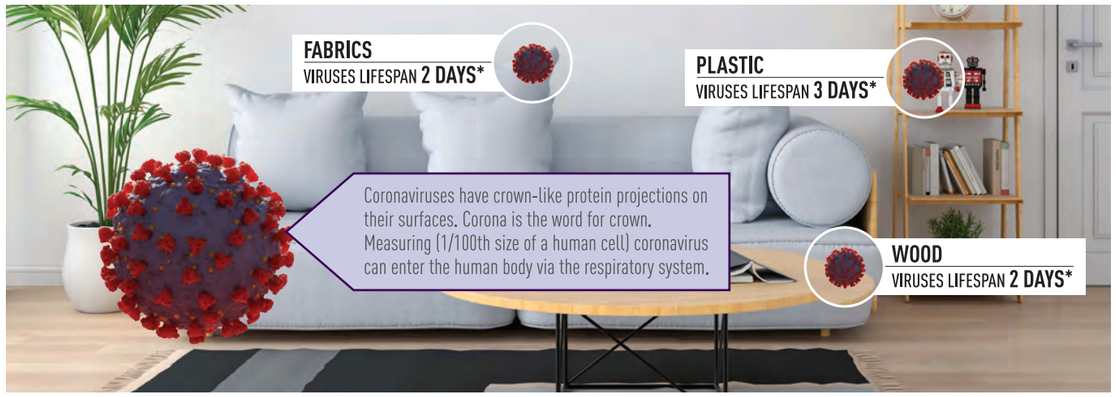
Asthma and Allergy Friendly



nanoe™ X is approved by Sensitive Choice, which helps consumers worldwide live better with asthma and allergies.

Sensitive Choice is a community service program that aims to educate people about the importance of managing their asthma and allergies. Developed by the National Asthma Council Australia in 2006, the program also encourages companies to produce products and services that are more asthma and allergy aware.

Panasonic and Sensitive Choice have partnered to introduce the nanoe™ X to the Asian market. Purifying your air 24 hours, the nanoe™ X feature can function independently or concurrently with your air conditioner. This market leading Air Sterilisation technology works towards the inhibition of bacteria, viruses, allergens, pollens and mould within your indoor environment, whilst deodorising, keeping your home or office fresh and clean. Panasonic & Sensitive Choice are committed to bring you Quality Air, for Life.



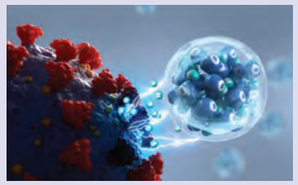
*Virus Lifespan: https://www.businessinsider.com/coronavirus-lifespan-on-surfaces-graphic-2020-3

Effective in Inhibiting Novel Coronavirus

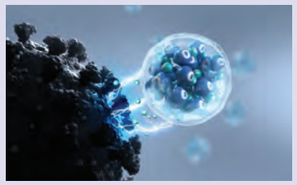
COVID-19 pandemic triggered by the Novel Coronavirus (SARS-CoV-2) has brought social distancing and constant sanitisation as the new normal in our daily lives. nanoe™ X enables you to engage in more proactive activities through active purification to inhibit coronavirus around the clock.

Inhibiting SARS-CoV-2 with nanoe™ X

nanoe™ X with hydroxyl radicals contained in water denatures the envelope's lipids and protein of viruses and inhibits it.



1 nanoe™ X reaches SARS-CoV-2.



2 Hydroxyl radicals inside the nanoe™ X remove hydrogen from the virus protein in the envelope.



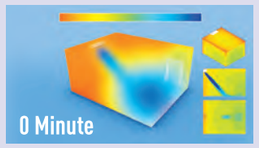
3 SARS-CoV-2 is inhibited, transforming the hydroxyl radicals into stable water molecules.

The Power of nanoe™ X

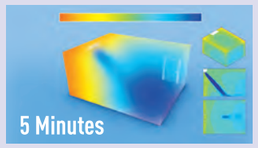
Featuring a long lasting lifespan and huge amounts of hydroxyl radicals contained in water, nanoe™ X has the ability to travel for widespread coverage, especially in large spaces of 54m³ to inhibit airborne and surface pollutants throughout the area.

nanoe™ X Concentration Simulation

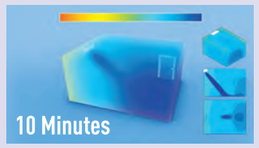
nanoe™ X concentration has been simulated in a 54m³ (4m x 5m x 2.7m) room to fill for a duration of 30 mins. The bluer the colour, the higher the nanoe™ X concentration.



1/4 of the room is filled



1/2 of the room is filled

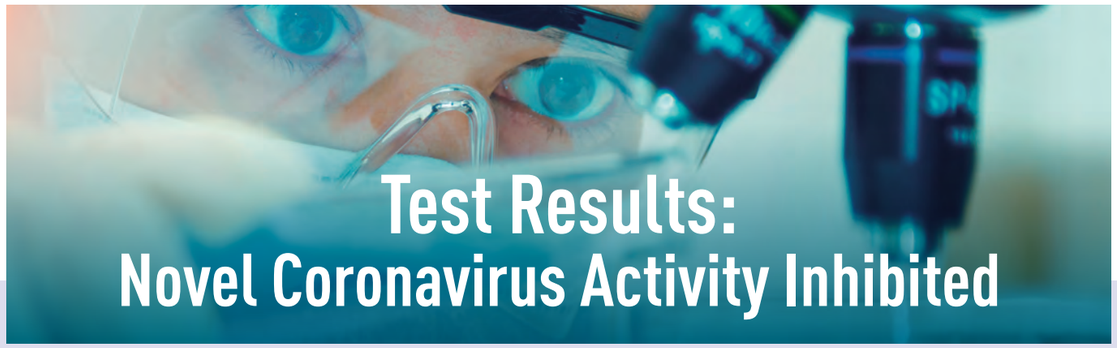


3/4 of the room is filled



Entire room is filled

*Photograph is for illustrative purposes.



Test Results: Novel Coronavirus Activity Inhibited

Overview

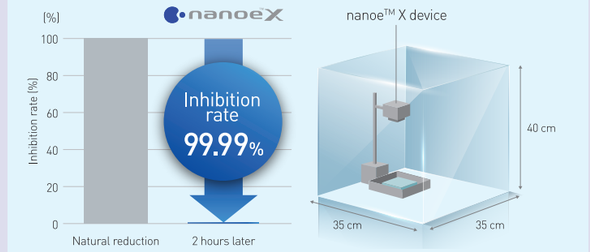
The objective of this test was to determine if nanoe™ X inhibits the activity of the SARS-CoV-2 virus. Gauze saturated with SARS-CoV-2 virus solution was exposed to a generator of nanoe™ X from a distance of 15cm in a 45L box for 2 hours. Over 99.99% of the activity of the SARS-CoV-2 virus was inhibited.

Details

(1) Testing organisation: TEXCELL (France)
(2) Test subject: novel coronavirus (SARS-CoV-2)
(3) Test volume: 45L enclosed box
(400 mm × 350 mm × 350 mm)
(4) Exposure time: 2 hours
(5) Exposure distance: 15cm

Test of a generator of nanoe™ X

Test results: SARS-CoV-2





Notes: (1) The virus infectious titer was measured and used to calculate the inhibition rate. (2) This verification was designed to generate basic research data on the effects of nanoe™ X on the novel coronavirus in laboratory conditions. It was not designed to evaluate product performance.

Overview

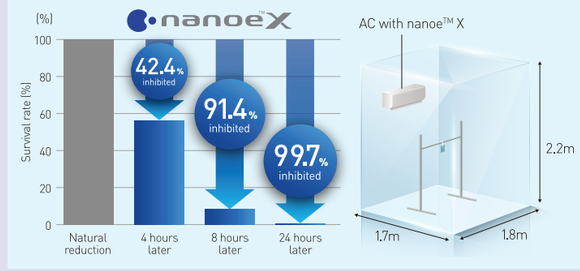
The objective of this test was to determine if nanoe™ X inhibits the activity of the SARS-CoV-2 virus. Gauze saturated with SARS-CoV-2 virus solution was exposed to an air conditioner with nanoe™ X from a distance of 0.7 m in a 6.7 m³ room for 8 hours. Over 91% of the activity of the SARS-CoV-2 virus was inhibited.

Details

(1) Testing organisation: Texcell (France)
(2) Test subject: novel coronavirus (SARS-CoV-2)
(3) Test volume: 6.7 m³ room
(1.7 m x 1.8 m x 2.2 m)
(4) Exposure time: 8 hours

Test of an air conditioner with nanoe™ X

Test results: SARS-CoV-2

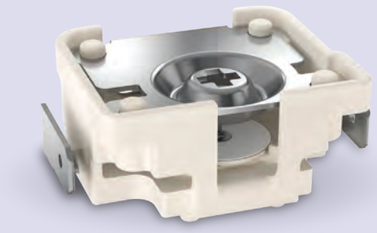




Notes: (1) The virus infectious titer was measured and used to calculate the inhibition rate. (2) This verification was designed to generate basic research data on the effects of nanoe™ X on the novel coronavirus in laboratory conditions. Actual effects will vary depending on the environment and usage of the product.

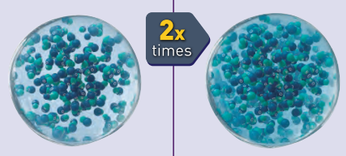
The Development of nanoe™ X Generators

Enhancing the effectiveness of hydroxyl radicals contained in water through every new and improved nanoe™ X generator.



nanoeX

Generator	Mark 1	Mark 2 NEW
Ion particle structure	4.8 trillion hydroxyl radicals/sec	9.6 trillion hydroxyl radicals/sec





7 Effects of nanoe™ X

nanoe™ X technology effectively inhibits 5 types of pollutants, deodorises and moisturises with the benefits of hydroxyl radicals contained in water.

Deodorises	Inhibits 5 Types of Pollutants					Moisturises
Odours	Bacteria & Viruses	Mould	Allergens	Pollen	Hazardous Substances	Skin & Hair

Deodorises Various Types of Odours


BBQ Odour


Sweat Odour


Cigarette Smoke Odour


Durian Odour

nanoe™ X reduces strong, adhesive odours[1] by deeply penetrating into fabrics, resulting in lasting freshness in your living space.

How nanoe™ X Reduces Odour



Inhibits 5 Types of Pollutants


Bacteria & Viruses


Mould

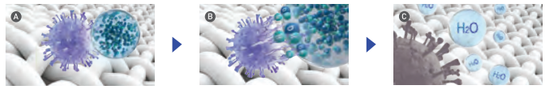

Allergens


Hazardous Substances

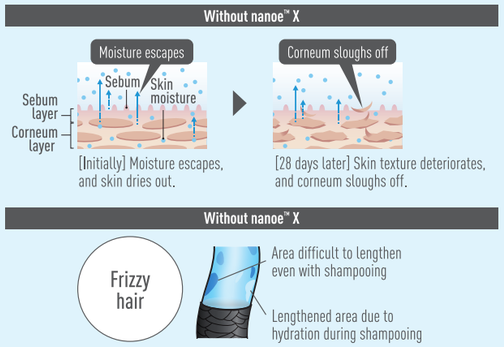

Pollen

nanoe™ X inhibits airborne and adhered pollutants[2], providing better air quality for your loved ones.

How nanoe™ X Inhibits Pollutants

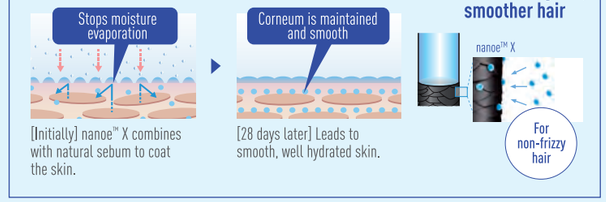


Moisturises Skin and Hair



nanoe™ X water particles help to achieve proper moisture balance, resulting in smooth, hydrated skin and hair[3].

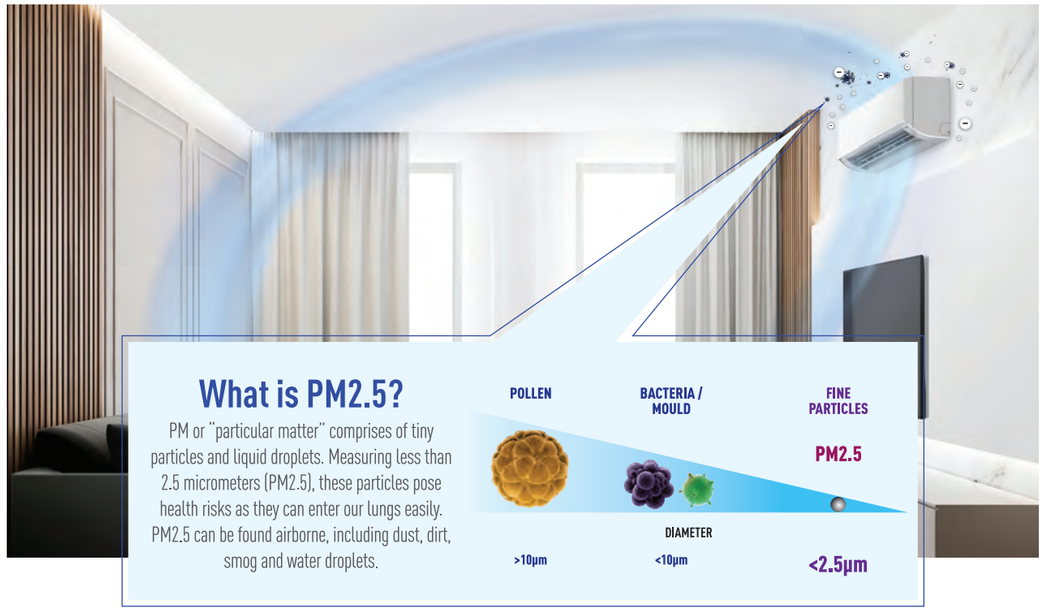
How nanoe™ X works



nanoe-G

Effective in removing 99% of dust particles[4], nanoe-G releases negative ions to capture dust particles sized as small as PM2.5, carrying them back to the filter to provide a clean and pristine living space.

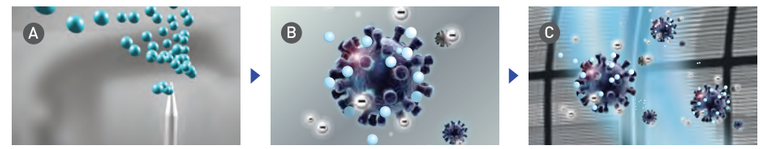
Dust Removal (PM2.5)



What is PM2.5?

PM or "particular matter" comprises of tiny particles and liquid droplets. Measuring less than 2.5 micrometers (PM2.5), these particles pose health risks as they can enter our lungs easily. PM2.5 can be found airborne, including dust, dirt, smog and water droplets.

How nanoe-G works



[1] Please refer to page 47 [2] Please refer to page 48 [3] Please refer to page 53 [4] Please refer to page 55



Manage at Ease Using Panasonic Comfort Cloud App

Bringing simplicity and convenience to your fingertips, Panasonic Comfort Cloud application gives you complete control of your air conditioning units anytime, anywhere.

The network adaptor enables your mobile device to act as a remote controller, synchronising with your air conditioner in a matter of seconds. Perfect for multiple air conditioning units in single and multiple locations.

NEW 2021 AIR CONDITIONERS WITH BUILT-IN NETWORK ADAPTOR



XU SERIES

XPU SERIES

Easy connectivity to Panasonic Comfort Cloud and removes the need to purchase and install optional network adaptor

AIR CONDITIONER WITH OPTIONAL NETWORK ADAPTOR



PU SERIES



Optional Network Adaptor (CZ-TACG1)

Optional network adaptor is required

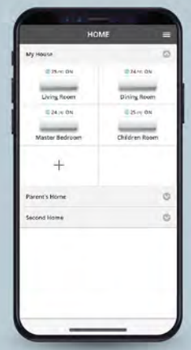
Smartify Your Air

Applicable for Residential Properties and Premises

SMART CONTROL

Control Multiple Air Conditioners in Single/Multiple Locations

Managing Air Conditioners in Single Location





Managing Air Conditioners in Multiple Locations







Monitor and control single and multiple air conditioners at one or more locations simultaneously anytime, anywhere with the Panasonic Comfort Cloud App. Switch ON or OFF all air conditioners at a single location also available at your convenience.

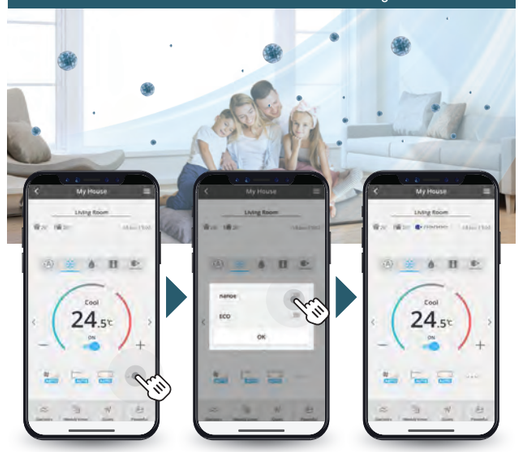
SMART COMFORT

Turn ON nanoe™ Mode

Switch on nanoe™ mode with cooling OFF



Switch on nanoe™ mode with cooling ON

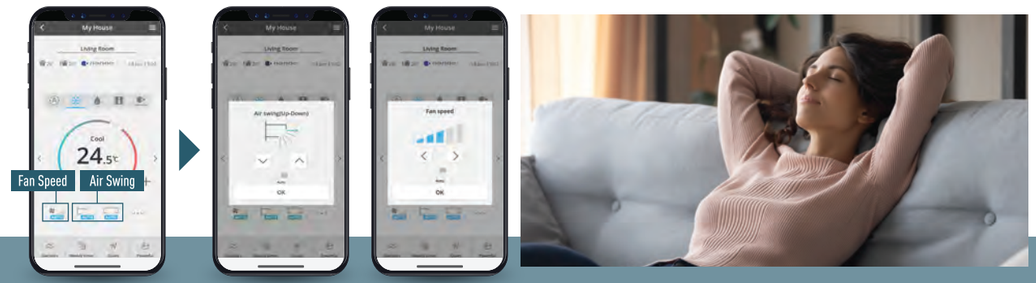


Switching Air Conditioner Mode



Activate iAUTO-X to enjoy rapid cooling on a hot day.

Adjust Fan Speed And Air Swing

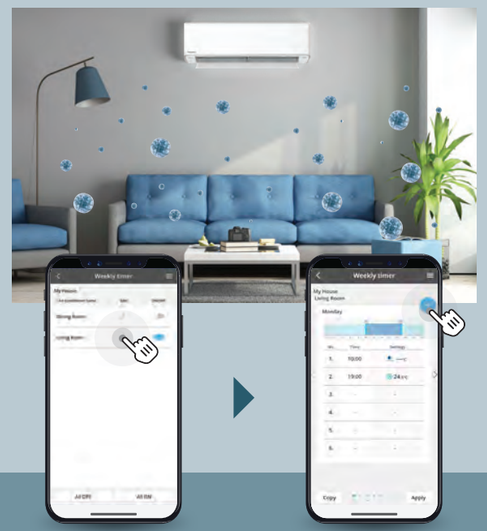


Enjoy comfortable cooling by adjusting the fan speed, air swing (up & down) or (left & right).

*Functions availability may vary depending on models.

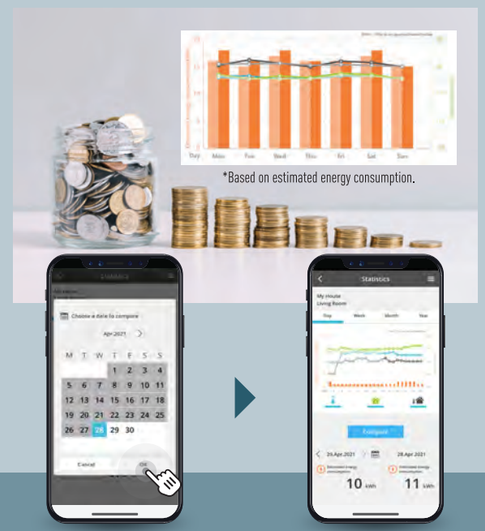
SMART EFFICIENCY

Set Timer



Schedule nanoe™ with cooling ON or OFF and pre-cool your house for you to enjoy clean air and comfortable cooling.

Track Energy Consumption



View energy consumption of individual units by comparing the usage patterns daily/weekly/monthly/yearly.

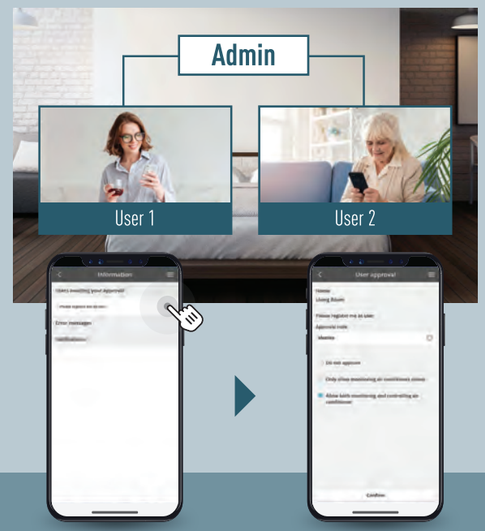
SMART ASSIST

Error Notifications



Identify errors by checking error notifications to inform your technician to repair your air conditioner quickly.

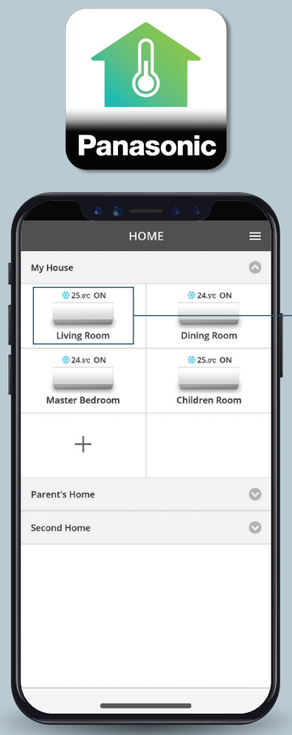
User Assignment & Management



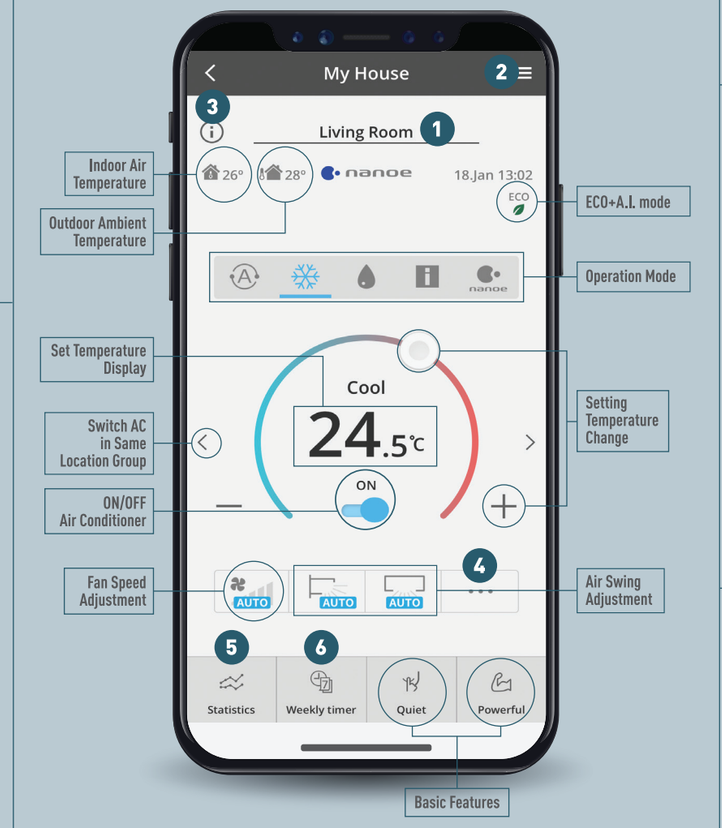
Assign user profiles to control or view selected air conditioning units.

Panasonic Comfort Cloud App

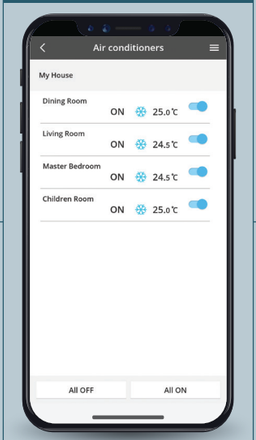
Main Function Overview



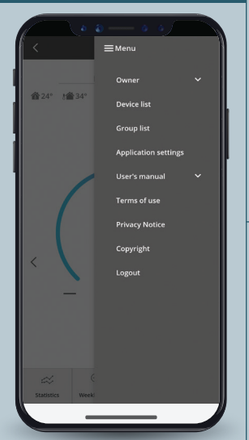
Main Device Screen



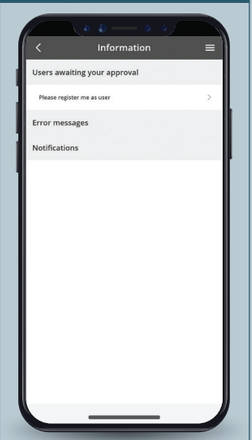
1 Group Status



2 Main Menu



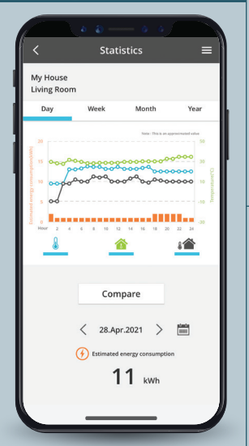
3 Notification



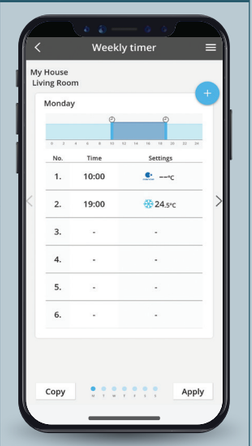
4 ON/OFF nanoe™ & ECO



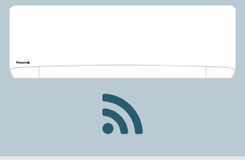
5 Statistics



6 Weekly Timer



Requirements for Connecting with Panasonic Comfort Cloud App



Indoor Unit-Network

Air Conditioner equipped with built-in network adaptor/CZ-TACG1 optional network adaptor connected to port CN-CNT[1]



Other Hardware Requirements*

Router - Internet - Smartphone
(Required 2.4GHz transmission channel)

*Purchase and subscribe separately

Download Free App

Compatible Device and Browsers

1. iOS 9.0 or above
2. Android™ 5.0 Lollipop or later

[1] For STANDARD INVERTER R32, you need accessory CZ-TACG1 connected to port CN-CNT. Built-in network adaptor is available for X-PREMIUM INVERTER R32 and X-DELUXE INVERTER R32.
*Screen capture based on current Comfort Cloud app version 1.12.0.



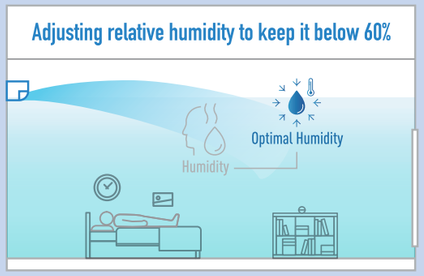
Problems Caused by High Humidity

A high relative humidity even with a low temperature may increase the risk of heat stroke. Causing discomfort and irregular sleep cycles.



Humidity Sensor Optimises An Ideal Sleeping Environment[1]

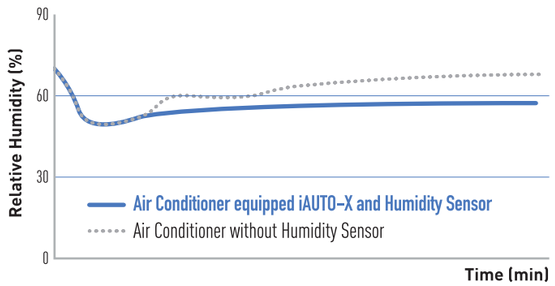
Panasonic's new iAUTO-X with the Humidity Sensor constantly monitors and adjusts relative humidity levels to below 60% for an optimal sleeping environment, so you can enjoy better sleep with comfortable cooling.





How Humidity Control Works

The new iAUTO-X with the Humidity Sensor constantly monitors and adjusts relative humidity to below 60% according to different environments with the set temperature that ensures a balanced cooling sensation throughout by reducing heat for optimal cooling.



*** Comparison of iAUTO-X Mode & normal COOL mode by using 1.5HP X-PREMIUM INVERTER Model**

iAUTO-X Mode:
iAUTO-X Mode, Outside temperature : 35°C/24°C
Remote setting temperature : 25°C, with Fan Speed: Auto
Horizontal Airflow direction : Auto
Vertical Airflow direction : Straight

Normal Cool Mode:
Cool Mode, Outside temperature : 35°C/24°C
Remote setting temperature : 25°C, with Fan Speed: High
Horizontal Airflow direction : Middle
Vertical Airflow direction : Straight

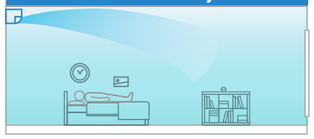
Average Room RH is measured every 1 hour up to 4th hour (under stable condition).
At Panasonic Amenity Room [size:16.6m²]
The effect differs according to conditions in installation and usage.

Air Conditioner Without The Humidity Sensor



Without the humidity sensor, relative humidity increases in the room during stable operation causing uncomfortable sleeping environments.

Air Conditioner Equipped With iAUTO-X And Humidity Sensor



The humidity sensor automatically controls relative humidity below 60% to remain stable and comfortable during bedtime.

Balancing Temperature and Humidity for Comfort

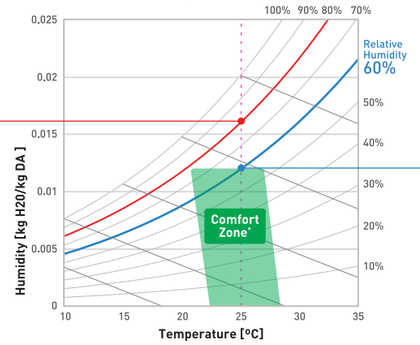
With lower humidity at the same temperature, the room will feel more comfortable and cooler compared to higher humidity.

Humidity Heat Index

Temperature: 25°C
Relative Humidity: 80%

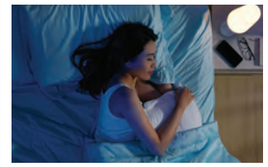


At set temperature of 25°C, the room feels uncomfortable in high humidity.



Comfort zone defined by ASHRAE STANDARD.
*ANSI/ASHRAE Standard 55-2010

Temperature: 25°C
Relative Humidity: 60%



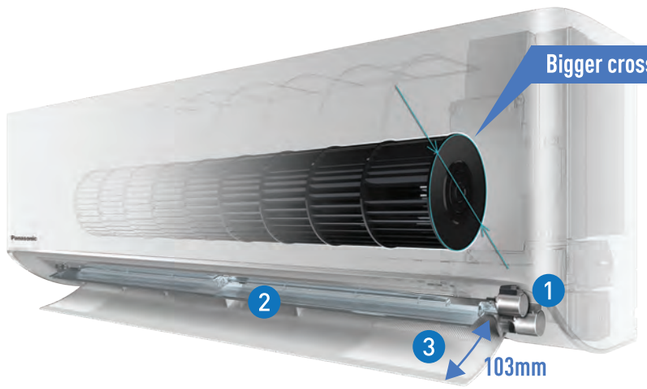
At set temperature of 25°C, the room feels more comfortable when the relative humidity is below 60%.

[1] Applicable to X-PREMIUM INVERTER R32 only.



15 Meters Long Air Distance with The Improved New AEROWINGS[1]

Evolving to provide fast and cooling comfort, the New AEROWINGS incorporates two independently controlled flaps to cool the room in the shortest time possible with a bigger cross flow fan (105mm) and flap (103mm), improving the ability to lift air speed efficiently.



The new AEROWINGS provides longer airflow up to 15 meters with increased airflow by 10% and air speed by 20%[2].

1 2 Independent Motors
Control the Sub-Flap and Bigger Outer Flap separately.

2 Sub-Flap
Compresses and concentrates cool air.

3 Bigger Outer Flap (103mm)
Helps to deliver airflow further.

[1] Applicable to X-PREMIUM INVERTER R32 only. [2] Compared to previous PREMIUM model (1.5HP)

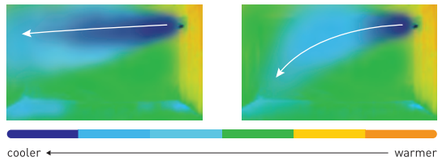
NEW AEROWINGS



Shower Cooling
Shower airflow spreads fast, cool and concentrated air across room and to the wall, then showers down gently.

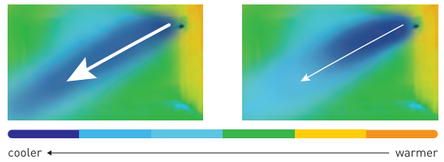
Fast Cooling
AEROWINGS twin flaps direct concentrated airflow downwards to cool you rapidly.

Shower Cooling Airflow Assessment



The New AEROWINGS provides stronger and cooler air further up to 15 meters and directs airflow more upwards towards the ceiling to avoid direct and over cooling.

Fast Cooling Airflow Assessment



The New AEROWINGS directs concentrated airflow downwards for instant cooling. The room is cooled faster with stronger and cooler air.

Efficient Airflow with Location Information Setting

Store and set the location of your installed air conditioner unit using the remote controller. Based on location information, airflow will be automatically optimised, sending airflow to the centre of the room. This gives more flexible installation options and efficient cooling enjoyment to its full potential with location information setting.

With location information

Air flows at the centre to cool evenly.



Without location information

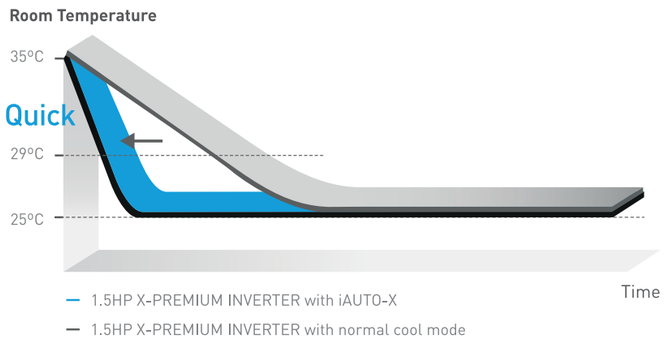
Air flows unevenly, reducing cooling efficiency.





Faster Cooling with iAUTO-X[1]

iAUTO-X provides strong faster cooling through the use of Panasonic Thermal Enhancement Technology (P-TECh) enabling the compressor to achieve maximum frequency quickly from start-up.
With the new iAUTO-X function, you can reactivate iAUTO-X for faster cooling even after reaching stable temperatures.



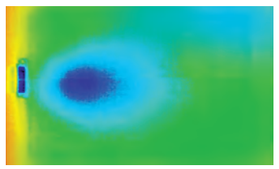
* Comparison of iAUTO-X Mode & normal COOL mode by using 1.5HP X-PREMIUM INVERTER Model

iAUTO-X Mode:
iAUTO-X Mode, Outside temperature : 35°C/24°C
Remote setting temperature : 25°C, with Fan Speed: Auto
Horizontal Airflow direction : Auto
Vertical Airflow direction : Straight

Normal Mode:
Cool Mode, Outside temperature : 35°C/24°C
Remote setting temperature : 25°C, with Fan Speed: High
Horizontal Airflow direction : Middle
Vertical Airflow direction : Straight

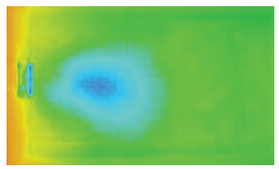
Total time needed to cool down the room from 35°C to 29°C is measured.
At Panasonic Amenity Room [size:16.6m²]
The effect differs according to conditions in installation and usage.

New iAUTO-X

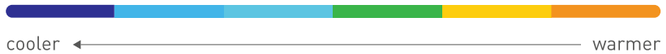


Concentrated airflow cools instantly. Room is evenly cooled.

Normal Cool Mode



Cool air blows downwards and cools the room at a slow pace, resulting in uneven cooling.



Uniqueness of iAUTO-X

Automatic Fan Speed

iAUTO-X automatically switches fan speed to medium fan speed, high fan speed and super high fan speed depending on the temperature difference between the room and set temperature.

MEDIUM FAN SPEED
HIGH FAN SPEED
SUPER HIGH FAN SPEED

Flap Movement

After reaching the set temperature, the flap moves upwards automatically to perform shower cooling for an even cooling sensation at the set temperature avoiding direct cooling towards the body.

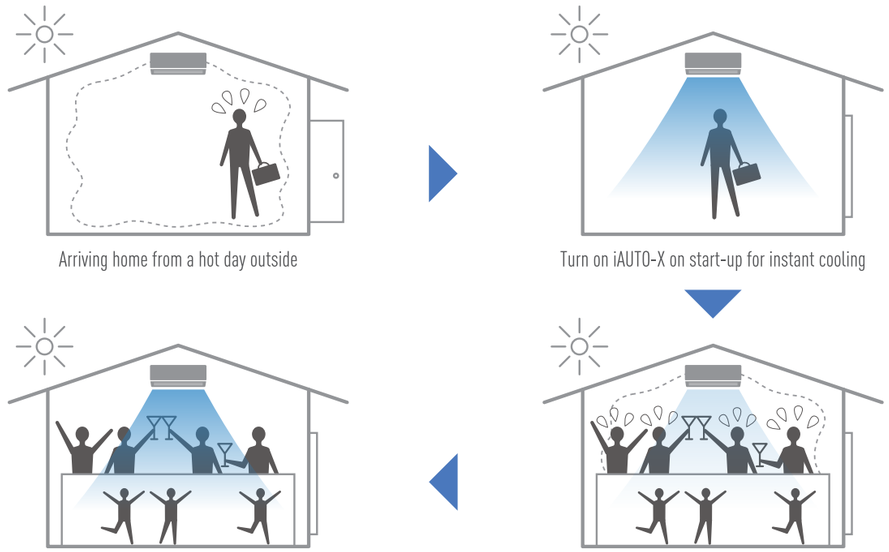


Reactivate iAUTO-X





Reactivate faster cooling with a second press of the iAUTO-X button!



[1] Applicable to X-PREMIUM INVERTER R32 only.



Better Living, Together with Eco-Friendly Technologies

Panasonic's Air Efficiency provides a sustainable living environment with technologies that reduce carbon emissions into the Earth's atmosphere whilst saving costs on the use of electricity, providing an eco-friendly solution for you and the environment.

Enjoy intelligent cooling with eco-friendly features such as reduced power usage, adjusted cooling power and efficient energy usage for better savings and energy consumption that's good for both you and the environment, altogether.

INVERTER CSPF R32 REFRIGERANT ECO+A.I.

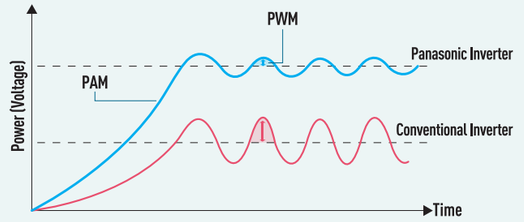


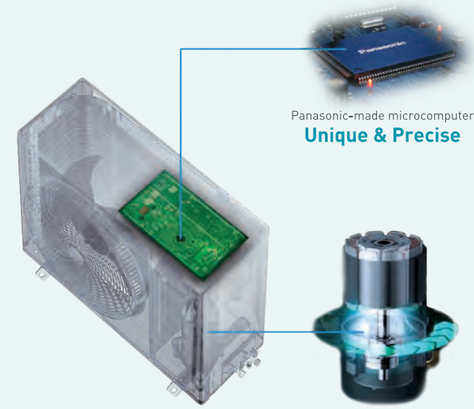
Powerful Performance with Efficiency

Panasonic's Inverter reduces power consumption by varying the speed of the compressor according to the temperature changes with the aim of minimising the temperature fluctuations so you can enjoy consistent cooling comfort.

Quick Cooling and Constant Comfort

PAM (Pulse Amplitude Modulation) increases the power output to accelerate compressor speed at start up for quick cooling and PWM (Pulse Width Modulated Wave) stabilises the set temperature without wasting energy, offering constant comfort.





Panasonic-made microcomputer
Unique & Precise

Panasonic-made compressor
Gentle & Powerful

Benefits of Inverter Technology

The energy-saving abilities of Inverters provide a host of benefits for your comfort, including fast cooling upon start-up, constantly maintaining a set temperature, a wider power output range and reduced noise levels.

- **Fast cooling at start-up**
- **Maintain a stable set temperature**
- **Wide output range**
- **Quiet operation**

Reasons to Choose Panasonic Inverter Air-Conditioner



Save on Your Electricity Bill

Panasonic inverter air conditioner prevents overcooling or overheating regardless of room size or condition.



Stay Cool Throughout the Day

A wide power output range for inverter air conditioner models provides a balanced comfort regardless of temperature fluctuations caused by the occupancy level or heat-generating appliances.



Cut Down on Waiting Time

With powerful and quick start-up, you no longer have to wait to experience refreshing comfort.

Learn more about Inverter Technology at
https://www.panasonic.com/my/consumer/home-appliances/air-conditioner-learn/features-explanation/inverter-technology.html

CSPF

Cooling Seasonal Performance Factor

Panasonic Air Conditioners not only achieved high EER for rated operations, but also have a high Cooling Seasonal Performance Factor - a more realistic energy efficiency measurement based on customer's actual environment of use over an entire year.

Calculating CSPF

$$CSPF = \frac{CSTL}{CSEC}$$

Cooling Seasonal Total Load (CSTL)
Total amount of heat that is removed from the indoor air when equipment is operated for cooling the building during the cooling season.

Cooling Seasonal Energy Consumption (CSEC)
Total amount of energy consumed by the equipment when it is operated for cooling during the cooling season.



The Advantages of Seasonal Efficiency VS Rated Efficiency

Factor	Nominal	CSPF
Temperature	One point of temperature conditions, e.g. outdoor temperature 35°C for cooling. In reality, outdoor temperature continuously changes.	Adopts several rating temperatures for cooling, reflecting actual performance over an entire cooling season.
Cooling Capacity	Calculates based on full capacity. Hence, it is difficult to justify the benefits of INVERTER technology.	Integrates operations at partial load instead of full capacity. Benefits of INVERTER can be easily identified.

R32 REFRIGERANT

An Environmentally-Friendly Refrigerant

R32 refrigerant is an excellent heat transfer medium which leads to greater energy and cost-effectiveness. It also has low global warming potential, hence it's friendlier to the environment.

HIGHER COOLING CAPACITY
R32 has **higher cooling capacity** thereby increases heat transfer efficiency.

REDUCE ENERGY COSTS
It consumes **less energy**, helping you to save on electricity costs.

ECO FRIENDLY
R32 has **zero impact** on the ozone layer, therefore it's environmental friendly.

Refrigerant Properties of R32, R410A and R22

	R32	R410A	R22
Composition	Single Component	2 Components	Single Component
Chemical Formula	CH_2F_2	CH_2F_2 / CHF_2CF_3	$CHCLF_2$
Boiling Point (°C)	-51.7	-51.5	-40.8
Ozone Depletion Potential (ODP)	0	0	0.055
Global Warming Potential (GWP)	675	2090	1810
Pressure	1.6 x	1.6 x	1x
Refrigerant Oil	Synthetic Oil (FW50S)	Synthetic Oil (FV50S)	Mineral Oil
Toxicity	None	None	None
Flammability	A2L Mildly flammable	A1 Non-flammable	A1 Non-flammable



Intelligently Balances Energy Savings and Comfort

As each room in your home is different, ECO Mode with Artificial Intelligence (A.I.) Control efficiently cools your room based on the amount of heat load and air conditioning capacity. It finds the perfect ECO balance between power consumption and time taken to reach the desired temperature to maintain your comfort with minimal energy waste.

ECO Mode with A.I. Control will automatically learn and judge what is the optimal ECO level based on:

1 Room condition

2 Heat Source can be due to:
(A) Sunlight and lighting in the room
(B) Computers and appliances
(C) Body heat

When Your Air Conditioner is Switched On



- Requires Fast Cooling

ECO Mode with A.I. prioritises on maximising cooling comfort while saving energy through ECO Mode.



- Does not require Fast Cooling

ECO Mode with A.I. prioritises on maximising energy savings over cooling comfort.

After Reaching Set Temperature



- Consistent comfort day or night
- Saves energy after reaching set temperature

ECO Mode with A.I. continues to save energy and automatically adjusts room temperature for consistent cooling comfort

How to switch on ECO Mode with A.I. Control

- Press ECO to switch ON ECO mode.
- Press ECO second time to cancel/switch OFF ECO mode.



UP TO 20%* ENERGY SAVING ECO+A.I.

*Comparison of ECO Mode & normal mode by using 1.5HP Inverter Model

ECO Mode:
ECO Mode, Outside temperature : 35°C/24°C
Remote setting temperature : 25°C, with Fan Speed: High.
Horizontal Airflow direction : Middle
Vertical Airflow direction : Straight

Normal Mode:
Normal Mode, Outside temperature : 35°C/24°C
Remote setting temperature : 25°C, with Fan Speed: High.
Horizontal Airflow direction : Middle
Vertical Airflow direction : Straight

Total power consumption amount is measured for 1 hour under stable operation.
At Panasonic Amenity Room (size : 13.3m²)
The effect differs according to conditions in installation and usage

* Applicable for models with ECO+A.I. function only.

CLOSE TO CEILING





CLOSE TO WALL



ABOVE DOOR

Fits Perfectly Anywhere

Panasonic air conditioners are designed to be compact in size, minimalist with matt finishing, enabling them to be easily fitted and seamlessly harmonized with any interior. Its uniquely designed structure enhances durability, yet conveniently eases installation and maintenance routines.

The Good Design Award 2020 has recognised its achievement of balancing product design and function for the benefit of the global community[1].

GOOD DESIGN AWARD 2020

[1] Good Design Award 2020 applicable to X-DELUXE INVERTER R32 (1.0HP-1.5HP), STANDARD INVERTER R32 (1.0HP- 2.0HP) and STANDARD NON-INVERTER R32 (1.0HP-1.5HP).

Easy Breezy Installation & Servicing

EASY REMOVAL

User-friendly slider locks



Easy to lock & unlock the front grille.

One-piece front grille

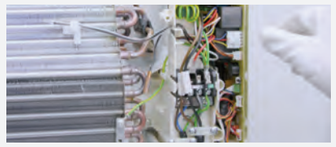


Makes installation & servicing easier when dismantling or assembling.

Simple steps for circuit board (PCB) removal



Remove control board cover.



Disconnect all the connectors.



Pull out main PCB, screw-free design makes it easy to remove PCB.

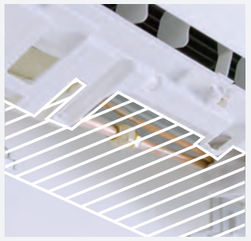
EASY ACCESS

Built-in support holders



Built-in support holder makes it easy to securely hold the indoor unit against the wall.

Piping storage



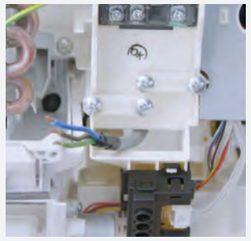
180mm bigger piping space improves work efficiency during installation and servicing.

Easy access to drain hose and piping



More open working spaces provide easy view and unobstructed access to setup drain hose and piping.

Easy wire insertion and connection



Single wire insert tunnel with wider opening provides front visibility plus easy wire insertion and connection.

NEAT INSTALLATION

Stronger installation plate



Stronger & more solid installation plate which provides more stability to better support indoor units.

Screw holders for uneven surfaces



Ensures indoor units fit well on the wall without any gaps.

WALL-MOUNTED

X-PREMIUM INVERTER R32 Single-Split Type



CS-XU10XKH-1 | CS-XU13XKH-1



Wireless
(Standard)

Wired
CZ-RD514C
(Optional)



CS-XU18XKH-1 | CS-XU24XKH-1



Wireless
(Standard)

Wired
CZ-RD514C
(Optional)

nanoeX nanoe X Generator Mark 2 | nanoe-G | BUILT-IN | NEW AEROWINGS | iAuto-X INTELLIGENT . DYNAMIC . COOL. HUMIDITY SENSOR | INVERTER | ECO+A.I.

MODEL	INDOOR UNIT (50Hz)		CS-XU10XKH-1	CS-XU13XKH-1	CS-XU18XKH-1	CS-XU24XKH-1
	OUTDOOR UNIT		CU-XU10XKH-1	CU-XU13XKH-1	CU-XU18XKH-1	CU-XU24XKH-1
Cooling Capacity	(min-max)	kW	2.80 (0.92-3.40)	3.66 (1.02-4.20)	5.57 (1.10-6.21)	6.60 (1.12-7.18)
	(min-max)	Btu/h	9,550 (3,140-11,600)	12,500 (3,480-14,300)	19,000 (3,750-21,200)	22,500 (3,820-24,500)
EER	(min-max)	Btu/hW	13.64 (13.96-11.26)	13.16 (13.92-12.12)	13.01 (13.89-12.47)	12.23 (12.32-11.95)
	(min-max)	W/W	4.00 (4.09-3.30)	3.85 (4.08-3.56)	3.82(4.07-3.65)	3.59 (3.61-3.50)
CSPF		W/W	6.41	6.42	6.96	6.10
Electrical Data	Voltage	V	230	230	230	230
	Current	A	3.3	4.2	6.5	8.3
	Power Input (min-max)	W	700 (225-1,030)	950 (250-1,180)	1,460 (270-1,700)	1,840 (310-2,050)
Moisture Removal		L/h	1.6	2.1	3.0	3.7
		Pt/h	3.4	4.4	6.3	7.8
Air Circulation	Indoor	m^3/min (ft^3/min)	11.8 (415)	12.5 (440)	18.7 (660)	19.2 (680)
	Outdoor	m^3/min (ft^3/min)	27.6 (970)	30.9 (1,090)	34.9 (1,230)	34.9 (1,230)
Noise Level	Indoor (H / L / Q-Lo)	dB(A)	38/26/19	40/28/19	44/32/27	45/34/28
	Outdoor (H)	dB(A)	47	48	50	52
Dimensions Indoor (Outdoor)	Height	mm	295 (511)	295 (542)	295 (619)	295 (619)
		inch	11-5/8 (20-1/8)	11-5/8 (21-11/32)	11-5/8 (24-3/8)	11-5/8 (24-3/8)
	Width	mm	870 (650)	870 (780)	1,040 (824)	1,040 (824)
		inch	34-9/32 (25-19/32)	34-9/32 (30-23/32)	40-31/32 (32-15/32)	40-31/32 (32-15/32)
	Depth	mm	229 (230)	229 (289)	244 (299)	244 (299)
		inch	9-1/32 (9-1/16)	9-1/32 (11-13/32)	9-5/8 (11-25/32)	9-5/8 (11-25/32)
Net Weight	Indoor	kg (lb)	10 (22)	10 (22)	12 (26)	12 (26)
	Outdoor	kg (lb)	18 (40)	23 (51)	30 (66)	31 (68)
Refrigerant Pipe Diameter	Liquid Side	mm	ø 6.35	ø 6.35	ø 6.35	ø 6.35
		inch	1/4	1/4	1/4	1/4
	Gas Side	mm	ø 9.52	ø 9.52	ø 12.70	ø 12.70
		inch	3/8	3/8	1/2	1/2
Pipe Extension	Chargeless Pipe Length	m	7.5	7.5	10.0	10.0
	Maximum Pipe Length	m	20	20	30	30
	Maximum Elevation Length	m	15	15	20	20
	Additional Refrigerant Gas*	g/m	10	10	15	15
Power Supply			Indoor	Indoor	Indoor	Indoor

*When pipes are not extended from the chargeless pipe length, the required amount of refrigerant is already in the unit.

FEATURES

nanoeX | nanoe-G | iAuto-X | HUMIDITY SENSOR (Optional) | SLEEP (Built-in) | 32 (Random) | ECO+A.I. | mode | 20m CS-XU10XKH-1 CS-XU13XKH-1 | 30m CS-XU18XKH-1 CS-XU24XKH-1 | 24 DUAL

EASY-TO-USE REMOTE CONTROLLER

Panasonic's wireless remote controller features a large Liquid Crystal Display (LCD) panel which makes it even more user-friendly. So you can sit back and enjoy easy operation and long-lasting comfort from your Panasonic Air Conditioner.



Wireless
Applicable to X-PREMIUM INVERTER R32

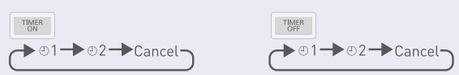
1. LCD display for an easy overview of the operation status.
2. Power button.
3. Switch on nanoe™ mode to activate nanoe™ X and nanoe-G for air purification and deodorisation even when the air conditioner is switched off.
4. iAUTO-X cools your home with fast cooling together with Shower Cooling which avoids direct cooling while providing continuous comfort. Reactivate faster cooling during stable temperature with a second press of the iAUTO-X button.
5. Press up or down to set the temperature.
6. Toggles between iAUTO-X, COOL and DRY setting mode.
7. Set the airflow direction.
8. Adjusts the FAN SPEED or QUIET mode so you can sleep comfortably at night.
9. Delays off timer with temperature control for better sleep.
10. Switch on the ECO + A.I. mode to let you enjoy the comfort cooling with minimal energy waste.
11. Set the 24-hour Dual ON & OFF Timer.
12. Set the actual time [hour and minute].

24 DUAL
DUAL TIMER

DUAL TIMER FOR 2 ON AND OFF TIMES PER DAY

Set the actual time (hour and minute).

1. Select ON or OFF Timer.



2. Set the time. SET

OUTDOOR UNIT

Blue Fin Condenser | R32 REFRIGERANT



CU-XU10XKH-1



CU-XU13XKH-1



CU-XU18XKH-1
CU-XU24XKH-1

WALL-MOUNTED

X-DELUXE INVERTER R32 Single-Split Type



CS-XPU10XKH-1 | CS-XPU13XKH-1



Wireless
(Standard)



Wired
CZ-RD514C
(Optional)



CS-XPU18XKH-1 | CS-XPU24XKH-1 | CS-XPU28XKH-1



Wireless
(Standard)



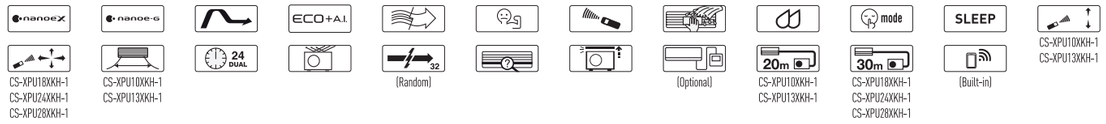
Wired
CZ-RD514C
(Optional)

nanoeX nanoe X Generator Mark 1 | nanoe-G | NEW BUILT-IN | AEROWINGS | POWERFUL | INVERTER | ECO+A.I.

MODEL	INDOOR UNIT (50Hz)		CS-XPU10XKH-1	CS-XPU13XKH-1	CS-XPU18XKH-1	CS-XPU24XKH-1	CS-XPU28XKH-1
	OUTDOOR UNIT		CU-XPU10XKH-1	CU-XPU13XKH-1	CU-XPU18XKH-1	CU-XPU24XKH-1	CU-XPU28XKH-1
Cooling Capacity	(min-max)	kW	2.84 (0.90-3.40)	3.66 (1.02-4.10)	5.57 (1.10-6.21)	6.60 (1.12-7.18)	7.10 (1.25-8.50)
	(min-max)	Btu/h	9,680 (3,070-11,600)	12,500 (3,480-14,000)	19,000 (3,750-21,200)	22,500 (3,820-24,500)	24,200 (4,260-29,000)
EER	(min-max)	Btu/hW	13.26 (13.64-11.26)	12.63 (12.65-12.07)	12.26 (12.93-11.46)	12.23 (12.32-11.95)	12.10 (12.17-10.74)
	(min-max)	W/W	3.89 (4.00-3.30)	3.70 (3.71-3.53)	3.59 (3.79-3.36)	3.59 (3.61-3.50)	3.55 (3.57-3.15)
CSPF		W/W	5.46	5.46	5.95	6.10	5.44
Electrical Data	Voltage	V	230	230	230	230	230
	Current	A	3.3	4.4	6.9	8.3	8.8
	Power Input (min-max)	W	730 (225-1,030)	990 (275-1,160)	1,550 (290-1,850)	1,840 (310-2,050)	2,000 (350-2,700)
Moisture Removal		L/h	1.7	2.1	3.0	3.7	4.1
		Pt/h	3.6	4.4	6.3	7.8	8.7
Air Circulation	Indoor	m^3/min (ft^3/min)	10.3 (365)	11.0 (390)	18.7 (660)	19.2 (680)	20.8 (735)
	Outdoor	m^3/min (ft^3/min)	27.6 (970)	30.6 (1,080)	39.3 (1,385)	34.9 (1,230)	45.9 (1,620)
Noise Level	Indoor (H / L / Q-Lo)	dB(A)	38/26/19	40/26/21	44/32/27	45/34/28	47/37/34
	Outdoor (H)	dB(A)	47	48	50	52	53
Dimensions Indoor (Outdoor)	Height	mm	290 (511)	290 (542)	295 (619)	295 (619)	295 (695)
		inch	11-7/16 (20-1/8)	11-7/16 (21-11/32)	11-5/8 (24-3/8)	11-5/8 (24-3/8)	11-5/8 (27-3/8)
	Width	mm	779 (650)	779 (780)	1,040 (824)	1,040 (824)	1,040 (875)
		inch	30-11/16 (25-19/32)	30-11/16 (30-23/32)	40-31/32 (32-15/32)	40-31/32 (32-15/32)	40-31/32 (34-15/32)
	Depth	mm	209 (230)	209 (289)	244 (299)	244 (299)	244 (320)
		inch	8-1/4 (9-1/16)	8-1/4 (11-13/32)	9-5/8 (11-25/32)	9-5/8 (11-25/32)	9-5/8 (12-5/8)
Net Weight	Indoor	kg (lb)	8 (18)	8 (18)	12 (26)	12 (26)	14 (31)
	Outdoor	kg (lb)	18 (40)	22 (49)	28 (62)	31 (68)	48 (106)
Refrigerant Pipe Diameter	Liquid Side	mm	ø 6.35	ø 6.35	ø 6.35	ø 6.35	ø 6.35
		inch	1/4	1/4	1/4	1/4	1/4
	Gas Side	mm	ø 9.52	ø 9.52	ø 12.70	ø 12.70	ø 15.88
		inch	3/8	3/8	1/2	1/2	5/8
Pipe Extension	Chargeless Pipe Length	m	7.5	7.5	10.0	10.0	10.0
	Maximum Pipe Length	m	20	20	30	30	30
	Maximum Elevation Length	m	15	15	20	20	20
	Additional Refrigerant Gas*	g/m	10	10	15	15	25
Power Supply			Indoor	Indoor	Indoor	Indoor	Outdoor

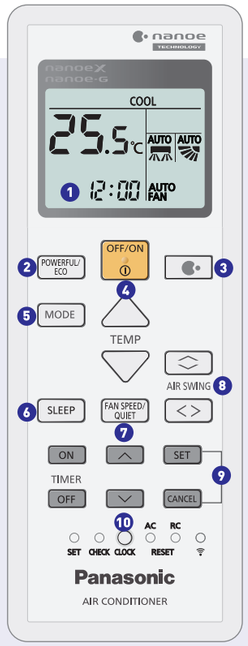
*When pipes are not extended from the chargeless pipe length, the required amount of refrigerant is already in the unit.

FEATURES



EASY-TO-USE REMOTE CONTROLLER

Panasonic's wireless remote controller features a large Liquid Crystal Display (LCD) panel which makes it even more user-friendly. So you can sit back and enjoy easy operation and long-lasting comfort from your Panasonic Air Conditioner.



Wireless
Applicable to
CS-XPU18/24/28XKH-1

1. LCD display for an easy overview of the operation status.
2. Toggles setting between POWERFUL mode and ECO with A.I. setting mode. POWERFUL mode provides fast cooling while ECO with A.I. mode provides energy saving.
3. Switch on nanoe™ mode to activate nanoe™ X and nanoe-G for air purification and deodorisation even when the air conditioner is switched off.
4. Press up or down to set the temperature.
5. Toggles between AUTO, COOL and DRY setting mode.
6. Delays off timer with temperature control for better sleep.
7. Adjusts the FAN SPEED or QUIET mode so you can sleep comfortably at night.
8. Set the airflow direction.
9. Set 24-hour Dual ON & OFF Timer.
10. Set the actual time (hour and minute).



Powerful Cooling at Start-up
POWERFUL Mode cools your room faster by 18% at the start to bring you cooling comfort instantly on a hot day.

Press POWERFUL/ ECO once to switch ON POWERFUL Mode.

* Comparison of POWERFUL Cool Mode & normal cool mode by using 1.5HP Inverter Model.

OUTDOOR UNIT

Blue Fin Condenser | R32 REFRIGERANT



CU-XPU10XKH-1



CU-XPU13XKH-1



CU-XPU18XKH-1
CU-XPU24XKH-1



CU-XPU28XKH-1

WALL-MOUNTED

STANDARD INVERTER R32 Single-Split Type



CS-PU9XKH-1 | CS-PU12XKH-1 | CS-PU18XKH-1



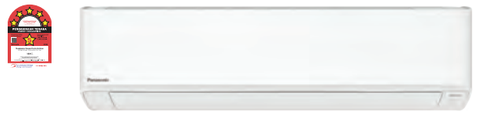
Wireless
(Standard)



Wired
CZ-RD514C
(Optional)



Network Adaptor
CZ-TACG1 (Optional)



CS-PU24XKH-1



Wireless
(Standard)



Wired
CZ-RD514C
(Optional)



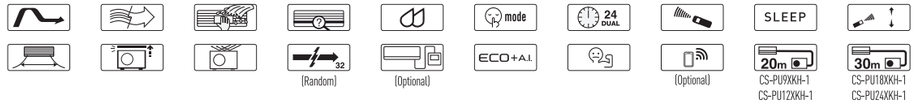
Network Adaptor
CZ-TACG1 (Optional)

BIG FLAP (CS-PU9/12/18XKH-1) | AEROWINGS (CS-PU24XKH-1) | POWERFUL | INVERTER | ECO+A.I.

MODEL	INDOOR UNIT (50Hz)		CS-PU9XKH-1	CS-PU12XKH-1	CS-PU18XKH-1	CS-PU24XKH-1
	OUTDOOR UNIT		CU-PU9XKH-1	CU-PU12XKH-1	CU-PU18XKH-1	CU-PU24XKH-1
Cooling Capacity	(min-max)	kW	2.78 (0.84-2.90)	3.60 (1.02-4.00)	5.30 (1.10-5.60)	6.90 (1.12-7.18)
	(min-max)	Btu/h	9,480 (2,860-9,890)	12,300 (3,480-13,600)	18,100 (3,750-19,100)	23,500 (3,820-24,500)
EER	(min-max)	Btu/hW	11.85 (12.71-10.99)	11.50 (12.65-11.06)	10.97 (12.93-10.61)	12.05 (12.32-11.95)
	(min-max)	W/W	3.48 (3.73-3.22)	3.36 (3.71-3.25)	3.21 (3.79-3.11)	3.54 (3.61-3.50)
CSPF		W/W	4.83	4.92	5.09	6.10
Electrical Data	Voltage	V	230	230	230	230
	Current	A	3.7	4.8	7.3	8.6
	Power Input (min-max)	W	800 (225-900)	1,070 (275-1,230)	1,650 (290-1,800)	1,950 (310-2,050)
Moisture Removal		L/h	1.6	2.1	2.9	3.9
		Pt/h	3.4	4.4	6.1	8.2
Air Circulation	Indoor	m^3/min (ft^3/min)	10.3 (365)	11.3 (400)	12.6 (445)	19.2 (680)
	Outdoor	m^3/min (ft^3/min)	26.7 (940)	30.2 (1,065)	39.3 (1,390)	34.9 (1,230)
Noise Level	Indoor (H / L / Q-Lo)	dB (A)	38/26/21	40/28/21	44/34/28	45/34/29
	Outdoor (H)	dB (A)	47	48	50	52
Dimensions Indoor (Outdoor)	Height	mm	290 (511)	290 (542)	290 (619)	295 (619)
		inch	11-7/16 (20-1/8)	11-7/16 (21-11/32)	11-7/16 (24-3/8)	11-5/8 (24-3/8)
	Width	mm	779 (650)	779 (780)	779 (824)	1,040 (824)
		inch	30-11/16 (25-19/32)	30-11/16 (30-23/32)	30-11/16 (32-15/32)	40-31/32 (32-15/32)
	Depth	mm	209 (230)	209 (289)	209 (299)	244 (299)
		inch	8-1/4 (9-1/16)	8-1/4 (11-13/32)	8-1/4 (11-25/32)	9-5/8 (11-25/32)
Net Weight	Indoor	kg (lb)	8 (18)	8 (18)	9 (20)	12 (26)
	Outdoor	kg (lb)	17 (37)	22 (49)	28 (62)	31 (68)
Refrigerant Pipe Diameter	Liquid Side	mm	ø 6.35	ø 6.35	ø 6.35	ø 6.35
		inch	1/4	1/4	1/4	1/4
	Gas Side	mm	ø 9.52	ø 9.52	ø 12.70	ø 12.70
		inch	3/8	3/8	1/2	1/2
Pipe Extension	Chargeless Pipe Length	m	7.5	7.5	10.0	10.0
	Maximum Pipe Length	m	20	20	30	30
	Maximum Elevation Length	m	15	15	20	20
	Additional Refrigerant Gas*	g/m	10	10	15	15
Power Supply			Indoor	Indoor	Indoor	Indoor

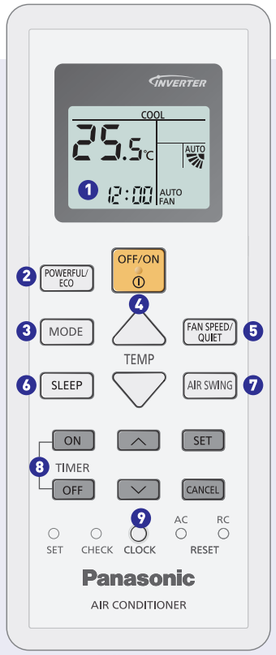
*When pipes are not extended from the chargeless pipe length, the required amount of refrigerant is already in the unit.

FEATURES



EASY-TO-USE REMOTE CONTROLLER

Panasonic's wireless remote controller features a large Liquid Crystal Display (LCD) panel which makes it even more user-friendly. So you can sit back and enjoy easy operation and long-lasting comfort from your Panasonic Air Conditioner.



Wireless
Applicable to
STANDARD INVERTER R32

1. LCD display for an easy overview of the operation status.
2. Toggles setting between POWERFUL mode and ECO with A.I. setting mode. POWERFUL mode provides fast cooling while ECO with A.I. mode provides energy saving.
3. Toggles between AUTO, COOL and DRY setting mode.
4. Press up or down to set the temperature.
5. Adjusts the FAN SPEED or QUIET mode so you can sleep comfortably at night.
6. Delays off timer with temperature control for better sleep.
7. Set the airflow direction.
8. Set the 24-hour Dual ON & OFF Timer.
9. Set the actual time (hour and minute).



Long Airflow with Big Flap

Big bottom flap directs cooling and comforting air across the room for an optimal cooling sensation.



Powerful Cooling at Start-up

POWERFUL Mode cools your room faster by 18%* at the start to bring you cooling comfort instantly on a hot day.

*Comparison of POWERFUL Cool Mode & normal cool mode by using 1.5HP Inverter Model.

OUTDOOR UNIT

Blue Fin Condenser

R32 REFRIGERANT



CU-PU9XKH-1



CU-PU12XKH-1



CU-PU18XKH-1
CU-PU24XKH-1

WALL-MOUNTED

STANDARD NON-INVERTER R32 Single-Split Type



CS-PN9WKH-1 | CS-PN12WKH-1



CS-PN18XKH-1B | CS-PN24XKH-1



CS-PN28VKH-1



Wireless
(Standard)



Wired
CZ-RD011C-1
(Optional)



Wireless
(Standard)



Wired
CZ-RD011C-1
(Optional)



Wireless
(Standard)



Wired
CZ-RD011C-1
(Optional)

BIG FLAP (CS-PN9/12WKH-1, CS-PN28VKH-1)

AEROWINGS (CS-PN18XKH-1B, CS-PN24XKH-1)

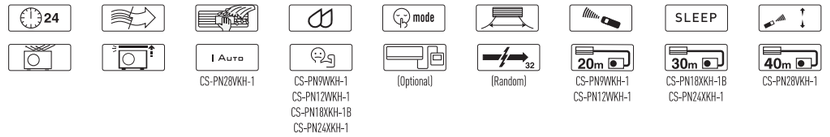
POWERFUL (CS-PN9/12WKH-1, CS-PN18XKH-1B, CS-PN24XKH-1)

i Auto INTELLIGENT AUTO MODE (CS-PN28VKH-1)

MODEL	INDOOR UNIT (50Hz)		CS-PN9WKH-1	CS-PN12WKH-1	CS-PN18XKH-1B	CS-PN24XKH-1	CS-PN28VKH-1
	OUTDOOR UNIT		CU-PN9WKH-1	CU-PN12WKH-1	CU-PN18XKH-1B	CU-PN24XKH-1	CU-PN28VKH-1
Cooling Capacity	(min-max)	kW	2.78	3.52	5.33	6.85	8.40
	(min-max)	Btu/h	9,500	12,000	18,200	23,400	28,600
EER	(min-max)	Btu/hW	11.59	11.21	11.23	10.68	9.86
	(min-max)	W/W	3.39	3.29	3.29	3.13	2.90
CSPF		W/W	3.48	3.43	3.49	3.32	-
Electrical Data	Voltage	V	230	230	230	230	230
	Current	A	3.7	4.8	7.1	9.7	13.6
	Power Input	W	820	1,070	1,620	2,190	2,900
Moisture Removal		L/h	1.6	2.0	2.9	3.9	5.0
		Pt/h	3.4	4.2	6.1	8.2	10.6
Air Circulation	Indoor	m^3/min (ft^3/min)	10.9 (385)	11.6 (409)	18.4 (650)	20.5 (724)	21.5 (759)
	Outdoor	m^3/min (ft^3/min)	28.8 (1,020)	29.8 (1,050)	39.3 (1,390)	40.3 (1,420)	54.5 (1,920)
Noise Level	Indoor (H / L / Q-Lo)	dB (A)	38/26	41/29	43/39	47/42	50/46
	Outdoor (H)	dB (A)	48	51	53	55	56
Dimensions Indoor (Outdoor)	Height	mm	290 (511)	290 (542)	295 (619)	295 (619)	302 (695)
		inch	11-7/16 (20-1/8)	11-7/16 (21-11/32)	11-5/8 (24-3/8)	11-5/8 (24-3/8)	11-29/32 (27-3/8)
	Width	mm	779 (650)	779 (780)	1,040 (824)	1,040 (824)	1,102 (875)
		inch	30-11/16 (25-19/32)	30-11/16 (30-23/32)	40-31/32 (32-15/32)	40-31/32 (32-15/32)	43-13/32 (34-15/32)
	Depth	mm	209 (230)	209 (289)	244 (299)	244 (299)	244 (320)
		inch	8-1/4 (9-1/16)	8-1/4 (11-13/32)	9-5/8 (11-25/32)	9-5/8 (11-25/32)	9-5/8 (12-5/8)
Net Weight	Indoor	kg (lb)	8 (18)	8 (18)	12 (26)	12 (26)	13 (29)
	Outdoor	kg (lb)	21 (46)	26 (57)	35 (77)	41 (90)	55 (121)
Refrigerant Pipe Diameter	Liquid Side	mm	ø 6.35	ø 6.35	ø 6.35	ø 6.35	ø 6.35
		inch	1/4	1/4	1/4	1/4	1/4
	Gas Side	mm	ø 9.52	ø 9.52	ø 12.70	ø 15.88	ø 15.88
		inch	3/8	3/8	1/2	5/8	5/8
Pipe Extension	Chargeless Pipe Length	m	7.5	7.5	7.5	7.5	7.5
	Maximum Pipe Length	m	20	20	30	30	40
	Maximum Elevation Length	m	15	15	20	20	30
	Additional Refrigerant Gas*	g/m	10	10	15	25	25
Power Supply			Indoor	Indoor	Indoor	Indoor	Outdoor

*When pipes are not extended from the chargeless pipe length, the required amount of refrigerant is already in the unit.

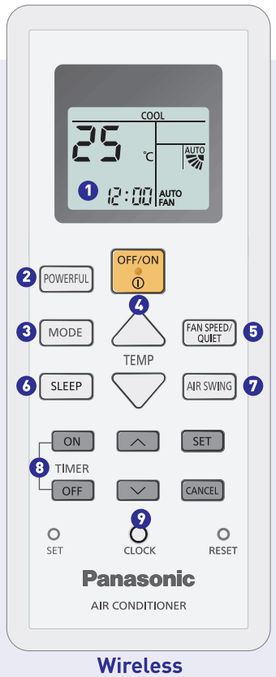
FEATURES



CS-PN28VKH-1 | CS-PN9WKH-1 CS-PN12WKH-1 CS-PN18XKH-1B CS-PN24XKH-1 | (Optional) | (Random) | CS-PN9WKH-1 CS-PN12WKH-1 | CS-PN18XKH-1B CS-PN24XKH-1 | CS-PN28VKH-1

EASY-TO-USE REMOTE CONTROLLER

Panasonic's wireless remote controller features a large Liquid Crystal Display (LCD) panel which makes it even more user-friendly. So you can sit back and enjoy easy operation and long-lasting comfort from your Panasonic Air Conditioner.



Wireless
Applicable to
CS-PN9/12WKH-1, CS-PN18XKH-1B, CS-PN24XKH-1

1. LCD display for an easy overview of the operation status.
2. Pressing the POWERFUL button cools the room quickly. It provides fast comfort with full power and a strong airflow. This is perfect use immediately after coming home or when unexpected guests arrive.
3. Toggles between AUTO, COOL and DRY setting mode.
4. Press up or down to set the temperature.
5. Adjusts the FAN SPEED or QUIET mode so you can sleep comfortably at night.
6. Delays off timer with temperature control for better sleep.
7. Set the airflow direction.
8. Set the 24-hour ON & OFF Timer.
9. Set the actual time (hour and minute).



Long Airflow with Big Flap
Big bottom flap directs cooling and comforting air across the room for an optimal cooling sensation.



Powerful Cooling at Start-up
POWERFUL Mode cools your room faster by 18%* at the start to bring you cooling comfort instantly on a hot day.

*Comparison of POWERFUL Cool Mode & normal cool mode by using 1.5HP Inverter Model.

OUTDOOR UNIT

Blue Fin Condenser

R32 REFRIGERANT



CU-PN9WKH-1



CU-PN12WKH-1



CU-PN18XKH-1B
CU-PN24XKH-1



CU-PN28VKH-1
**Not applicable for Energy Label



3 Key Elements for Quality Air

Envisioning a comfortable environment is now made a reality. Panasonic maintains three key elements such as Air Conditioning, Air Ventilation and Air Purification to ensure you can enjoy quality air that enriches your life.

QUALITY AIR FOR LIFE

Air Conditioning
• Temperature & humidity control

nanoe™ X technology
• Air quality improvement

Ventilation
• Lower indoor contaminant levels

Air Conditioning

Panasonic air conditioners offer comfortable cooling while harmonising with any interior designs.

Wall-mounted Air Conditioner



Cool air descends from above for gentle and even cooling.

4-Way Cassette



360º wide and comfortable airflow.

nanoe™ X technology

Deodorises and effectively inhibits bacteria, viruses and pollutants in the air and surfaces (adhered) for a clean and safe environment.

Wall-mounted Air Conditioner



Purifies your living space by inhibiting various pollutants to protect you and your family.

Humidifying Air Purifier



Safe air with HEPA composite filter that removes 99.97% of 0.3μm particles.

air-e



Deodorises unpleasant smells and fabrics, occupying only a minimal space.

Portable nanoe™ X Generator



The portable and lightweight design makes it ideal for any environment.

Ventilation

Maintains a circulated air flow while ventilating indoor air by minimising CO_2 and VOCs to keep the space fresh all-round.

ERV



Brings fresh air in from outside while expelling stale air and heat.

Supply Fan



Ensures only fresh, clean air enters the room and removes particles.



COMPLETE AIR
MANAGEMENT SYSTEM

Complete Air Management System

Utilising the Indoor Air Quality (IAQ) sensor to continuously monitor air quality while adjusting cooling and ventilation volume, Panasonic's Complete Air Management System provides clear air, optimised at a comfortable temperature and humidity.

This system minimises the required time to purify contaminated air and restore fresh air to your environment using less energy. Delivering our promise of the future, with the Complete Air Management System*.

Linked operation of air conditioner + supply fan + IAQ remote controller

*Product availability may vary depending on country.

Functions of the Complete Air Management System

Evaluates Air Quality Visibly

- Sensing and assessing air in 4 levels.
- Air quality is still monitored when the system is off, so you can check the air conditions at home via the app anytime, anywhere.
- Updates status every 5 minutes, allowing you to check the current conditions at your convenience.



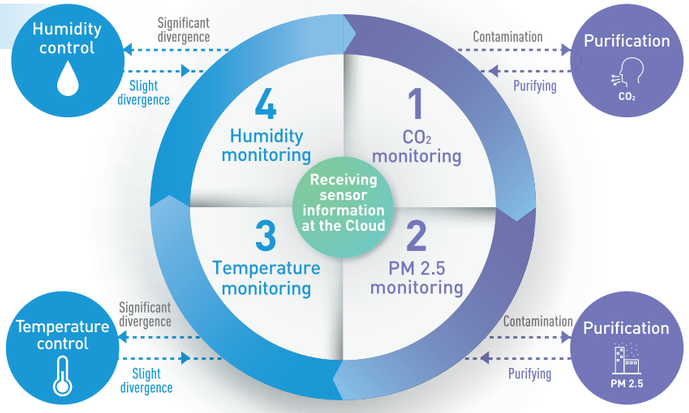
Sensor Information	Values
Temperature	-9 — 50°C
Humidity	20 — 95%
PM 2.5	0 — 2,000 μ g/m³
CO_2	400 — 3,000ppm

Evaluation	Points	Color	Overall Evaluation
Excellent	25 points	Blue	All excellent status (100 points)
Good	20 points	Green	Total of 4 elements 71–99 points
Fair	15 points	Orange	Total of 4 elements 56–70 points
Poor	10 points	Red	Total of 4 elements under 55 points

Intelligent Sensing

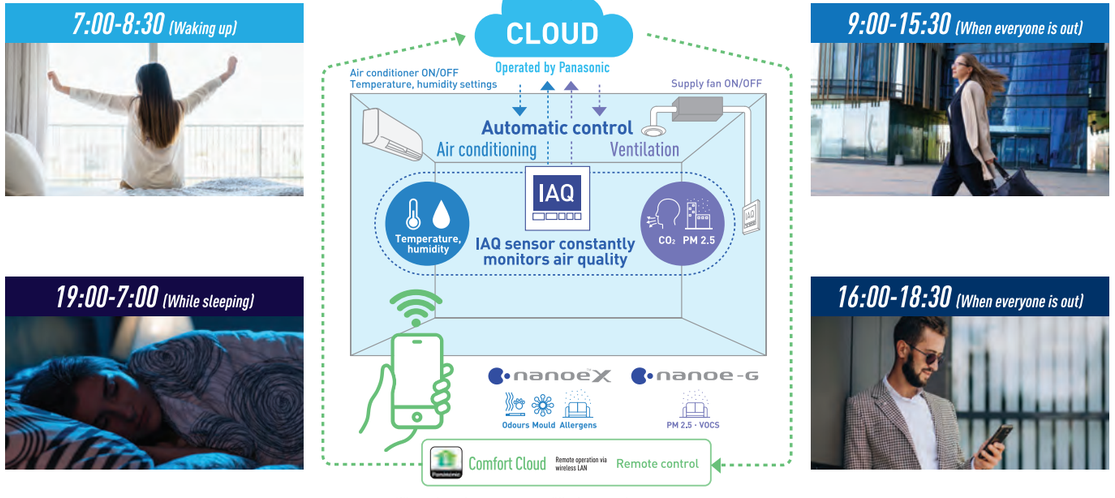
- Detects air quality constantly with IAQ sensors, automatically controlling cooling and airflow.





Benefits of Complete Air Management System

The Complete Air Management System gives you the ability to monitor air quality by cooling, ventilating and purifying the space at your convenience for greater mornings and better nights, all-day long.



*Illustrations of app screens may differ from actual screen appearance.

nanoe™ World

Expanding the nanoe™ world in Japan-24/7, Anywhere, Anytime.

Increasingly adopted in a wide range of industries such as railway, automotive, hotel and hospital industries

Public Transport



JR Kyushu



Keihan Railway



KEIO



JR East



Office



• 4-way cassette air conditioners

• Elevators



Hitachi

Home



• Humidifying air purifiers



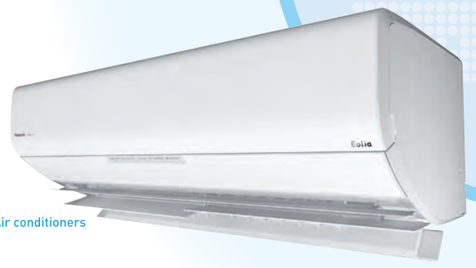
• Humidifiers



• Clothes drying dehumidifiers



• Fans



• Air conditioners

Automotive

Toyota Lexus

Expanding adoption to **40** models



Suzuki

Mazda

Subaru

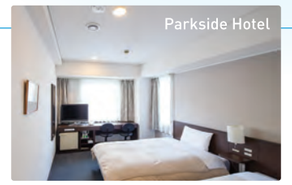
Public spaces



• Ceiling-embedded nanoe™ generators

Hotels





Cafes



Hospitals



Nursery schools



Nursing homes

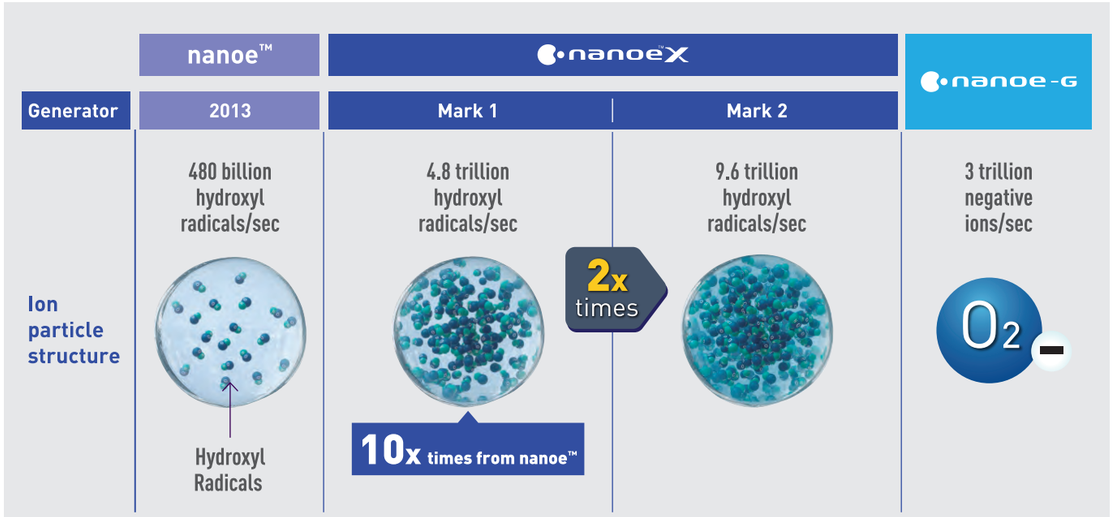


Panasonic is committed to the improvement of air quality with nanoe™ technology.

Trade names, trademarks and images of products/services are used in this material under approval by the entities concerned in Japan. (As of May 31st, 2020)

The Development of nanoe™ technology

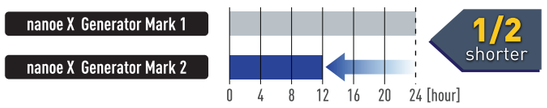
nanoe™ technology development started with the aim of using water's natural tendency to dissolve odour-causing substances. Through repeated improvements on the nanoe™ device over the years, it now generates 20 times more hydroxyl radicals to ensure the air is purified at all times.



Effectiveness of nanoe X Generator Mark 2 vs nanoe X Generator Mark 1

Pollen inhibition test*

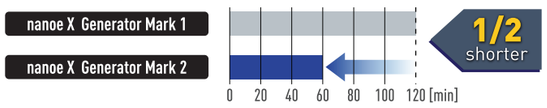
Required time to inhibit 99% of pollen



[Testing organisation] Panasonic Product Analysis Center [Testing method] Verified using electrophoresis method in an approximately 23m³ sized test room [Deodorisation method] nanoe™ released [Test substance] Cedar pollen[Test result] Inhibited 99% in 12 hours (L19YA009)

Deodorisation test*

Required time to reduce aged-related body odour intensity by 1.7 level



[Testing organisation] Panasonic Product Analysis Center [Testing method] Verified using the six-level odour intensity scale method in an approximately 23m³ sized test room [Deodorisation method] nanoe™ released [Test substance] Surface-attached aged related body odour [Test result] Odour intensity reduced by 1.7 levels in 1 hour (Y18HM059)

*Lifespan of hydroxyl radicals contained in water is around 10 minutes, during this time they have the capacity to act against the pollutants. It may require longer to inhibit pollutants effectively, see the tests on effectiveness on nanoe™ X on airborne and adhesive pollutants.

nanoe™ X
nanoe X Generator Mark 2



X-PREMIUM INVERTER R32

nanoe™ X
nanoe X Generator Mark 1



X-DELUXE INVERTER R32

nanoe™ X

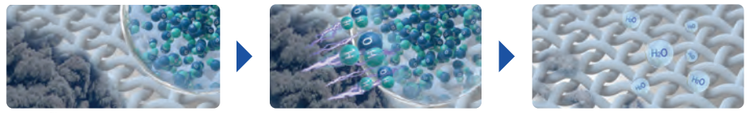
Deodorises frequently encountered odours

Odour causing substances such as cigarette smoke and garbage are removed to a hardly noticeable level.

Acts on odour causing substances & deodorises them

nanoe™ X particles, which are smaller than steam particles, penetrate into deepest parts of fibres allowing for highly effective deodorisation.

How nanoe™ X Reduces Odour

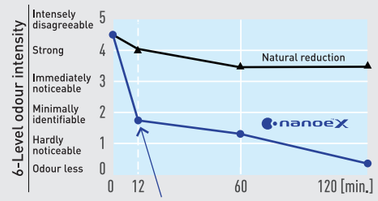


nanoe™ X reliably reaches odours embedded in fibres.

Hydroxyl radicals break down odour causing substances.

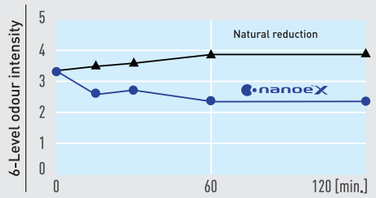
Odour is eliminated.

Cigarette Smoke Odour



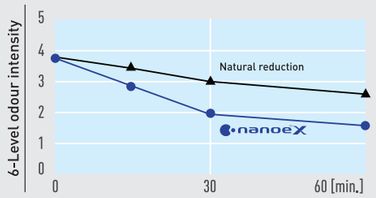
nanoe™ X can reduced cigarette smoke odour intensity by 2.4 levels in 12 minutes.

Pet Odour



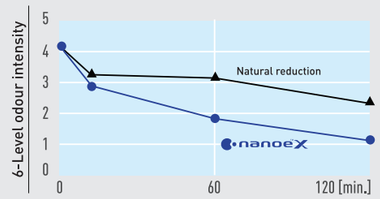
nanoe™ X reduced pet odour intensity by 1.5 levels in 1 hour

Durian Odour



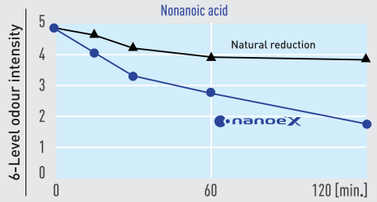
nanoe™ X reduced durian odour intensity faster than natural reduction.

BBQ Odour



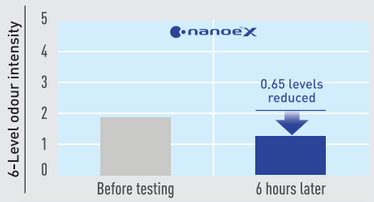
nanoe™ X reduced BBQ odour intensity faster than natural reduction.

Sweat Odour



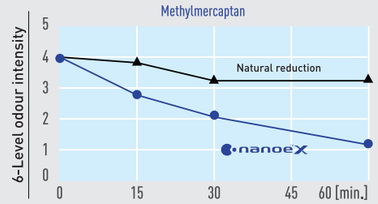
nanoe™ X reduced sweat odour intensity massively in 1 hour.

Scalp Odour



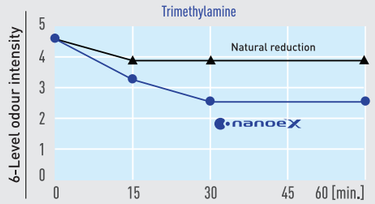
nanoe™ X reduced scalp odour massively in 6 hours.

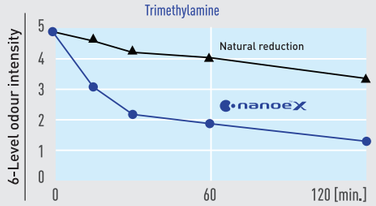
Garbage Odour



nanoe™ X reduced garbage odour intensity in 0.5 hours.

Damp Odour





nanoe™ X reduced damp odour intensity to a hardly noticeable level in 1 hour.

[Representative evidence]

** : Units based on Panasonic standards

	Odours	Result**	Capacity	Time (Hr.)	Testing organisation	Report No.
Adhered	**Cigarette smoke odour**	Odour intensity reduced by 2.4 levels	Approx. 23m³	0.2	Panasonic Product Analysis Center	4AA33-160615-N04
	Pet odour	Odour intensity reduced by 1.5 levels	Approx. 23m³	1	Panasonic Product Analysis Center	4AA33-160315-A34
	Durian odour	Odour intensity reduced by 1.0 levels	Approx. 23m³	0.5	Panasonic Product Analysis Center	1V332-180402-K01
	BBQ odour	Odour intensity reduced by 1.2 levels	Approx. 23m³	2	Panasonic Product Analysis Center	4AA33-151221-N01
	Sweat odour (Nonanoic acid)	Odour intensity reduced by 1.1 levels	Approx. 23m³	1	Panasonic Product Analysis Center	Y16HM016
	Sweat odour (Hexanoic acid)	Odour intensity reduced by 2.6 levels	Approx. 23m³	1	Panasonic Product Analysis Center	4AA33-160315-A35
	Scalp odour (Pillow cover)	Odour intensity reduced by 0.65 levels	Approx. 23m³	6	[Supervision] Odour and Aroma Design Course, Department of Integrated Informatics, Faculty of Informatics, Daido University	
	Garbage odour (Methylmercaptan)	Odour intensity reduced by 1.2 levels	Approx. 23m³	0.5	Panasonic Product Analysis Center	1V332-18220-K11
	Garbage odour (Trimethylamine)	Odour intensity reduced by 1.4 levels	Approx. 23m³	0.5	Panasonic Product Analysis Center	1V332-180220-K12
	Damp odour (Triethylamine)	Odour intensity reduced by 1.7 levels	Approx. 23m³	0.5	Panasonic Product Analysis Center	Y16RA002

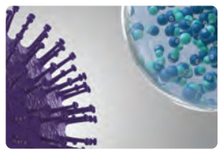
Results may vary based on usage, and seasonal and enviroment variables (temperature and humidity). nanoe™ X and nanoe™ inhibit activity or growth of viruses, but do not prevent infection. Deodorisation effect varies according to the enivironment (temperature and humidity), operation time, odour, and fabric types.

nanoeX

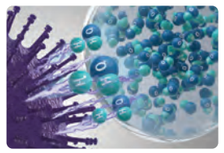
Inhibits activity of airborne, adhered bacteria and viruses

nanoe™ X inhibits the activity of airborne and adhered bacteria and viruses.

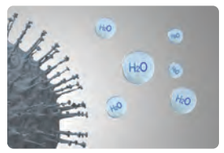
How nanoe™ X Inhibits Bacteria & Viruses



nanoe™ X reliably reaches virus.

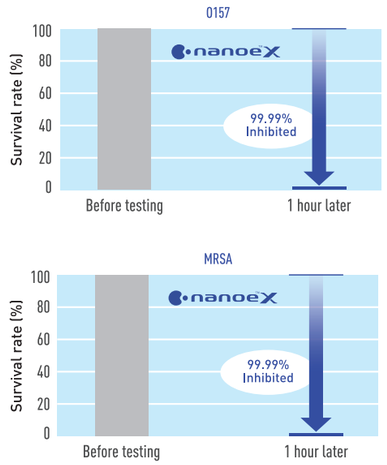


Hydroxyl radicals transform virus proteins.

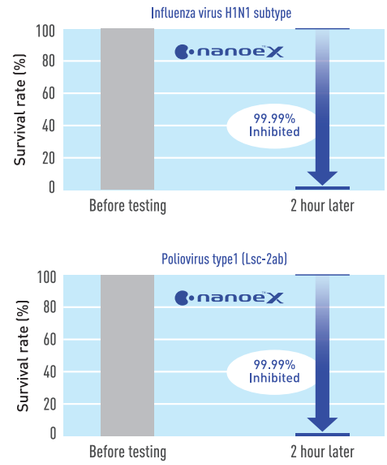


Virus activity is inhibited.

Adhered Bacteria



Adhered Viruses



[Representative evidence]

** : Units based on Panasonic standards

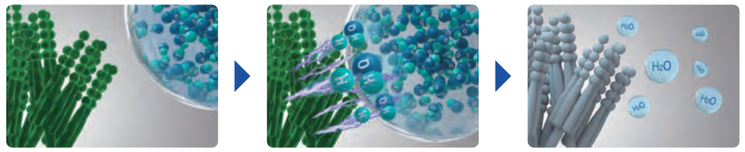
	Bacteria & viruses	Result**	Capacity	Time (Hr.)	Testing organisation	Report No.
Airborne	**Virus Bacteriophage ΦX174**	99.7% inhibited	Approx. 25m³	6	Kitasato Research Center for Environmental Science	24_0300_1
	Bacteria Staphylococcus aureus	99.9% inhibited	Approx. 25m³	4	Kitasato Research Center for Environmental Science	2016_0279
Adhered	**Virus Bacteriophage ΦX174**	99.8% inhibited	Approx. 25m³	8	Japan Food Research Laboratories	13001265005-01
	Bacteria Staphylococcus aureus	99.1% inhibited	Approx. 25m³	8	Japan Food Research Laboratories	13044083003-01
Adhered Novel Coronavirus	**SARS-CoV-2**	99.9% inhibited	45L	2	Texcell France	1140-01 A1
	SARS-CoV-2	91.4% inhibited	6.7m³	8	Texcell France	1140-01 C3
	SARS-CoV-2	99.7% inhibited	6.7m³	24	Texcell France	1140-01 C3
Adhered virus	**Influenza virus (H1N1 subtype)**	99.9% inhibited	1m³	2	Kitasato Research Center for Environmental Science	21_0084_1
	Feline calicivirus (Related form of norovirus)	99.9% inhibited	25L	2	Japan Food Research Laboratories	207031493-001
	Coxackievirus (B6)	99.1% inhibited	45L	2	Kitasato Research Center for Environmental Science	22_0085
	Poliovirus type 1 (Lsc-2ab)	99.7% inhibited	45L	2	Kitasato Research Center for Environmental Science	22_0096
Adhered bacteria	**Bacterium enterohemorrhagic escherichia coli (O157)**	99.99% inhibited	45L	1	Japan Food Research Laboratories	208120880-001
	Methicillin-resistant staphylococcus aureus (MRSA)	99.99% inhibited	45L	1	Japan Food Research Laboratories	208120880-002
	Staphylococcus aureus	99.99% inhibited	1m³	24	Kitasato Research Center for Environmental Science	20_0154_2
	Bacillus	99.6% inhibited	45L	0.5	Japan Food Research Laboratories	11000924001-01
	Micrococcus	99.9% inhibited	45L	2	Japan Food Research Laboratories	11000924001-02
	Serratia	99.9% inhibited	45L	2	Japan Food Research Laboratories	11000924001-03
	Kocuria	99.9% inhibited	45L	1	Japan Food Research Laboratories	11000922001-01

Results may vary based on usage, and seasonal and enviroment variables (temperature and humidity). nanoe™ X and nanoe™ inhibit activity or growth of viruses, but do not prevent infection.

Inhibits activity of airborne mould and adhered mould

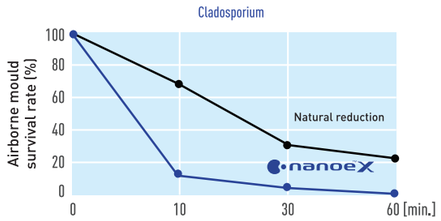
nanoe™ X is effective in removing various airborne mould within a room as well as inhibiting the growth of adhered mould.

How nanoe™ X Inhibits Growth of Mould

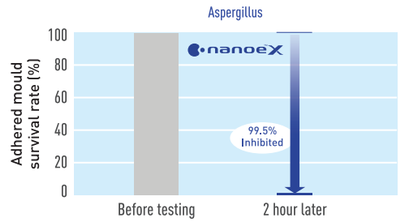


nanoe™ X reliably reaches mould. → Hydroxyl radicals denature mould proteins. → Mould activity is inhibited.

Airborne Mould



Adhered Mould



[Representative evidence]

** : Units based on Panasonic standards

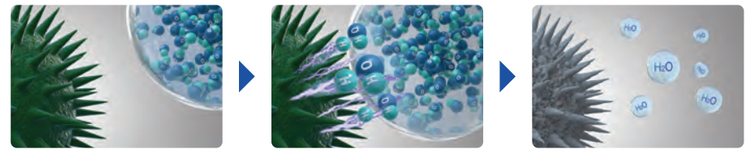
	Mould	Result**	Capacity	Time (Hr.)	Testing organisation	Report No.
Airborne	**Cladosporium**	99% inhibited	Approx. 23m³	1	Japan Food Research Laboratories	205061541-001
Adhered	**Alternaria**	Inhibited	Approx. 23m³	8	Japan Food Research Laboratories	18077411001-0201
	Aspergillus	Inhibited	Approx. 23m³	8	Japan Food Research Laboratories	17145307001-0801
	Cladosporium	Inhibited	Approx. 23m³	8	Japan Food Research Laboratories	17145307001-0901
	Eurotium	Inhibited	Approx. 23m³	8	Japan Food Research Laboratories	17145307001-1001
	Fusarium	Inhibited	Approx. 23m³	8	Japan Food Research Laboratories	17145307001-1101
	Mucor	Inhibited	Approx. 23m³	8	Japan Food Research Laboratories	17145307001-1201
	Penicillium	Inhibited	Approx. 23m³	8	Japan Food Research Laboratories	17145307001-1301
	Stachybotrys	Inhibited	Approx. 23m³	8	Japan Food Research Laboratories	17145307001-1401
	Aspergillus	99.5% inhibited	45L	8	Japan Food Research Laboratories	11038081001-02
	Penicillium	99.5% inhibited	45L	4	Japan Food Research Laboratories	11028760001-01
	Fusarium	99.9% inhibited	45L	4	Japan Food Research Laboratories	11018692001-02
	Eurotium	99.9% inhibited	45L	8	Kitasato Research Center for Environmental Science	22_0455
	Mucor	99.9% inhibited	45L	8	Japan Food Research Laboratories	11038080001-01
	Stachybotrys	99.9% inhibited	45L	8	Kitasato Research Center for Environmental Science	22_0455
	Alternaria	99.9% inhibited	45L	16	Japan Food Research Laboratories	11038082001-01

Results may vary based on usage, and seasonal and enviroment variables (temperature and humidity). nanoe™ X and nanoe™ inhibit activity or growth of viruses, but do not prevent infection.

Inhibits pet-derived allergens and major allergens

In addition to allergens from sources such as dog / cat dander, mite faeces / carcasses, and airborne mould, other major allergens are also inhibited.

How nanoe™ X Inhibits Allergens



nanoe™ X reliably reaches allergens. → Hydroxyl radicals denature allergen proteins. → Allergen is inhibited.

[Representative evidence]

** : Units based on Panasonic standards

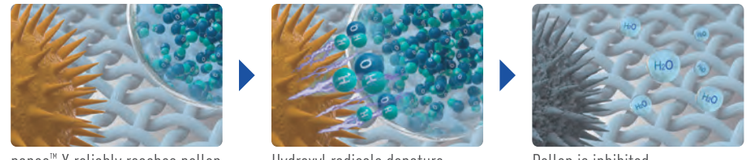
	Allergens	Result**	Capacity	Time (Hr.)	Testing organisation	Report No.
Mites	**Dermatophagoides pteronyssinus**	Inhibited	Approx. 23m³	24	Panasonic Product Analysis Center	4AA33-160615-F01
	Dermatophagoides farinae	Inhibited	Approx. 23m³	24	Panasonic Product Analysis Center	4AA33-170301-F15
Mould	**Alternaria (Sooty moulds)**	Inhibited	Approx. 23m³	24	Panasonic Product Analysis Center	4AA33-160615-F02
	Aspergillus (Aspergillus genus)	Inhibited	Approx. 23m³	24	Panasonic Product Analysis Center	
	Candida	Inhibited	Approx. 23m³	24	Panasonic Product Analysis Center	
	Malassezia	Inhibited	Approx. 23m³	24	Panasonic Product Analysis Center	
Insect	**Cockroach**	Inhibited	Approx. 23m³	24	Panasonic Product Analysis Center	4AA33-160615-F03
	Moth	Inhibited	Approx. 23m³	24		
Animal	**Dog (dander)**	Inhibited	Approx. 23m³	24	Panasonic Product Analysis Center	4AA33-160620-F01
	Cat (dander)	Inhibited	Approx. 23m³	24		

Results may vary based on usage, and seasonal and enviroment variables (temperature and humidity). nanoe™ X and nanoe™ inhibit activity or growth of viruses, but do not prevent infection.

Inhibits pollens globally all year round

nanoe™ X is effective in inhibiting a variety of pollens globally all year round. The inhibition effect has been confirmed for the 13 varieties shown below, including those found in Europe and North America.

How nanoe™ X Inhibits Pollen



nanoe™ X reliably reaches pollen. → Hydroxyl radicals denature pollen proteins. → Pollen is inhibited.

[Representative evidence]

** : Units based on Panasonic standards

Pollen Allergens	Result**	Capacity	Time (Hr.)	Testing organisation	Report No.
Cedar	97% inhibited	Approx. 23m³	8	Panasonic Product Analysis Center	4AA33-151001-F01
Cypress	Inhibited	Approx. 23m³	24	Panasonic Product Analysis Center	4AA33-151028-F01
Orchard grass	Inhibited	Approx. 23m³	24		
Ragweed	Inhibited	Approx. 23m³	24		
Alnus japonica	Inhibited	Approx. 23m³	24	Panasonic Product Analysis Center	4AA33-160601-F01
Japanese white birch	Inhibited	Approx. 23m³	24		
Artemisia	Inhibited	Approx. 23m³	24		
Olive	Inhibited	Approx. 23m³	24	Panasonic Product Analysis Center	4AA33-160601-F02
Juniper	Inhibited	Approx. 23m³	24		
Casuarina	Inhibited	Approx. 23m³	24		
Miscanthus	Inhibited	Approx. 23m³	24		
Timothy grass	Inhibited	Approx. 23m³	24	Panasonic Product Analysis Center	4AA33-160701-F01
Humulus japonicus	Inhibited	Approx. 23m³	24	Panasonic Product Analysis Center	1V332-180301-F01

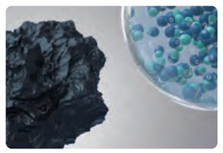
Results may vary based on usage, and seasonal and enviroment variables (temperature and humidity). nanoe™ X and nanoe™ inhibit activity or growth of viruses, but do not prevent infection.

nanoe™X

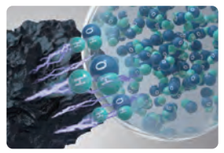
Inhibition of hazardous substances known to be found in PM2.5

Breakdown effects of aromatic carboxylic acid (benzoic acid) and paraffin (hexadecane), harmful substances, have been verified.

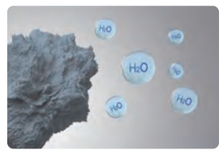
How nanoe™ X Inhibits Hazardous Substances



nanoe™ X reliably reaches hazardous substance.

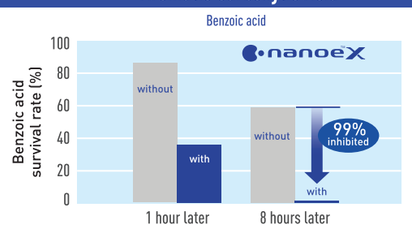


Hydroxyl radicals denature hazardous substances proteins.

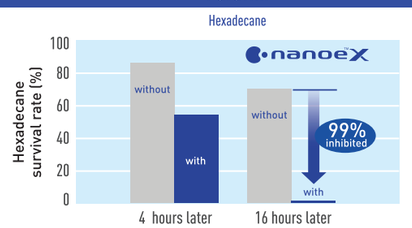


Hazardous substance is inhibited.

Aromatic Carboxylic Acid



Paraffin



[Representative evidence]

** : Units based on Panasonic standards

Hazardous substances		Result**	Capacity	Time (Hr.)	Testing organisation	Report No.
Pollutants	**Paraffin (Hexadecane)**	99% inhibited	Approx. 23m³	16	Panasonic Product Analysis Center	Y17NF089
Pollutants	**Aromatic carboxylic acid (Benzoic acid)**	99% inhibited	Approx. 23m³	8	Panasonic Product Analysis Center	Y17NF096
Carcinogen	**Benz [a] anthracena (BaA)**	78% inhibited	36L	8	Panasonic Product Analysis Center	Y13NF141
Carcinogen	**Benzo [b] fluoranthene (BbF)**	79% inhibited	36L	8	Panasonic Product Analysis Center	Y13NF142
Carcinogen	**Benzo [a] pyrene (BaP)**	97% inhibited	36L	8	Panasonic Product Analysis Center	Y13NF143
Carcinogen	**Indeno [1,2,3-cd] pyrene (IcP)**	97% inhibited	36L	8	Panasonic Product Analysis Center	Y13NF144
Carcinogen	**Dibenzo [a,h] anthracene (Dha)**	81% inhibited	36L	8	Panasonic Product Analysis Center	Y13NF145

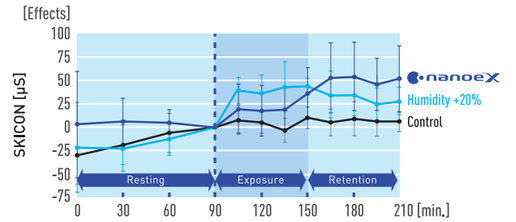
Results may vary based on usage, and seasonal and enviroment variables (temperature and humidity). nanoe™ X and nanoe™ inhibit activity or growth of viruses, but do not prevent infection.

nanoe™X

Moisturised skin, straighter & sleeker hair

nanoe™ X combines with natural sebum to coat the skin, leading to smooth, well-hydrated skin. Furthermore, the abundant moisture found in nanoe™ X hydrates the hair, contributing to straighter, sleeker hair.

nanoe™ X achieved an improvement in skin moisture content equivalent to a 20 percentage point increase in environmental humidity.



[Representative evidence]

** : Units based on Panasonic standards

Skin and hair	Result**	Capacity	Time (Hr.)	Testing organisation	Report No.
Skin	**Effective**	Approx. 34m³	1	Panasonic Product Analysis Center	USG-KT-14K-012-TM
Skin	**Effective**	Standard household	28 days	FCG Research Institute, Inc.	19104
Hair	**Effective**	Approx. 46m³	8 Hr. × 15 days	Panasonic Product Analysis Center	USD-KS-15S-009-TM

Results may vary based on usage, and seasonal and enviroment variables (temperature and humidity). nanoe™ X and nanoe™ inhibit activity or growth of viruses, but do not prevent infection.

Test reports of nanoe™ X

The effects of nanoe™ X have been proven through experiment tests conducted by institute and laboratory. It has also been verified by the relevant authority.



Indonesia
PT. Anugrah Analisis Sempurna



Singapore
Temasek Polytechnic



Malaysia
SIRIM Berhad



Vietnam
Pasteur Institute



Thailand
King Mongkut`s University of Technology Thonburi

nanoeX

Inside Cleaning

How inside cleaning works

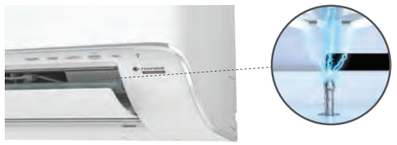
1 Power "OFF"



First, the air conditioner has to be switched off.

Remark:
Main power must be switched on for the entire duration.

2 nanoe™ X runs on Fan Operation



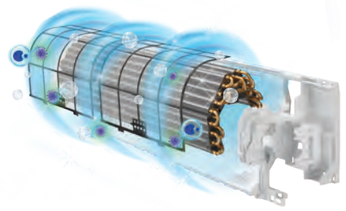
Fan Operation : ON
Flap : Slightly open
nanoe™ Technology LED : ON

nanoe™ X device applies high voltage to the moisture collected in the air to produce water particles that contain hydroxyl radicals.

The indoor unit will automatically run on Fan Operation for 2.5 hours during the inside cleaning process. The flap will open slightly, allowing airflow to circulate the hydroxyl radicals and perform inside cleaning within the air conditioning unit.

3 Effective inhibition with hydroxyl radicals from nanoe™ X Inside Cleaning*

nanoe™ X inhibits bacteria and viruses through the airflow route within 2.5 hours during the inside cleaning process.



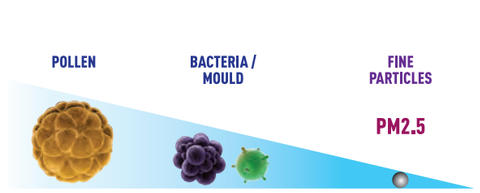
Substance Name	Target Parts	Result	Capacity	Time (Hr.)	Testing Organisation	Report No.
Bacteria *Eschelichia coli* NBRC3301	Filter	99% inhibited (compared to non-operation)	42.8m³	2.5	Protectea,Ltd	PR190803
	Heat exchanger fin	99% inhibited (compared to non-operation)	42.8m³	2.5	Protectea,Ltd	PR190803
	Air outlet	99% inhibited (compared to non-operation)	42.8m³	2.5	Protectea,Ltd	PR191102
Virus *Eschelichia coli Phage* QB NBRC20012	Filter	99% inhibited (compared to non-operation)	42.8m³	2.5	Protectea,Ltd	PR190803
	Heat exchanger fin	99% inhibited (compared to non-operation)	42.8m³	2.5	Protectea,Ltd	PR190803
	Air outlet	99% inhibited (compared to non-operation)	42.8m³	2.5	Protectea,Ltd	PR191102

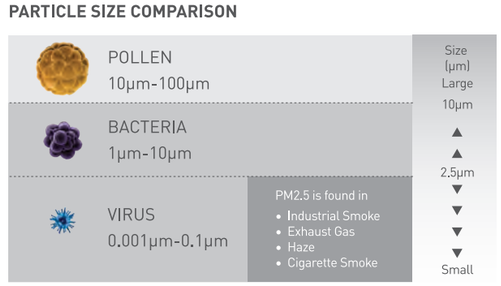
* Applicable to X-PREMIUM INVERTER R32 and X-DELUXE INVERTER R32 only.

nanoe-G

What is PM2.5?

"Particulate matter," also known as PM is made up of a number of components including extremely small particles and liquid droplets. Sized at less than 2.5 micrometers (PM2.5), these particles are said to pose health problems as they can easily enter our lungs.





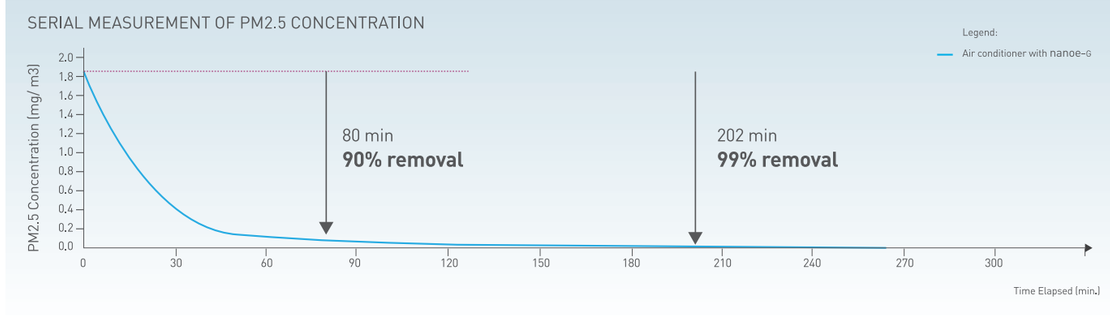
Sources of PM2.5

PM2.5 can be found suspended in the air, including dust, dirt, smoke and liquid droplets. These fine particles come from man-made sources such as the combustion of fossil fuels, open burning and industrial processes as well as natural ones, which include sea sprays and dust carried by strong winds.





PM2.5 Removal Efficiency Based On Time



[Representative evidence]

** : Units based on Panasonic standards

	Substances name	Result**	Capacity	Time (Hr.)	Testing organisation	Report No.
Airborne	**Cigarette smoke [as PM2.5]**	Removed by 99% [compared to the initial concentration]	23m³	202 mins.	FCG Research Institute, Inc.	25034

WALL-MOUNTED

Split Type	X-PREMIUM INVERTER R32		X-DELUXE INVERTER R32		STANDARD INVERTER R32		STANDARD NON-INVERTER R32		
Cooling Models	CS-XU10XKH-1 CS-XU13XKH-1	CS-XU18XKH-1 CS-XU24XKH-1	CS-XPU10XKH-1 CS-XPU13XKH-1	CS-XPU18XKH-1 CS-XPU24XKH-1 CS-XPU28XKH-1	CS-PU9XKH-1 CS-PU12XKH-1 CS-PU18XKH-1	CS-PU24XKH-1	CS-PN9WKH-1 CS-PN12WKH-1	CS-PN18XKH-1B CS-PN24XKH-1	CS-PN28VKH-1
COMFORT									
iAUTO-X	●	●							
Powerful Mode			●	●	●	●	●	●	
iAUTO									●
Humidity Sensor	●	●							
ECO Mode with A.I.	●	●	●	●	●	●			
Inverter Control	●	●	●	●	●	●			
Sleep Mode	●	●	●	●	●	●	●	●	●
Quiet Mode	●	●	●	●	●	●	●	●	●
Soft Dry Operation Mode	●	●	●	●	●	●	●	●	●
Personal Airflow Creation	●	●		●					
Airflow Direction Control (Up & Down)			●		●	●	●	●	●
Manual Horizontal Airflow Direction Control			●		●	●	●	●	●
CLEANER AIR									
nanoe™X	●	●	●	●					
nanoe-G	●	●	●	●					
Odour-Removing Function	●	●	●	●	●	●	●	●	●
Removable, Washable Panel	●	●	●	●	●	●	●	●	●
CONVENIENCE									
24-Hour Dual ON & OFF Real Setting Timer	●	●	●	●	●	●			
24-Hour ON & OFF Real Setting Timer							●	●	●
LCD Wireless Remote Control	●	●	●	●	●	●	●	●	●
Wireless LAN Remote Control For Internet Connection	● (Built-in)	● (Built-in)	● (Built-in)	● (Built-in)	● (Optional)	● (Optional)			
Wired Remote Control	● (Optional)	● (Optional)	● (Optional)	● (Optional)	● (Optional)	● (Optional)	● (Optional)	● (Optional)	● (Optional)
RELIABILITY									
Random Auto Restart (32 Restart Patterns)	●	●	●	●	●	●	●	●	●
Blue Fin Condenser	●	●	●	●	●	●	●	●	●
Long Piping (Numbers indicate the maximum pipe length)	20m	30m	20m	30m	20m (PU9/12) 30m (PU18)	30m	20m	30m	30m
Top-Panel Maintenance Access	●	●	●	●	●	●	●	●	●
Self-Diagnostic Function	●	●	●	●	●	●			

COMFORT

iAUTO-X
Come home to ultra-fast cooling, and then enjoy continuous comfort Shower Cooling that evenly distributes cool air. Reactivate faster cooling with a second press of the iAUTO-X button.

POWERFUL MODE
Press the POWERFUL mode to cool your room faster by 18% during startup to provides fast comfort with full power and a strong airflow.

iAUTO
Automatically switches fan speed for faster cooling with just one touch of a button.

HUMIDITY SENSOR
Controls relative humidity below 60% for ideal sleep.

ECO MODE WITH A.I.
Auto-adjusts to the optimal ECO level based on heat load conditions and air conditioning cooling capacity.

INVERTER CONTROL
Varies the rotation speed of the compressor for higher energy savings.

SLEEP MODE
Delays off timer with temperature control for better sleep.

QUIET MODE
Enjoy the comfort of running your air conditioner at night for a relaxing sleep.

SOFT DRY OPERATION MODE
Starts with cooling to dehumidify, then provides continuous breeze at a low frequency to keep a room dry without much change to the temperature.

PERSONAL AIRFLOW CREATION
Vertical and horizontal airflow patterns can be combined as desired to achieve optimum comfort, with operation possible by remote even from a distance.

AIRFLOW DIRECTION CONTROL (UP & DOWN)
Vertical airflow patterns can be controlled with operation by remote, even from a distance.

MANUAL HORIZONTAL AIRFLOW DIRECTION CONTROL
Horizontal airflow patterns can be manually adjusted.

CLEANER AIR

nanoe™ X
nanoe™ X effectively deodorises and inhibits various pollutants for a fresher and cleaner living space.

nanoe-G
nanoe-G works effectively on removing dust particles as small as PM2.5.

ODOUR-REMOVING FUNCTION
With this function, there's no unpleasant odor when the unit starts up. That's because the fan remains off momentarily, while the source of the odour inside the air conditioner is suppressed.

The unit must be in cool or dry mode and the fan speed must be set to automatic.

REMOVABLE, WASHABLE PANEL
Gives you easy access to the filter as well as making the unit easy to clean.

CONVENIENCE

24-HOUR DUAL ON & OFF REAL SETTING TIMER
This feature enables you to preset two different sets of start/stop operation timer (hour and minute) within a 24-hour time frame.

24-HOUR ON & OFF REAL SETTING TIMER
The exact operating time (hour and minute) of the air conditioner can be set in advance. From here on, the unit will operate in accordance to these preset hours every day until the system is reset.

LCD WIRELESS REMOTE CONTROL
Easy control of the unit from anywhere in the room.

Wireless LAN REMOTE CONTROL FOR INTERNET CONNECTION
Control air conditioners remotely by turning your mobile device into a remote controller using internet connection.

WIRED REMOTE CONTROL
Control at the unit from fixed location where wired remote controller is installed.

RELIABILITY

RANDOM AUTO RESTART
When multiple units are connected and there is a power outage, they will turn on at different times in order to not spike the power supply.

BLUE FIN CONDENSER
Extra protection from the elements with a longer lasting coil.

LONG PIPING
Long piping offers more flexible installation options.

TOP-PANEL MAINTENANCE ACCESS
Easy access for maintenance.

SELF-DIAGNOSTIC FUNCTION
Should a malfunction occur, the unit diagnoses the problem and shows the corresponding alphanumeric code. This allows for quicker servicing.

Model Line-Up

Horse Power (HP)	1.0HP	1.5HP	2.0HP	2.5HP	3.0HP	
Capacity (Btu/h)	9,000/10,000	12,000/13,000	18,000	24,000	28,000	Features
WALL-MOUNTED **X-PREMIUM INVERTER R32** Page 32-33	 **CS-XU10XKH-1** [CU-XU10XKH-1]	 **CS-XU13XKH-1** [CU-XU13XKH-1]	 **CS-XU18XKH-1** [CU-XU18XKH-1]	 **CS-XU24XKH-1** [CU-XU24XKH-1]		nanoeX nanoe X Generator Mark 2 · nanoe-G · Auto X Intelligent, Dynamic, Cool. · Humidity Sensor · Built-in · NEW AEROWINGS · Inverter · ECO+A.I.
WALL-MOUNTED **X-DELUXE INVERTER R32** Page 34-35	 **CS-XPU10XKH-1** [CU-XPU10XKH-1]	 **CS-XPU13XKH-1** [CU-XPU13XKH-1]	 **CS-XPU18XKH-1** [CU-XPU18XKH-1]	 **CS-XPU24XKH-1** [CU-XPU24XKH-1]	 **CS-XPU28XKH-1** [CU-XPU28XKH-1]	nanoeX nanoe X Generator Mark 1 · nanoe-G · Built-in · AEROWINGS · POWERFUL · Inverter · ECO+A.I.
WALL-MOUNTED **STANDARD INVERTER R32** Page 36-37	 **CS-PU9XKH-1** [CU-PU9XKH-1]	 **CS-PU12XKH-1** [CU-PU12XKH-1]	 **CS-PU18XKH-1** [CU-PU18XKH-1]	 **CS-PU24XKH-1** [CU-PU24XKH-1]		BIG FLAP (CS-PU9/12/18XKH-1) · AEROWINGS (CS-PU24XKH-1) · POWERFUL · Inverter · ECO+A.I.
WALL-MOUNTED **STANDARD NON-INVERTER R32** Page 38-39	 **CS-PN9WKH-1** [CU-PN9WKH-1]	 **CS-PN12WKH-1** [CU-PN12WKH-1]	 **CS-PN18XKH-1B** [CU-PN18XKH-1B]	 **CS-PN24XKH-1** [CU-PN24XKH-1]	 **CS-PN28VKH-1** [CU-PN28VKH-1]	BIG FLAP (CS-PN9/12WKH-1, CS-PN28VKH-1) · AEROWINGS (CS-PN18XKH-1B, CS-PN24XKH-1) · POWERFUL (CS-PN9/12WKH-1, CS-PN18XKH-1B, CS-PN24XKH-1) · Auto Intelligent Auto Mode (CS-PN28VKH-1)

( ): Outdoor Unit Cooling Models