

# Air Purifier L CO 171 LCC MC70TVMM NEW MCK55UVMM Humidifying type



New concept for a humidifying air purifier in a slim tower design.

## Model debut in a compact and stylish design!

Capacity in turbo operation mode

Humidification

**Dust collection** 

Deodorisation



**Double method** 



Air purification only

Airflow 5.5 m³/min. Airflow

 $\begin{array}{l} \text{Humidification +} \\ \text{air purification} \\ \text{Airflow} \\ \mathbf{5.5}_{\text{m}^3/\text{min.}} \end{array}$ 

Applicable room area ~41m²\*1

Approximate room cleaning time 13.2m²/11min.

#### Humidifying capacity\*2

 $500_{\text{mL/h}}$ 

Applicable room area Prefab:~23m² Wooden:~14m²

#### Note

- \*1 Calculated by test method based on Japan Electrical Manufacturers' Association Standard JEM1467.
  - Rough estimate assuming turbo operation.
- \*2 Humidifying capacity by JEM1426 (electric humidifier) with turbo operation at temperature of 20°C and humidity of 30%.



With wireless remote controller





<b>≻</b> D	aikin's	unique	Double	metho	d——	— P.03
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➤ Three steps to decompose ————— P.04 harmful substances

➤ The 3 C's of Streamer — P.05-06

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## Daikin's unique Double method

#### **Outside**

## Active plasma ion flow out

The plasma ion technology uses plasma discharge to release ions into the air, which combine with components of the air to form active species with strong oxidizing power like OH radical. They attach to the surface of fungi and allergens and decompose proteins in the air by oxidation.

Daikin's plasma ions have been proved safe. Safety concerning effect on skin, eyes, and respiratory organs

Testing organization: Life Science Laboratories, Ltd.

Name of test: repeated-dose toxicity test

Test number: 12-II A2-0401

#### Mechanism of reduction by active plasma ions

Note:

The number of ions per 1cm³ of air blown into the atmosphere measured near the air outlet during operation with maximum airflow. Test conditions: temperature 25°C, humidity 50%.





Image is for illustrative purposes

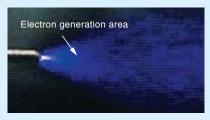


#### Inside

## Streamer decomposes by suction

Streamer, a type of plasma discharge, decomposes hazardous chemical substances.

The decomposition power is comparable to thermal energy of about 100,000°C.\*2



\*2 Comparison of oxidation decomposition. This does not mean temperature will become high

#### Mechanism of decomposition by Streamer



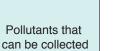
Streamer emits high-speed electrons.



The electrons collide and combine with nitrogen and oxygen in the air to form four kinds of decomposing elements with decomposition power.



The decomposing elements provide decomposition power.



and deodorised

by filter



House dust



City exhaust gas (trichloroethylene,etc.)



Dog epidermis

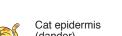


Ammonia



Pollen (cedar,etc.)





Garbage

odour



substances Hamster

Yellow dust

VOC-type

chemical



epidermis (dander)



Cooking odour



PM2.5



Moulds



Pet hair



Cigarette smoke odour

## Three steps to decompose harmful substances

1

### **Powerful suction**

Takes in dust over a wide area from 3 directions.



2

## Effective capture of pollutants

Catches dust and pollutants effectively with an electrostatic HEPA filter.



3

## **Decomposition**

Uses Daikin's Streamer technology to decompose harmful substances caught on the filter by oxidation. \*1





Note:

(Reduction of gases) Testing organization: Life Science Research Laboratory.

Test method: After operating a gasoline engine for 10 minutes (when particulate concentration reached 60mg/m³), operated the air purifier for 80 minutes to absorb polluting dust emitted from the engine.

Operated this air purifier for 24 hours in a closed space of 200L and measured the effect to decompose gases. Test result: Compared with a test without Streamer irradiation, gas components were reduced by 63% in 9 hours. Test number: LSRL-83023-702.

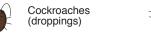
Test unit: Tested with MCK70N (Japanese model)



Indoor air pollutants (formaldehyde, etc.)



Diesel exhaust particulates



Wheat flour

Pet odour



House dust mites (droppings and dead mites)



Body odour



Mould odour



Floating viruses



Floating mould



Attached viruses



Attached bacteria



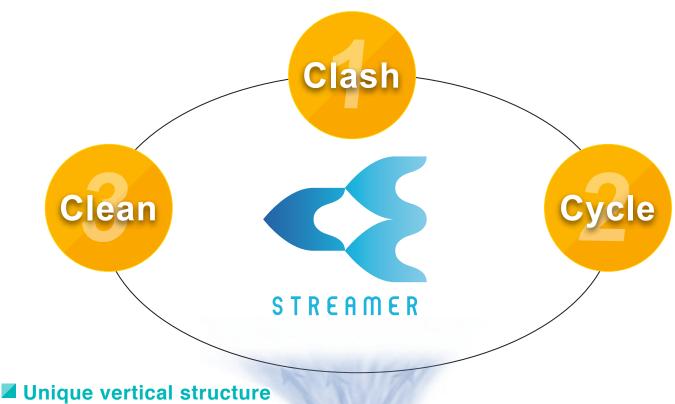
Pollutants that can be reduced

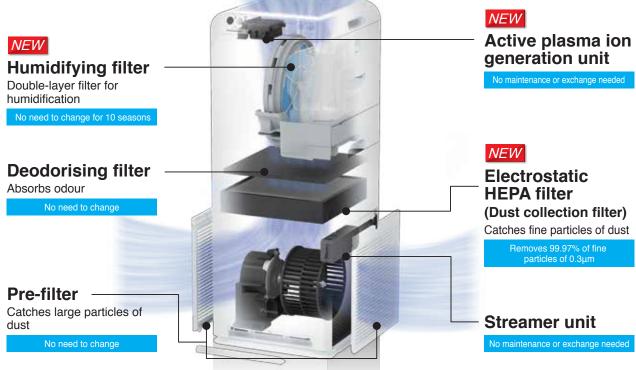
Attached odour

04

## The 3 C's of Streamer

### The Streamer symbol consists of three C's





It may become necessary to change out items that usually do not require replacing due to environmental and operational conditions.

About the dust collection and deodorising capacity of air purifiers:

- Not all harmful substances in cigarette smoke (carbon monoxide, etc.) can be removed.
- Not all odour components that emanate continuously (building material odours and pet odours, etc.) can be removed.

This product is not a medical device, medical treatment device or a therapeutic good.

This product is not intended to have any therapeutic use or to be used for the diagnosis, treatment, relief or prevention of illness.

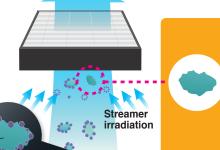
Arranged vertically

## 1 Clash

Decomposes harmful substances on the dust collection filter by oxidation!

Harmful gaseous chemical substances attach to the surface of floating substances in the air. Gaseous chemical substance

Particulate matter (floating substance)



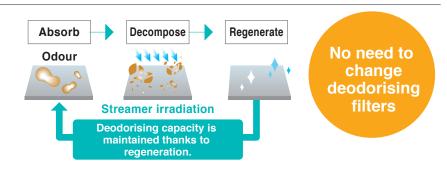
The dust collection filter catches the floating substances with the attached harmful gases and Streamer decomposes the harmful gases by oxidation. 11

## 2 Cycle

## The deodorising filter absorbs and decomposes odour.

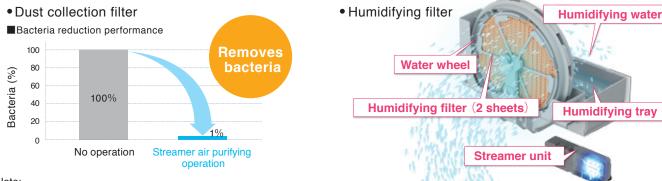
The deodorising capacity is maintained because the adsorbing capacity regenerates.

(Comparison with conventional Daikin products. Evaluation under conditions set by Daikin).\*2



## 3 Clean

#### Removes bacteria from dust collection filter\*3, humidifying filter\*4, and humidifying water.\*5



#### Note:

- \*1 (Reduction of gases) Testing organization: Life Science Research Laboratory. Test method: After operating a gasoline engine for 10 minutes (when particulate concentration reached 60mg/m³), operated the air purifier for 80 minutes to absorb polluting dust emitted from the engine. Operated this air purifier for 24 hours in a closed space of 200L and measured the effect to decompose gases. Test result: Compared with a test without Streamer irradiation, gas components were reduced by 63% in 9 hours. Test number: LSRL-83023-702. Test unit: Tested with MCK70N (Japanese model).
- \*2 Placed the air purifier and an odour component, acetaldehyde, in a box of 21 m³ and operated the air purifier. Examined increase of concentration of product (CO2) generated by decomposition of acetaldehyde by Streamer (evaluation by Daikin).

  Test unit: Tested with MCK55S (Japanese model), a model equivalent to MCK55U series.
- \*3 Testing organization: Japan Food Research Laboratories. Test number: 15044988001-0201. Test method: Attached a test piece inoculated with bacteria liquid on the upstream side of a dust collection filter installed in an air purifier, and operated it in a test area of 25 m³. Counted the number of live bacteria after five hours. Test object: A type of bacterium. Object part: Dust collection filter. Test result: Reduced by more than 99% in five hours. Test unit: Tested with MCK55S (Japanese model), a model equivalent to MCK55U series (turbo operation).
- \*4 (Removal of bacteria from humidifying filter) Works on objects caught by the humidifying filter. Testing organization: Japan Food Research Laboratories. Test number: 15044989001-0101
  Test method: Attached a test piece inoculated with bacteria liquid on the upstream side of a humidifying filter installed in an air purifier, and operated it in a test area of 25 m³. Counted the number of live bacteria after five hours. Object part: Humidifying filter. Test result: Reduced by more than 99% in five hours. Test unit: Tested with MCK55S (Japanese model), a model equivalent to MCK55U series (turbo operation).
- \*<sup>5</sup> (Reduction of bacteria in humidifying tray) Testing organization: Japan Food Research Laboratories. Test number: 15044985004-0101.
  Test method: Performance evaluation test by voluntary standard of Japan Electrical Manufacturers' Association (HD-133). Test object: Moulds and bacteria in humidifying water. Test result: Reduced by more than 99% in 24 hours. Test unit: Tested with MCK55S (Japanese model), a model equivalent to MCK55U series (turbo operation).

This product can be used to improve the quality of the air by removing airborne hazardous chemical substances, allergens, mould, bacteria, and viruses, etc. However, this product is not intended for the creation of sterile environments or for the prevention pathogen infections.

This description relates to the Streamer Technology devised by Daikin, but not to this Air Purifier. Test results from use of the Streamer Technology are generated according to prescribed test methods conducted by Daikin. Although the Streamer Technology is contained within this Air Purifier, this does not mean that precisely the same results will be experienced using this Air Purifier. Actual results may differ depending on the conditions of product installation and use of the actual product, etc.

## New Stylish and Compact Design

### Flexible choice of where to place the unit



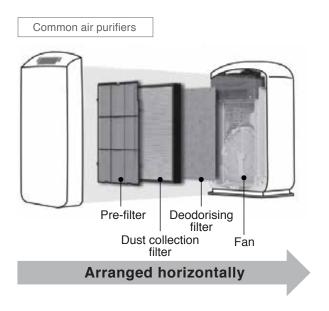






## Powerful Suction and Reduced Operation Sound

## Compact, effective and quiet thanks to the new, innovative structure





### Powerful suction in 3 directions

Effectively takes in dust over a wide area



### Operation sound sensed by people is reduced

(Comparison with conventional Daikin products. In turbo operation)

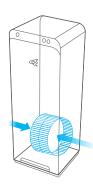
## The key is the sound of airflow from the air outlet

Daikin succeeded in reducing the operation sound sensed by people by adopting a wide air outlet and positioning the fan below the filters for soundproofing effect.



#### The fan is positioned below

Positioned farthest from people's ears. The filters also provide a soundproofing effect, so the operation sound is not disturbing.



## NEW Featuring Electrostatic HEPA filter

### Features high-performance filter to catch fine particles of dust

### **Removes 99.97% of** fine particles of 0.3µm \*1

#### Note:

This is removal performance of filter and not removal performance for entire room.



The filter collects dust efficiently with electrostatic forces.

It is not prone to clogging compared with unelectrified HEPA filters which collect particles only by the fineness of the mesh.



Therefore, a larger amount of air can pass through the filter.



The filter can purify a larger amount of air!

#### Comparison between Electrostatic HEPA Filter and Non-electrostatic Filter

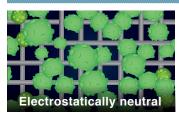
#### Electrostatic HEPA Filter



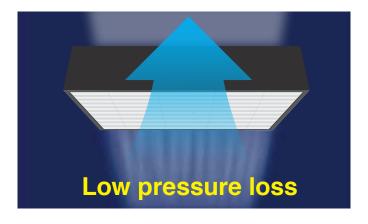
Filter fiber itself is charged with static electricity, and collects particles efficiently.

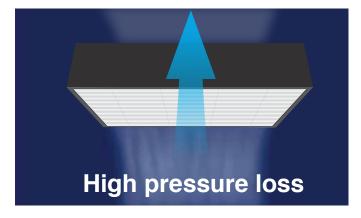
Doesn't clog easily because of low pressure loss.

#### Non-Electrostatic Filter



Because it catches particles relying only on mesh size, it is necessary to make mesh finer, making it easy to be clogged.





About the dust collection and deodorising capacity of air purifiers:

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- Not all odour components that emanate continuously (building material odours and pet odours, etc.) can be removed.

This product is not a medical device, medical treatment device or a therapeutic good.

This product is not intended to have any therapeutic use or to be used for the diagnosis, treatment, relief or prevention of illness. If you have a health concern or are not feeling well, please consult a health care professional.

## Powerful Humidification to Protect against Air Dryness and Viruses

### Benefit of Humidification

Protects the skin, the throat and the nostril from dryness.



Protects against viruses by maintaining appropriate humidity of the room.



## Select the target humidity from 3 levels

(The target humidity is a rough estimation.)



Low Standard High 40% 50% 60%

## Indicates humidity of the room



## Eliminates bacteria on the humidifying filter

Effect after five hours in a test space of about 25 m3.

This is an effect in a test space and not a test result in an actual operation space.



### Reduces bacteria in humidifying water by Streamer<sup>2</sup>

The humidifying tray needs regular maintenance (once in about a week). This is not a verification result in an actual operation environment.

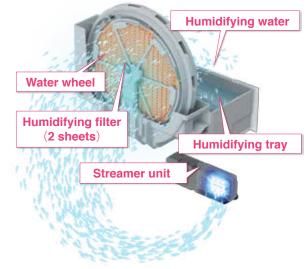
The humidifying tray is irradiated with Streamer as well as the humidifying filter to reduce bacteria in the water.

By keeping the water and its surroundings clean, the air purifier provides clean air and humidity to the room.

Use tap water to fill the tank, and replace with fresh water every day. Using well water or water from water purifiers makes bacteria develop faster.

#### Features for clean humidification

- The humidifying tray is equipped with a silver ion agent
- A water wheel system to keep the humidifying filter from being directly soaked in water



#### Note

\*1 (Removal of bacteria from humidifying filter) Works on objects caught by the humidifying filter.

Testing organization: Japan Food Research Laboratories.

Test number: 15044989001-0101.

Test method: Attached a test piece inoculated with bacteria liquid on the upstream side of a humidifying filter installed in an air purifier, and operated it in a test space of 25 m³. Counted the number of live bacteria after five hours.

Object part: Humidifying filter.

Test result: Reduced by more than 99% in five hours.

Test unit: Tested with MCK55S (Japanese model), a model equivalent to MCK55U series (turbo operation).

\*2 (Reduction of bacteria in humidifying tray) Testing organization: Japan Food Research Laboratories.

Test number: 15044985004-0101.

Test method: Performance evaluation test by voluntary standard of Japan Electrical Manufacturers' Association (HD-133).

Test object: Moulds and bacteria in humidifying water.

Test result: Reduced by more than 99% in 24 hours.

Test unit: Tested with MCK55S (Japanese model), a model equivalent to MCK55U series (turbo operation).

## Convenience

## "Triple detection" sensor to quickly detect PM2.5

Equipped with a high sensitivity dust sensor that distinguishes small particles such as PM2.5 and larger particles of dust and reacts accordingly. Along with the odour sensor, "triple detection" of dust, PM2.5 and odour is provided.



House dust (small particle) (2.5μm or smaller)

#### An air purifier to remove PM2.5

Removes 99% of particles between 0.1µm and 2.5µm\*1 in size

## Entry of new particles from outdoors, for example by ventilation, is not considered.

"PM2.5" refers to general fine particulate matters sized 2.5μm or smaller. This air purifier has not been proved to remove very fine particles of less than 0.1μm.

This product does not remove all harmful substances in the air. The test results are effects in a closed space of 32m³ and not in an actual operation space.

Test unit: Tested with MCK55S (Japanese model), a model equivalent to MCK55U series.

#### Note:

\*1 Test method: Japan Electrical Manufacturers' Association Standard JEM1467. Criterion: Remove 99% of fine particulate matters of 0.1 to 2.5μm in a closed space of 32m³ within 90 minutes. (Converted to a value in a test space of 32m³)

## Choose from the various operation modes

- Auto Fan mode
- Anti-pollen mode
- Econo mode for energy saving

#### Moist mode

Humidity is automatically adjusted to be gentle on the skin and throat.



#### Other useful features

## ■ Filter cleaning without opening the panel

Just vacuum with a cleaner. No need to open the panel to clean the filter.



#### Equipped with a remote controller

Convenient for operation from a distant position.



#### Easy-to-detach water tank

The water tank is conveniently placed in a high position for easy detaching.

The compact size of the tank makes it easy to replenish water in a sink or a wash basin.



#### Equipped with roll-away casters Easy to move to clean the floor. (option)



## Large Airflow Type Air Purifier



**Dust collection** 

Deodorisation

#### Air purification

Airflow 7.0<sub>m³/min</sub>

Applicable room area : ~46m<sup>2</sup> \*<sup>2</sup>

Approximate room cleaning time: 13.2m²/10min.



- This model has no humidifying function
- Capacity during turbo mode



Powerful suction with large airflow of 7.0m<sup>3</sup>/min.

Large airflow of 7.0m3/min. quickly draws in air from three directions to rapidly clean the air in the room.

Quiet operation even in turbo mode

48dB during turbo operation



remote controller

### **Electrostatic dust** collection system effectively catches dust

An electrostatic dust collection system uses electrical charges to effectively catch dust. It features long-lasting dust collection capacity.

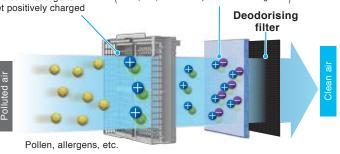
#### Plasma ionizer

Mould, mites (droppings and dead mites), pollen, and other allergens get positively charged

#### Pleated filter

MC70TVMM

Caught by the negatively-charged filter Front(white): Dust collection filter Rear(blue): Titanium apatite deodorising filter



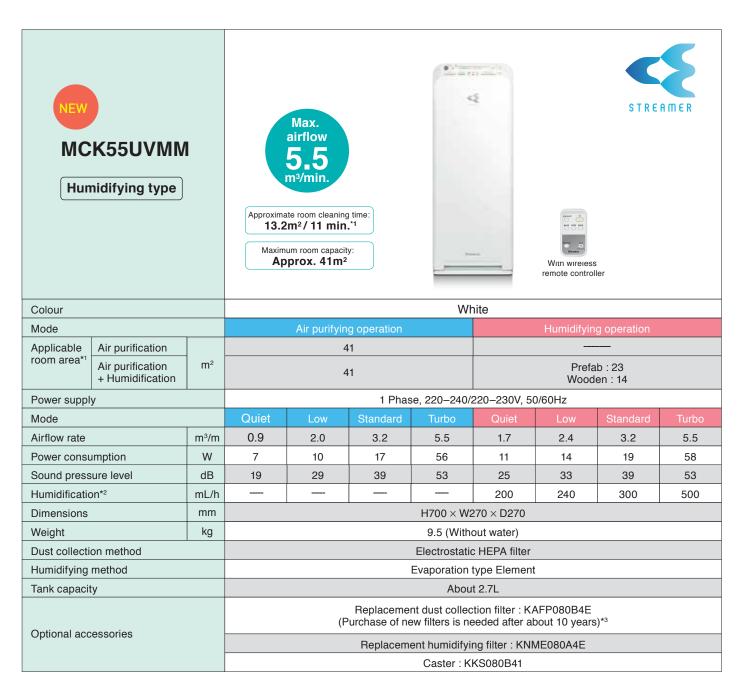
### No need to buy additional pleated filter for 10 years\*

Five filters sheets are included as standard equipment. (1 sheet installed. 4 sheets for replacement.)

#### Easy filter changing Replacement Just remove filters are stored in the the filter and install a new Replacement (about every

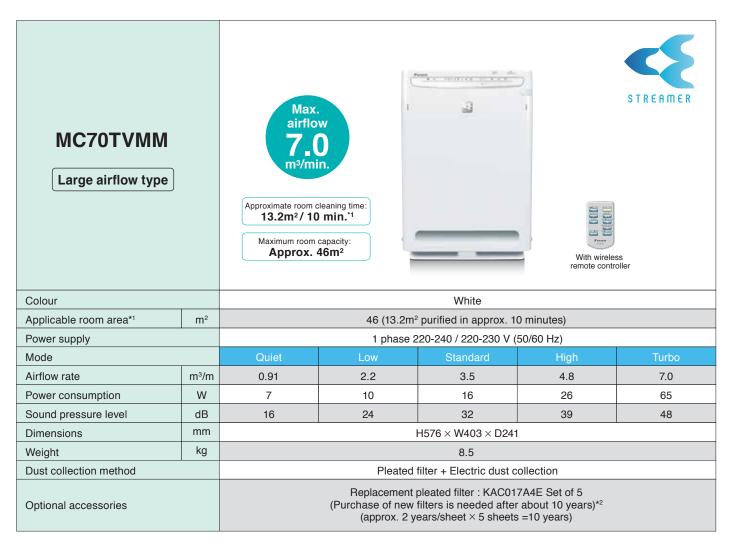
- \*2 Calculated by test method based on Japan Electrical Manufacturers' Association Standard JEM1467. Operation during turbo mode has been approximated.
- \*3 Verified by test method based on Japan Electrical Manufacturers' Association Standard JEM1467. The standard assumes five or more cigarettes are smoked per day. Not all harmful substances in cigarette smoke (carbon monoxide, etc.) can be removed. More frequent filter changing may be needed depending on operating conditions.

## Specifications



#### Note

- \*1 Calculation based on testing method of the Japan Electrical Manufacturers ,Association standard JEM1467.
- \*2 Humidification amount changes in accordance with indoor and outdoor temperature and humidity. Measurement condition: 20°C in temperature, 30% in humidity.(JEM1426)
- \*3 Verified by test method based on Japan Electrical Manufacturers' Association Standard JEM1467. The standard assumes five or more cigarettes are smoked per day. Not all harmful substances in cigarette smoke (carbon monoxide, etc.) can be removed. More frequent filter changing may be needed depending on operating conditions.



#### Note:

- \*1 Calculation based on testing method of the Japan Electrical Manufacturers ,Association standard JEM1467.
- \*2 Verified by test method based on Japan Electrical Manufacturers' Association Standard JEM1467. The standard assumes five or more cigarettes are smoked per day. Not all harmful substances in cigarette smoke (carbon monoxide, etc.) can be removed. More frequent filter exchange may be needed depending on operating conditions

About the dust collection and deodorising capacity of air purifiers:

- Not all harmful substances in cigarette smoke (carbon monoxide, etc.) can be removed.
- Not all odour components that emanate continuously (building material odours and pet odours, etc.) can be removed.

## **Functions**

	MCK55UVMM	MC70TVMM
Humidification		_
Temperature and humidity sensors		_
Dust (PM2.5/dust) and odour sensor lamp		_
Dust and odour sensor lamp	_	
Streamer discharge		
Active plasma ion		_
Electrostatic HEPA filter		1
Plasma dust collection	_	
Pleated dust collection filter	_	
Titanium apatite deodorising filter	_	
Deodorising filter		
Moist mode		_
Econo mode		_
Auto fan mode		
Anti-pollen mode		
Sleep mode	_	•
Turbo mode		
Off timer	_	
Child proof lock		
Brightness adjustment	0	0
Auto-restart after power failure		_
Stabilizer free	•	_

#### Temperature and humidity sensors

Humidity is detected and shown by an easy-to-understand indicator.

## Dust (PM2.5/dust) and odour sensor lamp

"Triple detection" is performed by a dust sensor (which distinguishes small particles, such as PM2.5 and larger particles of dust, and reacts accordingly) and an odour sensor.

#### Dust and odour sensor lamps

Dust and odours are detected and shown in 3 easy-to-understand colours to indicate the level.

#### Streamer Discharge

This function quickly decomposes odours and allergens, etc., with high speed electrons that have a powerful ability to oxidize.

#### Active plasma ion

The active plasma ion technology decomposes odours and allergens in the air by plasma ions with strong oxidizing power.

#### Electrostatic HEPA filter

There is a high-performance filter that catches 99.97% of  $0.3\mu m$  fine particles and requires no changing for 10 years.

#### Plasma dust collection

Dust and pollen are collected by charging them positively while charging the electrostatic dust collection filter negatively.

#### Pleated dust collection filter

Very economical, the air purifier comes standard with 5 replacement filters. You will not have to buy filters for 10 years (1 filter can be used for 2 years).

#### Titanium apatite deodorising filter

Odours and allergens are thoroughly adsorbed by the titanium apatite and then removed.

#### Deodorising filter

Odours and adjuvants are caught on the catalyst and decomposed by the power of Streamer.

#### Moist mode

Automatic control maintains relatively high humidity that is gentle to the throat and the skin.

#### Econo mode

Operation automatically switches only between "Quiet" and "Low" modes in accordance with the degree of polluted air.

#### Auto fan mode

The air purifier is run, without wasteful operation, only in accordance with the level of pollutants in the air, which is detected by the sensor.

#### Anti-Pollen Mode

Switching between "standard" and "low" modes to create a gentle turbulence, pollen is caught before it lands on the floor.

#### Sleep mode

Operation automatically switches only between "Quiet" and "Low" modes in accordance with how polluted the air is. This is recommended for times such as when sleeping.

#### Turbo mode

This convenient mode provides high-power operation to quickly clean the air in a room when, for example, you come home or when you have guests over.

#### Off timer

Operation stop time can be set.

#### Child proof lock

This can be used to prevent small children from mishandling the air purifier.

#### Brightness adjustment

The brightness of the indicator panel lamp can be adjusted.

#### Auto-Restart after Power Failure

The air purifier memorises the settings for mode, airflow, etc., and automatically returns to them when power is restored after a power failure.

#### Stabilizer free

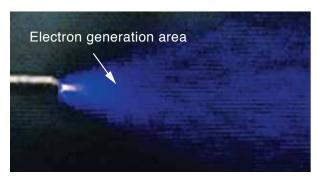
Stabilizer free operation protects the vital components of machine from power fluctuations. With this function installing stabilizer becomes needless (voltage range protection: 180~264V). If power fluctuation is beyond the limit mentioned then a stabilizer is required.

## Daikin's Streamer Technology

No need to change Streamer units

"Streamer Discharge" is a type of plasma discharge which generates high speed electrons that combine with oxygen and nitrogen in the air and turn into active species with strong oxidative decomposition power and thereby eliminate allergens such as mould, mites (droppings and dead mites), and pollen, and hazardous chemical substances such as formaldehyde. Compared to standard plasma discharge (glow discharge), its speed of oxidative decomposition is over 1000 times greater with the same electrical power.

The decomposition power is comparable to thermal energy of about 100,000°C.\*1



Note:

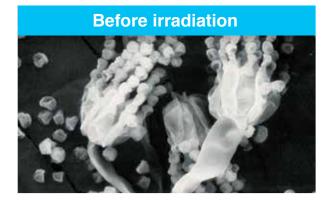
\*1 Comparison of oxidation decomposition.

This does not mean temperature will become high.

These are effects in a Streamer test space and not verification results in an actual operation space.

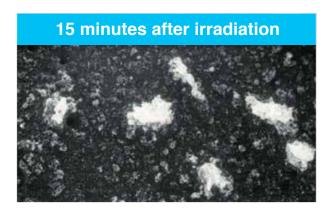
## Streamer decomposes and eliminates allergens such as pollen, mould, and mites (droppings and dead mites) \*2 \*3 Works on objects caught by the filter.











Proved with 6 fungal allergens including Alternaria and Eurotium

Pollen, mould, and mites (dead mites) were placed on the electrode of the Streamer Discharge unit and then photographed through an electron microscope after being irradiated with Streamer Discharge for 15 minutes.

<Joint research with Wakayama Medical University>



#### **Reduction of Influenza Virus**

#### Virus Restraint Performance 100 No Irradiation 90 80 70 Survival rate (%) 60 50 Irradiation No Irradiation 40 30 20 10 Irradiation 0 2 4 Time (h)

Test name: Antibacterial test/Test of removal of virus Testing organization: Kitasato Research Centre for Environmental Science.

Test number: 21\_0026

Test result: Remove 99.9% in an hour (Effects on the substances

caught on a filter).

#### Reduction of Staphylococcus Aureus

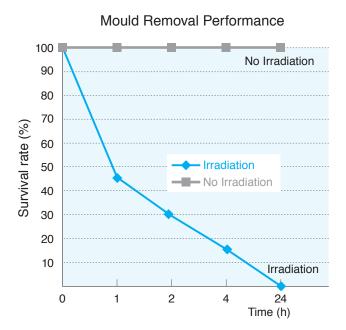
#### Removal Effect of Attached Bacteria (Effect 24 hours later)



Test name: Antibacterial test/Test of reduction of bacteria. Testing organization: Japan Foos Research Laboratories. Test number: 203120769-001.

Test result: Remove 99.99% in 24 hours (Effect on the substances caught on a filter).

#### Reduction of Mould (Cladosporium)

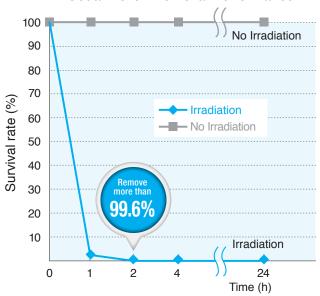


Test name: Antibacterial test/Test of reduction of mould Testing organization: Japan Food Research Centre Test number: 204041635-001

Test result: Remove 99.9% in 24 hours (Effect on the substances caught on a filter).

#### Reduction of Pollen (Cedars)

#### Cedar Pollen Removal Performance



Test name: Verify a decomposition of protein of allergens with any of the following method; ELISA method/Electrophoresis method/Electron microscope method.

Testing organization: Wakayama Medical University

Test number: CZ04B024

Test result: Remove 99.6% in 2 hours.

These are effects in a Streamer test space and not verification results in an actual operation space.

## Daikin's Streamer Technology

No need to change Streamer units

Decompose and eliminate pollen

Eliminated more than

99,6%\*2 in 2 hours!

Decompose and eliminate mould

Eliminated more than

99<sub>8</sub>9%\*3 in 24 hours!

Decompose and eliminate allergens such as mite droppings and dead mites

Eliminated more than

99.61%\*2 in 24 hours!

#### Note:

<sup>2</sup> Testing organization: Wakayama Medical University.

Test conditions: Irradiated allergens with Streamer and checked decomposition of allergen proteins by either the ELISA method, electrophoresis or electron microscopy.

Test result: 99.6% eliminated. (Works on objects caught by the filter)

<sup>3</sup> Measuring method: antibacterial test/mould elimination test Testing organization: Japan Food Research Laboratories.

Testing organization: Japan Food Research La Test number: 204041635-001.

Test result: 99.9% eliminated. (Works on objects caught by the filter)

This product can be used to improve the quality of the air by removing airborne hazardous chemical substances, allergens, mould, bacteria, and viruses, etc. However, this product is not intended for the creation of sterile environments or for the prevention pathogen infections.

This description relates to the Streamer Technology devised by Daikin, but not to this Air Purifier. Test results from use of the Streamer Technology are generated according to prescribed test methods conducted by Daikin. Although the Streamer Technology is contained within this Air Purifier, this does not mean that precisely the same results will be experienced using this Air Purifier. Actual results may differ depending on the conditions of product installation and use of the actual product, etc.

#### ■ A clean technology that's recognised by public institutions in Japan and abroad.

★ Following experiments were practised by third parties based on Daikin industries, Ltd's request.

Target of experiment		★ Public institutions (Testing organization)	Test method
Virus		National Institute of Hygiene and Epidemiology (Vietnam)	CPE and TCID50
		Kitasato Research Center of Environmental Sciences	CPE and TCID50
		Kobe University Graduate School	ELISA method
		Yamagata University	Scanning electron microscope
Bacteria		Japan Food Research Laboratories	PCR method
		The Jikei University	CFU
Mould		Japan Food Research Laboratories	Pour plate culture method
	Pollen based allergens		ELISA method
Allergens	Allergens from animate beings	Wakayama Medical University	
	Fungal allergens	wakayana wedicai oniversity	
	Flour		
Hazardous chemical substances	Adjuvant (DEP)	Yamagata University	ELISA method
	Adjuvant (VOC)	Tohoku Bunka Gakuen University	Damping technique
	Adjuvant inhibiting effect	Wakayama Medical University, National institute for Environmental Studies	ELISA method
	Formaldehyde	Tohoku Bunka Gakuen University	Constant generation method

#### Viruses and bacteria that have been proven to be deactivated by Streamer Technology

- Influenza virus (type A, H1N1)
   Highly virulent avian influenza virus (type A, H5N1)
   Bacillus coli, O-157
- Staphylococcus aureus Tuberculosis bacteria Norovirus Pseudomonas aeruginosa Toxins (enterotoxins)



#### Allergens that have been proven to be decomposed by Streamer Technology

- Fungal allergens: sooty moulds, aspergillus, eurotium, aspergillus niger, fusarium, penicillium
- Pollen based allergens: cedar pollen, alder pollen, birch pollen, Japanese cypress pollen, pencil cedar pollen, bald cypress pollen, mugwort pollen, orchard grass pollen, ragwood pollen, sweet vernal grass pollen, timothy grass pollen, fleawort pollen, Japanese beech
- Allergens from animate beings: house dust mite [dermatophagoides pteronyssinus] (droppings and dead mites), house dust mite [dermatophagoides farinae] (droppings and dead mites), American cockroach (droppings), German cockroach (droppings), flea (droppings), dog epidermis (dander), cat epidermis (dander), hamster epidermis (dander)
- Other: wheat flour

#### Hazardous chemical substances that have been proven to be removed by Streamer Technology

- Formaldehyde\*4 Diesel exhaust particulates (DEP)
- Hazardous chemical substances in exhaust gas: NOx, tetrachlorethylene, benzene, trichloroethylene, dichloroethane, dichloromethane, chloroform
- VOC type hazardous chemical substances: iso-butanol, hexane, styrene, nonanoic acid, trimethyl benzene, xylene, naphthalene, ethyl benzene, toluene, ethyl acetate

#### Note:

\*4 Test method: constant generation method

Test room: 22 to 24 m<sup>3</sup> Temperature: 23 ±3°C Humidity: 50 ±20%

Ventilation condition: When concentration of 0.2 ppm is continually emanated, a removal capacity of 0.08 ppm is maintained at 36 m³/h, which is within the guideline of the Ministry of Health, Labour and Welfare (Japan). (This equates to the ventilation capacity of an approximately 65 m³ room.)

About the dust collection and deodorising capacity of air purifiers:

- Not all harmful substances in cigarette smoke (carbon monoxide, etc.) can be removed.
- Not all odour components that emanate continuously (building material odours and pet odours, etc.) can be removed.

This product is not a medical device, medical treatment device or a therapeutic good.

This product is not intended to have any therapeutic use or to be used for the diagnosis, treatment, relief or prevention of illness. If you have a health concern or are not feeling well, please consult a health care professional.

## Daikin's Active Plasma Ion Technology

No need to change active plasma ion generating units

The plasma ion technology uses plasma discharge to release ions into the air, which combine with components of the air to form active species with strong oxidizing power like OH radical. They attach to the surface of fungi and allergens and decompose proteins in the air by oxidation.

Daikin's plasma ions have been proved to be safe.

Safety concerning effect on skin, eyes, and respiratory organs

Testing organization: Life Science Laboratories, Ltd.

Name of test: repeated-dose toxicity test

Test number: 12-II A2-0401

Assumed mechanism of elimination

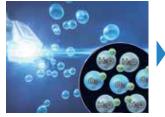




Image is for illustrative purposes

Note:

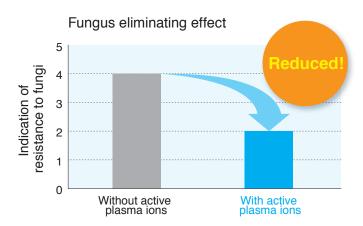
\*1 The number of ions per 1cm³ of air blown into the atmosphere measured near the air outlet during operation with maximum airflow.

Test conditions: temperature 25°C, humidity 50%

Concentration: 25,000 ions/cm<sup>3</sup>\*1

These are effects in an active plasma ion test space and not verification results in an actual operation space.

#### Reduction of attached fungi



Test name: test of resistance to fungi.

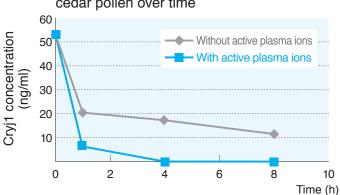
Testing organization: Japan Spinners Inspecting Foundation.

Test number: 019190-1.

Test result: After cultivation in a 9L container according to Japanese Industrial Standard JISZ2911, generation of fungi was reduced to less than half.

### Reduction of allergens

Change in concentration of allergen of cedar pollen over time



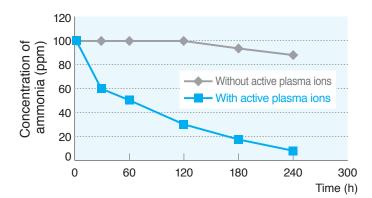
Test name: Test of reduction of allergen of cedar pollen.
Testing organization: ITEA/Institute of Tokyo Environmental

Test number: 11MRPTMAY031.

Test result: Allergen of cedar pollen in a 45L container was reduced by more than 95.5% in about 8 hours.

#### **Deodorisation**

Deodorisation of ammonia



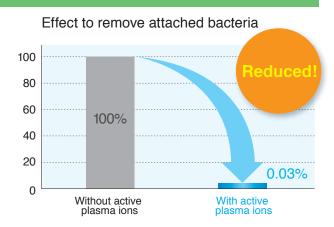
Test name: Deodorisation test.

Testing organization: Japan Spinners' Inspecting Foundation.

Test number: 200097-1.

Test result: In a 5L container, ammonia was reduced by 92.3% in about 240 minutes.

#### Reduction of attached bacteria



Test name: antibacterial test.

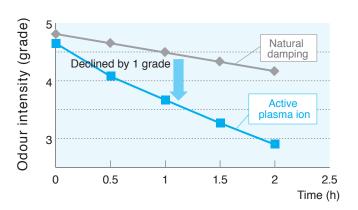
Testing organization: Japan Spinners' Inspecting Foundation.

Test number: 028669.

Test result: In a 9L container, reduced by more than 99.97% in 24 hours

#### Removal of attached odour

#### Effect to remove attached odour



Test method: In a test chamber of a size of about 6 tatami mats, evaluated deodorising effect on a piece of cloth to which tobacco odour components were attached by 6-grade odour intensity indication method.

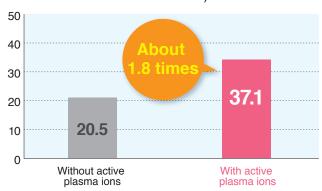
Test result: Odour intensity declined by 1 grade in about 1 hour (tested by Daikin).\*

A one-grade decline of odour intensity means a 90% reduction of odour.

\*The deodorisation effect varies depending on the ambient environment (temperature and humidity), operation time, odour, and the type of fiber.

#### Increase of skin moisture

Change in skin moisture (difference in integrated skin moisture of 120 minutes)



Organization: Soiken (Comprehensive Medical Science Laboratory). Number: MII-2010-10.

Method: Measured skin moisture of 8 healthy women prone to skin dryness in a room of about 6 tatami mats under conditions with and without active plasma ions.

Result: Skin moisture increased by about 1.8 times in about 120 minutes.

\*Actual effect will vary depending on room conditions and method of use.





- Daikin products are manufactured for export to numerous countries throughout the world. Prior to purchase, please confirm with your local authorised importer, distributor and/or retailer whether this product conforms to the applicable standards, and is suitable for use, in the region where the product will be used. This statement does not purport to exclude, restrict or modify the application of any local legislation.
- Use only those parts and accessories supplied or specified by Daikin.
- Read the user's manual carefully before using this product. The user's manual provides important safety instructions and warnings. Be sure to follow these instructions and warnings.

If you have any enquiries, please contact your local importer, distributor and/or retailer.

• Specifications, designs and other content appearing in this brochure are current as of May 2017 but subject to change without notice.

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