

# Count on Sharp for Clean and Healthy Air

## Certified Worldwide

Plasmacluster—Gaining Trust and New Customers around the World  
[ 19 Institutes and Organizations ]



-This is supporting scientific data for Plasmacluster Ion generator.  
-Please note that Sharp does not guarantee that test results can be replicated in actual user situations.  
-The feature varies upon models/regions  
-Plasmacluster's effectiveness will vary depending on the ion density and product.  
Please note that comments in the User Impression Section are user opinions and are not a guarantee of the effectiveness or efficiency of the products.

## Used in a variety of industries

Plasmacluster Ion technology is recognized and used across a wide range of industries. In collaboration with a number of companies, Sharp has expanded the Plasmacluster Ion technology to the following industries:



## Used in over 60 million products in 14 years

In the 14 years since its release, Plasmacluster Ion-equipped products have exceeded the 60-million-unit mark. Sharp aims to bring the benefits of Plasmacluster Ions to every air space.



\* Design and specifications are current as of December 2015, but are subject to change without prior notice.

**SHARP**  
SHARP CORPORATION OSAKA, JAPAN

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**SHARP**

AIR PURIFIER



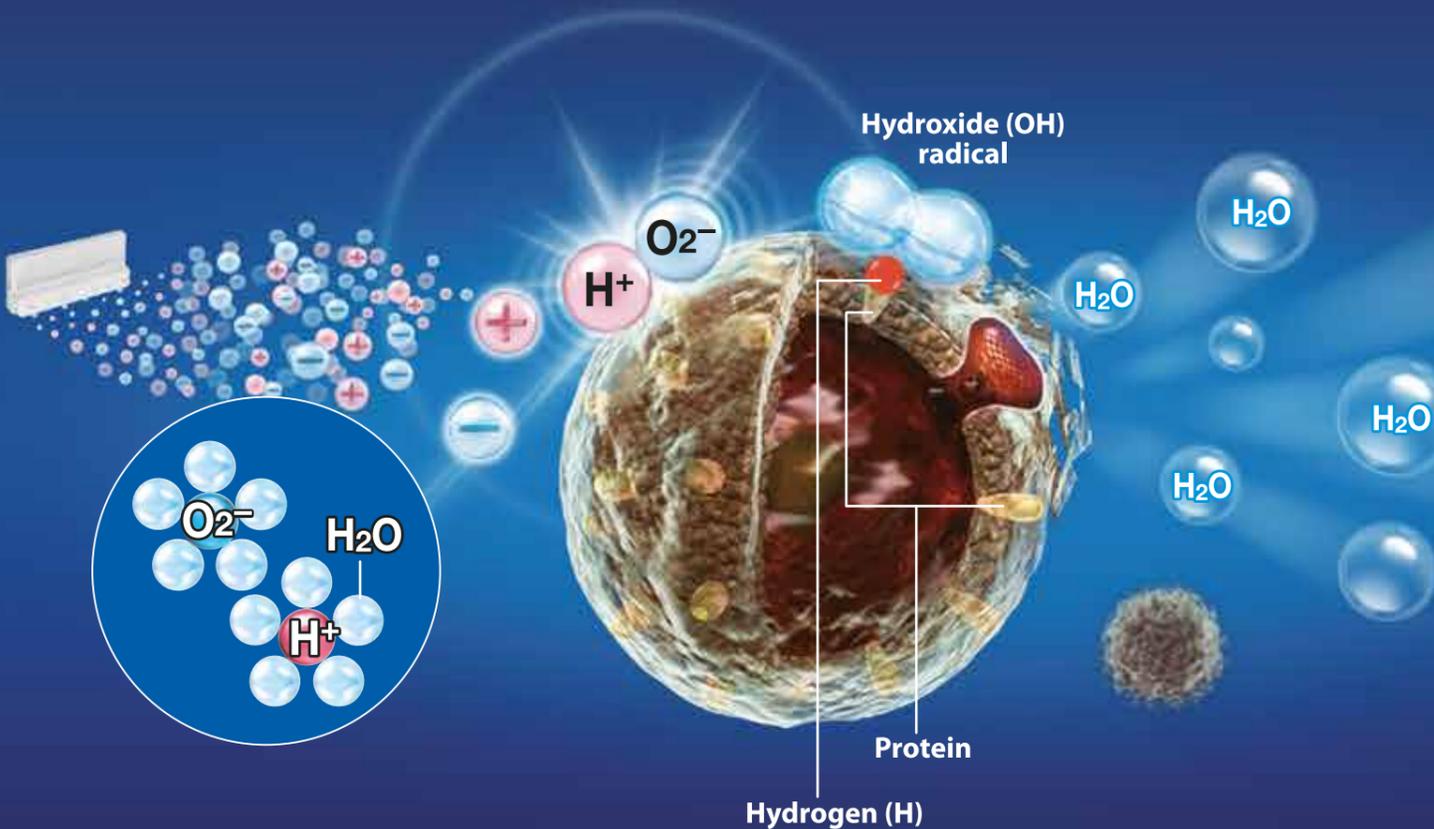
PURE CLEAN AIR

ENJOYED BY MILLIONS AROUND THE WORLD.





# Plasmacluster Ions — A Remarkable Air Purifying Mechanism



## Plasmacluster Mechanism to Remove Microbes

The ions are long-lasting\* because they are surrounded by water molecules.

- 1 Ions are released.**  
Plasmacluster ions, the same positive and negative ions found in nature, are generated by plasma discharge and released into the air.  
\* Verified in Sharp test comparisons of ions not surrounded by water molecules.
- 2 The ions act on airborne microbes.**  
The ions form hydroxide (OH) radicals that are highly oxidizing only when they adhere to the surfaces of mold and viruses. They instantly remove the hydrogen from the surface proteins, breaking them down.
- 3 The broken-down components return to the air as water.**  
The hydroxide (OH) radicals combine with hydrogen (H) to form water (H<sub>2</sub>O), which returns to the air.

- Air purifiers and ion generators with Plasmacluster technology can prevent the action of airborne viruses, as well as reducing the effects of suspended allergens generated by dust mite feces and dead mites by breaking them down, but Plasmacluster cannot create a completely sterile environment, or ensure prevention of infection.
- The actual number of ions and effectiveness of microbe removing<sup>\*1</sup> and purifying<sup>\*2</sup> depend on the room conditions and the operation methods, including room size or shape, whether air conditioning or ventilation is used, product placement, direction of ion discharge, and operation mode.
- <sup>\*1</sup> Airborne viruses are suspended in a 1m<sup>3</sup> box, and the percentages of the viruses removed after 10 minutes are measured. Suspended microbes subjected to Plasmacluster air purification are measured after 38 minutes in a testing room of about 40 m<sup>3</sup>. Test results may differ from results in actual room conditions.
- <sup>\*2</sup> The effectiveness depends on the surrounding conditions (e.g., temperature, humidity and airflow), usage time and method.

## Plasmacluster Technology Purifies Air with the Same Ions as in Nature

### Plasmacluster Technology

Plasma discharge generates and emits the same positive and negative ions that occur in nature. Plasmacluster technology is Sharp's original air purifying technology that removes airborne mold and viruses.

**Winner of the 2008 Invention Prize**  
National Invention Awards Ceremony held by the Japan Institute of Invention and Innovation (JIII)  
Patented by Sharp (patent number 3680121)



## Proven Safety of Plasmacluster Ions

- 1 The Same Ion Type**  
Sharp has verified that Plasmacluster ions in the air are the same as they are in nature.
- 2 Air Purifying Mechanism**  
Plasmacluster ions react with the surface proteins on airborne mold and viruses but do not affect the internal cellular substances.
- 3 Reliable Safety**  
GLP\*-compliant test facilities have gathered highly reliable safety data on Sharp's Plasmacluster technology.

\* GLP (good laboratory practice) is a system of management controls for test facilities and test procedures designed to ensure the reliability of chemical safety assessment tests.

Purpose	Test name (abbreviation)	Ion density setting
Skin Irritancy (General Condition)	Acute Skin Irritation/Corrosion	Approx. 1,000,000 ions/cm <sup>3</sup>
Eye Irritancy (General Condition)	Acute Eye Irritation/Corrosion	Approx. 13,000,000 ions/cm <sup>3</sup>
Gene Toxicity (General Condition)	Inhalation Toxicity (Evaluation of Genetic Effect on Pulmonary Tissue)	Approx. 7,000,000 ions/cm <sup>3</sup>

Testing body: Mitsubishi Chemical Medience Corporation



# Effectiveness of Plasmacluster Ions

## Plasmacluster Ions Clean the Room Air

Airborne viruses: Viruses were measured after 10 minutes in a 1-m<sup>3</sup> airtight box.  
Airborne microbes: Microbes were measured after 38 minutes in an approx. 40-m<sup>3</sup> room.  
The results of these experiments do not ensure the same effects in actual room conditions.

- Products equipped with Plasmacluster technology suppress the activity of airborne viruses as well as removing and breaking down allergens including dust mite feces and dead dust mites; however, these effects cannot create a completely sterile environment or ensure prevention of microbial infection.
- The actual number of ion particles and extent of bacteria elimination<sup>\*1</sup>, purification, and skin beautifying<sup>\*2</sup> depend on the room conditions (e.g., size, shape, air conditioning, ventilation, and location of product installation) and the method of use (e.g., direction of ion dispersal and selected operation mode).

<sup>\*1</sup> Airborne viruses were measured after 10 minutes in a 1-m<sup>3</sup> airtight box.

Airborne microbes were measured after 38 minutes in an approx. 40-m<sup>3</sup> room.

The results of these experiments do not ensure the same effects in actual room conditions.

<sup>\*2</sup> The effectiveness depends on the surrounding conditions (e.g., temperature, humidity and airflow), usage time and method.



The number in this technology mark indicates the approximate number of ions supplied into 1 cm<sup>3</sup> of air, which is measured around the center of a room (at a height of 1.2 m above the floor) with the applicable floor area for High-density Plasmacluster 7000 at the maximum or medium airflow mode when an air purifier with humidifying or an air purifier using a high-density Plasmacluster ion-generating device is placed close to a wall.

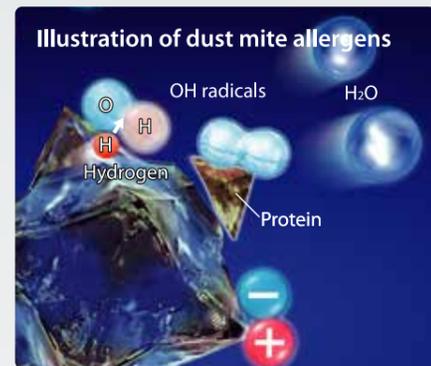
**High-Density 7000**



The number in this technology mark indicates the approximate number of ions supplied into 1 cm<sup>3</sup> of air, which is measured around the center of a room (at a height of 1.2 m above the floor) with the applicable floor area at the maximum airflow, when a Plasmacluster ion generator using a high-density Plasmacluster ion-generating device is placed close to a wall.

**High-Density 25000**

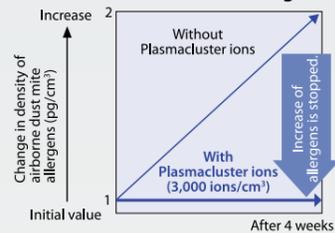
## Removal of Dust Mite Allergens



Plasmacluster ions cut through and remove proteins in suspended allergens generated by dust mite feces and dead dust mites, thereby reducing the effect of these proteins. The higher the density of Plasmacluster ions, the greater the extent of removal.

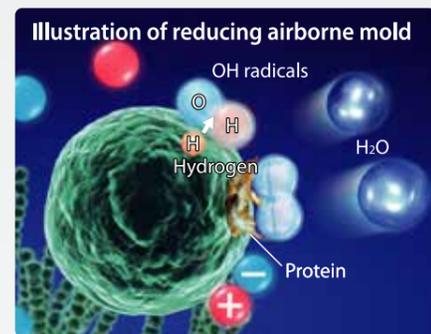


### Extent of removal of dust mite allergens in airborne dust



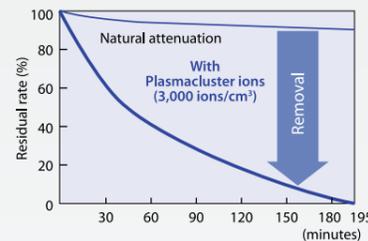
- Tested by Hiroshima University Graduate School of Advanced Sciences of Matter
- Test method: The effect of dust mite allergens in an uncleaned room (with a floor area of approx. 13 m<sup>2</sup>) was measured in an actual home using the ELISA (Enzyme-Linked Immunosorbent Assay) method. Results converted and average calculated by Sharp. (Plasmacluster ion density: 3,000 ions/cm<sup>3</sup>)
- Test result: Dust mite allergens were removed after four weeks.

## Removal of Mold



Plasmacluster ions cut through and remove the cell membrane proteins on the surfaces of suspended mold, thereby inhibiting the effect of these proteins.

### Reduction of airborne mold



- Tested by Ishikawa Health Services Association
- Test method: Plasmacluster ions were discharged into a test chamber with a floor area of approx. 13 m<sup>2</sup>, and the suspended mold was measured with an air sampler. Results graphed by Sharp using approximate values. (Plasmacluster ion density: 3,000 ions/cm<sup>3</sup>)
- Test results: 99.0% of mold was removed after approx. 195 minutes.

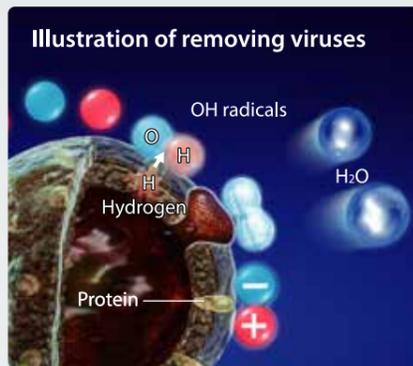
## Reducing Growth of Clinging Mold



High-density Plasmacluster ions remove suspended mold as well as reducing the growth of clinging mold on the surface.

- Tested by Japan Food Research Laboratories
- Test report: No.0901074401-01, October 27, 2009
- Test method: Ions were generated by Sharp in a 2.6-m<sup>3</sup> space, and mold was grown on a PVC plate for five days. Mold growth areas are compared to the JIS Z2911 standard. (Plasmacluster ion density 25,000 ions/cm<sup>3</sup>)
- Test results: Growth of clinging mold was reduced after five days.

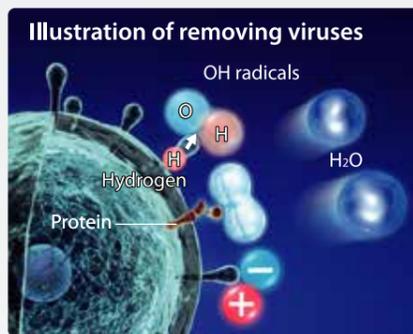
## Suppressing the Activity of Airborne Microbes



Plasmacluster ions break down and remove proteins on the surface of suspended viruses, thereby reducing the effect of these proteins after about 38 minutes. Viruses were measured after 38 minutes in an approx. 40-m<sup>3</sup> room. The results of these experiments do not ensure the same effects in the actual room conditions.

- Tested by Prof. Emeritus Melvin First of the Harvard School of Public Health (U.S.A.)
- Test method: Viruses were suspended in a space with a floor area of approx. 15 m<sup>2</sup> and then collected. The rate of virus removal was measured. (Plasmacluster ion density: 4,700 ions/cm<sup>3</sup>)
- Test result: 99.0% of the virus was removed after approx. 38 minutes.

## Suppressing the Activity of Airborne Viruses



This indicates the effect after 10 minutes in a 1-m<sup>3</sup> airtight container and not the verified results for the actual room conditions.

- Tested by Retroscreen Virology (U.K.)
- Test method: Viruses were suspended in the air inside a 1-m<sup>3</sup> box, and the percentage of airborne viruses removed was measured.
- Test results:
  1. Removal of 99.0% in approx. 10 minutes (Plasmacluster ion density: 7,000 ions/cm<sup>3</sup>)
  2. Removal of 99.9% in approx. 10 minutes (Plasmacluster ion density: 50,000 ions/cm<sup>3</sup>)

<sup>\*</sup> Measurement must be performed under the following conditions for an ion generator to provide the same high density of ions as use in the 1-m<sup>3</sup> box of the virus experiments (results of experiment 2 not including spot-type ion generators): IG-DX10: High airflow, 1 m horizontal from air dispersal, height of 1 m; IG-DC2: Standard air stream, 0.15 m horizontal from air dispersal, height of 0.55 m. However, the actual number of ion particles as well as extent of bacteria elimination and purification depend on the room conditions (e.g., size, shape, air conditioning, ventilation, and location of product installation) and the method of use (e.g., direction of ion dispersal and selected operation mode). The functionality of these air purifiers cannot produce a sterile environment or ensure that microbial infection will be prevented. The results of these experiments do not ensure the same effects in actual room conditions.



# Effectiveness of Plasmacluster Ions

## Removing Stubborn Odors with Plasmacluster

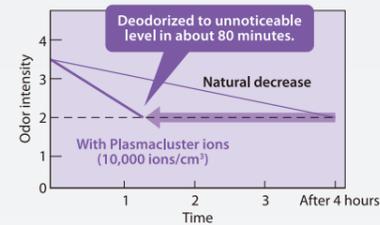
### Removal of Clinging Odors

Plasmacluster ions break down and remove cigarette smoke odor components that have seeped into room furnishings in about **80 minutes** to an unnoticeable level. These ions also neutralize pet odors and the odor of laundry dried indoors.



High-Density 7000 <sup>\*1</sup>

#### Removal of cigarette smoke odor



- Tested by the Boken Quality Evaluation Institute
- Test method: The effectiveness of deodorizing a cloth swatch impregnated with cigarette smoke odor components was evaluated by using the six-level odor intensity indication method. (Plasmacluster ion density: **10,000 ions/cm<sup>3</sup>**\*)
- Test result: Deodorized to unnoticeable level in about 80 minutes.

<sup>\*2</sup> The ion density measured close to the wall of a room with an applicable floor area for the high-density plusmacluster 7000 with the unit set to high airstream in air purifying or humidifying air purifying mode.

### Spot Deodorizing for Clinging Odors

Spot deodorizing emits high-density Plasmacluster ions in air focused on clothing for gentle overnight deodorizing of suits or other items infused with unpleasant odors.

- Tested by the Boken Quality Evaluation Institute
- Test method: The effectiveness of deodorizing a cloth swatch impregnated with sweat odor components was evaluated by using the six-level odor intensity indication method. (Plasmacluster ion density: **100,000 ions/cm<sup>3</sup>**\*)
- Test result: Deodorized to unnoticeable level in about **6 hours**.



- <sup>\*3</sup> The humidifying air purifier is operated at the high airstream setting, with density measured next to hanging clothing as the airflow is directed onto the clothing.
- The effectiveness of clothing odor removal depends on the type and intensity of the odor and the clothing material. Odors are not removed from clothing areas that are not in the airflow.

### Reduction of Static Electricity

Plasmacluster ions reduce static electricity, preventing pollen and airborne dust from clinging to curtains, clothing, and other surfaces.

- Tested by Sharp
- Test method: An acrylic plate with an electrical charge of approximately 4 kV was placed in a 1-m<sup>2</sup> sealed container, and static electricity was measured on release of Plasmacluster ions. (Plasmacluster ion density: **7,000 ions/cm<sup>3</sup>**)
- Test result: The initial voltage of 4.0 kV decreased to 1.0 kV after approx. **13 minutes**.

<sup>\*1</sup> The number in this technology mark indicates the approximate number of ions supplied into 1 cm<sup>3</sup> of air, which is measured around the center of a room (at a height of 1.2 m above the floor) with the applicable floor area for High-density Plasmacluster 7000 at the maximum or medium airflow mode when an air purifier with humidifying or an air purifier using a high-density Plasmacluster ion-generating device is placed close to a wall.

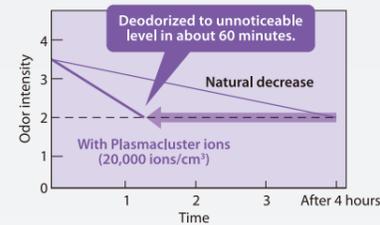
### Removal of Clinging Odors

Plasmacluster ions break down and remove cigarette smoke odor components that have seeped into room furnishings in about **60 minutes** to unnoticeable level. These ions also neutralize pet odors and the odor of laundry dried indoors.



High-Density 25000 <sup>\*4</sup>

#### Removal of cigarette smoke odor



- Tested by the Boken Quality Evaluation Institute
- Test method: The effectiveness of deodorizing a cloth swatch impregnated with cigarette smoke odor components was evaluated by using the six-level odor intensity indication method. (Plasmacluster ion density: **20,000 ions/cm<sup>3</sup>**\*)
- Test result: Deodorized to unnoticeable level in about 60 minutes.<sup>\*5</sup>

<sup>\*5</sup> The effectiveness of odor removal depends on the type and intensity of the odor and the material in which the odor lingers.

### Spot Deodorizing for Clinging Odors

Spot deodorizing emits high-density Plasmacluster ions in air focused on clothing for gentle overnight deodorizing of suits or other items infused with unpleasant odors.

- Tested by Sharp
- Test method: The effectiveness of deodorizing a cloth swatch impregnated with sweat odor components was evaluated by using the six-level odor intensity indication method. (Plasmacluster ion density: **250,000 ions/cm<sup>3</sup>**\*)
- Test result: Deodorized to unnoticeable level in about **4 hours**.



- <sup>\*6</sup> The ion density created when an ion generator or humidifying air purifier with is operated at the high airstream setting, with density measured next to hanging clothing as the airflow is directed onto the clothing.
- The effectiveness of clothing odor removal depends on the type and intensity of the odor and the clothing material. Odors are not removed from clothing areas that are not in the airflow.

### Reduction of Static Electricity

Plasmacluster ions reduce static electricity, preventing pollen and airborne dust from clinging to curtains, clothing, and other surfaces.

- Tested by Sharp
- Test method: An acrylic plate with an electrical charge of approximately 4 kV was placed in a 1-m<sup>2</sup> sealed container, and static electricity was measured on release of Plasmacluster ions. (Plasmacluster ion density: **25,000 ions/cm<sup>3</sup>**)
- Test result: The initial voltage of 4.0 kV decreased to 1.0 kV after approx. **7.5 minutes**.

<sup>\*4</sup> The number in this technology mark indicates the approximate number of ions supplied into 1 cm<sup>3</sup> of air, which is measured around the center of a room (at a height of 1.2 m above the floor) with the applicable floor area at the maximum airflow, when a Plasmacluster ion generator using a high-density Plasmacluster ion-generating device is placed close to a wall.

## High-Density Plasmacluster Skin-Beautifying Effects

The effectiveness depends on various conditions, such as the season, temperature, humidity, airflow, operating time, and individual skin conditions.

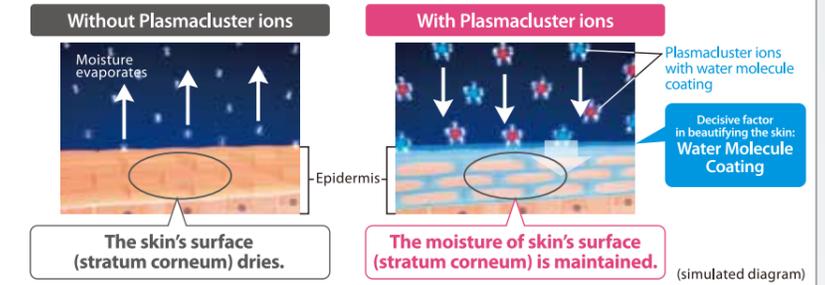


High-Density 25000 <sup>\*7</sup>

### How Skin Moisture Is Preserved

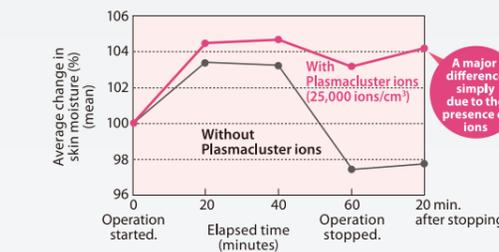
The water molecules that surround Plasmacluster ions adhere to the surface of the skin and form a water molecule coating, which maintains the moisture of the skin's surface (i.e., stratum corneum).

- Tested by the Research Institute of Electrical Communication, Tohoku University
- Test result: The formation of a water molecule coating on the surface of the skin due to the presence of Plasmacluster ions was confirmed.



## Skin Moisture

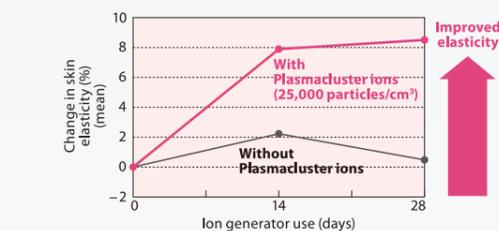
### Change in skin moisture



- Tested by Soiken Inc.
- Test area: Approx. 9.8-m<sup>2</sup> floor area
- Number of test subjects: 13 (females, 20 to 60 years old)
- Temperature: Approx. 28°C, Humidity: Approx. 40%
- Ion density: Approx. 25,000 ions/cm<sup>3</sup>
- Test method: A group of subjects entered a room where Plasmacluster ions were generated and another group entered a room where ions were not generated. The rate of change in the amount of moisture in the skin at their temples for each group was measured with the subjects in a reclined state.
- Test result: After 60 minutes of operation, skin moisturizing was observed where ions were present.
- The results were not due to humidification of the room.

## Skin Elasticity

### Change in skin elasticity



- Tested by Soiken Inc.
- Number of test subjects: 24 (females, 30 to 65 years old)
- Ion density: Approx. 25,000 ions/cm<sup>3</sup>
- Test method: Plasmacluster ion generators were placed in actual residences with a floor area of approx. 9.8 m<sup>2</sup> to 13.2 m<sup>2</sup>, and for 28 days one group of test subjects used the generators everyday while sleeping. Another group under the same conditions did not use Plasmacluster ion generators. The elasticity of cheek skin for each group was measured.
- Test results: Improvement of skin elasticity in the presence of Plasmacluster ions was observed after 28 days.

## Skin Texture

### Example of change in skin conditions



Lines run in a single direction and no mesh-like texture is evident. The skin has a deeper texture with a clearly visible, lace-like texture.

- The results for the three tests above apply to ion generation devices for testing. Similar effects are considered achievable using Plasmacluster ion generators.
- <sup>\*7</sup> The number in this technology mark indicates the approximate number of ions supplied into 1 cm<sup>3</sup> of air, which is measured around the center of a room (at a height of 1.2 m above the floor) with the applicable floor area at the maximum airflow, when a Plasmacluster ion-generating device is placed close to a wall.



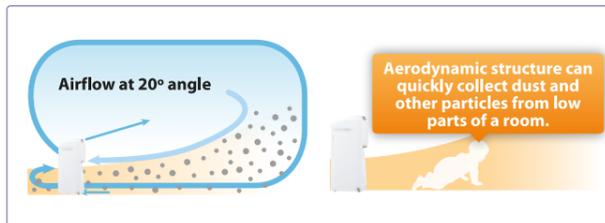
# Filtration & Efficient Airflow System

## Powerful Dust Collection and Capturing System with Plasmacluster Technology, Delivering Natural Clean Air Quickly

Sharp's unique system of efficient airflow and circulation enables quick dust removal.

**Aerodynamic structure can quickly collect dust and other particles from low parts of a room.**

Faster airflow at a 20° angle with efficient front intake collects dust at lower levels in the room for more effective cleaning.

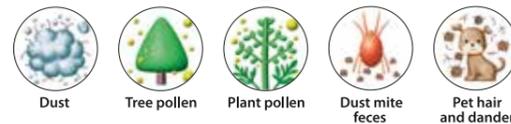


**Powerful Air Suction**

### Removal of Pollen and Airborne Dust

High-density Plasmacluster ions are effective for reducing static electricity, thereby removing pollen and airborne dust clinging to clothing or other fibers.

**Sharp's unique system of efficient airflow and circulation enables quick dust removal.**



### Fast Airflow and Circulation from Unique Aerodynamic Structure

**1 Quick Collection**  
New long nozzle for efficient airflow



**2 Smooth Airflow Guide Design**  
The airflow guide helps to guide collected airborne dust smoothly into the back suction panel.



**3 Powerful Suction**  
Dust drawn in from the room is collected through suction by the large surface area of the entire back of the unit.



# Mosquito Catcher Air Purifier

## 3-in-1 Air Purifier Protects Your Family's Health

**FP-FM40L-B**  
Plasmacluster Air Purifier

**World First!**  
Air Purifier with Mosquito Catcher

**3 in 1**

**Plasmacluster**

**Air Purifying**

**Mosquito Catcher**

Recommended Room Size: **30 m<sup>2</sup>**

Collaboration with Institute for Medical Research an agency under Ministry of Health Malaysia

### Glue Sheet (FZ-40STS)

#### Features

- 100% Harmless Glue Sheet**  
The adhesive sheet used is completely safe. No toxic ingredients were used.
- Strong Catching Power**  
The strong glue sheet catches mosquitoes.
- Easy Disposal without Dirtying Your Hands**  
Just peel off one glue sheet.
- Exchangeable 3-layer Glue Sheet**  
The recommended period for each layer is one month\*. Can use 3 months with 3 layers. \*Depending on room conditions.



#### How To Use

- Hang the glue sheet on the upper hooks inside the catch panel of air purifier.
- Then press the bottom edge of the glue sheet to secure.

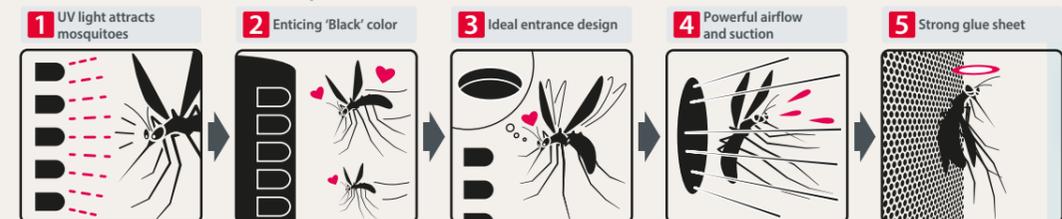


## Removing Threats from Your Daily Life to Provide You with a Comfortable and Safe Environment

Capture and protect from mosquitoes with 100% harmless 5 Effective Steps\* of Mosquito Catcher

Reduce up to 91% of Culex, 73% of Aedes and 72% of Housefly\*\*

Effective mechanism based on mosquito behaviour



\* The mechanism of the Mosquito Catcher is studied in collaboration with the Institute for Medical Research, Malaysia.  
\*\* Result of 24-hour laboratory test in collaboration with the Institute for Medical Research, Malaysia, with Culex quinquefasciatus, Aedes albopictus and aegypti, and Musca domestica. The efficacy of the Mosquito Catcher function was tested in a laboratory setting; actual conditions may vary. Continuous usage will improve capture efficacy.



# Air Purifiers with Humidifying System

## Triple High-Performance Filters Collect Airborne Dust and Odor Particles

KI-A60

Removal of Micron-Size Dust Particles Including 0.3-Micron Viruses and Dust Allergens

**Dust-Collecting HEPA-Filter\*1**

No need for replacement for 10 years\*2

High Performance of Capturing Odor Particles Maintained

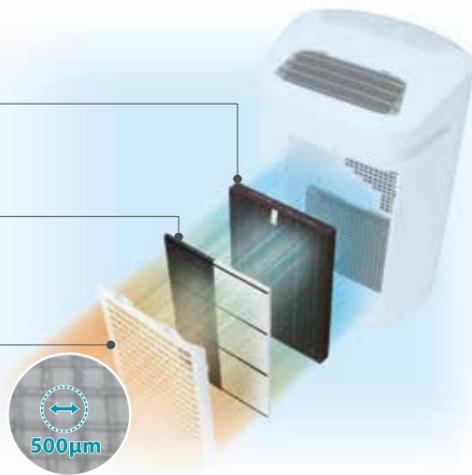
**High-Performance Triple Deodorizing Filter**

No need for cleaning for 10 years\*3  
Easy maintenance by simply wiping.

Capture Microscopic Dust Particles As Small As 500 Microns

**Anti-microbial\*4, Anti-mold\*5  
Micron Mesh Pre-filter on Rear Panel**

No need for replacement  
Easy maintenance by simply wiping the filter without detaching it.



KC-D60/D40

Removal of Micron-Size Dust Particles Including 0.3-Micron Viruses and Dust Allergens

**Dust-Collecting HEPA Filter\*1**

No need for replacement for 10 years\*2

Removal of Odors

**Deodorizing Filter**

No need for replacement for 10 years\*3  
Easy maintenance by simply wiping.

Capture Microscopic Dust Particles As Small As 500 Microns

**Anti-microbial\*4, Anti-mold\*5  
Micron Mesh Pre-filter on Rear Panel**

No need for replacement  
Easy maintenance by simply wiping the filter without detaching it.



KC-A50

Removal of Micron-Size Dust Particles Including 0.3-Micron Viruses and Dust Allergens

**Dust-Collecting HEPA-Filter\*1 (anti-microbial\*6, anti-allergen\*7, anti-virus\*8)**

No need for replacement for 10 years\*2

Removal of Odors

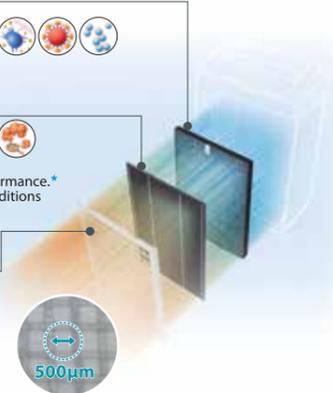
**Washable Deodorizing Filter**

Washable filter needs no replacement.  
Regularly washing the filter restores deodorizing performance.\*  
\* Deodorizing performance depends on the room conditions and washing method.

Capture Microscopic Dust Particles As Small As 500 Microns

**Micron Mesh Pre-filter on Rear Panel**

No need for replacement  
Easy maintenance by simply wiping the filter without detaching it.



### HEPA Filter\*1

**Enlargement of HEPA Filter\*1**  
The larger the surface area of the filter, the more dust and other harmful particles are captured.

The filter measures as long as approx. 8 m when fully extended.

Simulated image of the KI-A60

### What HEPA Filter\*1 Captures

99.97%\*9 capture and removal of 0.3-micron dust particles

- Tree pollen**: Cedar, cypress, birch, alder, beech, red cedar, oak, pine
- Grass pollen**: Ragweed, wormwood, hop, orchard grass, vernal grass, timothy grass
- Allergens**: Dust mite feces, dust mite remains, dog dander, cat dander, hamster dander, mold
- Viruses**
- Airborne microbes**
- Airborne mold**: Black mold, Stachybotrys, Aspergillus niger, Penicillium
- Dust**: Dust, pet hair, pet dander, cigarette smoke, cooking fumes, mite dust, diesel exhaust particles, Asian dust
- Odors**: Cigarette odor, pet odor, cooking odor, kitchen food waste odor, toilet odor, body odor, mold odor, ammonia odor

\*1 The filter captures more than 99.97% of 0.3-micron dust particles.  
\*2 When smoking five cigarettes a day. Depending on the usage conditions, filter replacement may be required.  
\*3 Deodorizing performance depends on the room conditions.  
\*4 Tested by the Boken Quality Evaluation Institute. Test method: JIS Z 2801 standard test. Anti-microbial method: Infusing filter with anti-bacterial agents. Test result: 99% removal. Object tested: Microbes adhering to rear panel filter.  
\*5 Tested by the Boken Quality Evaluation Institute. Test method: Mold resistance test according to the JIS Z 2911 standard. Mold prevention method: Infusing filter with anti-mold agents. Test result: No mold growth.  
\*6 Verified by the Japan Synthetic Textile Inspection Institute Foundation. SEK mark certification number for the KC-A60/A50/A40: 006698.  
\*7 Tested by Hiroshima University Graduate School of Advanced Sciences of Matter. Test method: Filters were infused with anti-allergen agents and measured using the ELISA (Enzyme-Linked Immunosorbent Assay) method. Test result: 99.9% removal of allergens of cedar pollen and 99.8% removal of dust mite feces allergens. Test subjects: Cedar pollen allergens captured using filters.  
\*8 Tested by Japan Food Research Laboratories. Test number: 208040482-002. Test method: A virus suspension was dripped on a filter and the infection value was measured after 24 hours. Test result: 99.9% of viruses removed. Test subject: One virus species.  
\*9 This value applies to filter removal performance, not to removal for the entire room.  
\* The number in this technology mark indicates the approximate number of ions supplied into 1 cm<sup>3</sup> of air, which is measured around the center of a room (at a height of 1.2 m above the floor) with the applicable floor area at the maximum airflow, when a Plasmacluster ion generator using a high-density Plasmacluster ion-generating device is placed close to a wall.  
Dust removing and deodorizing performance of air purifiers  
• Not all harmful substances in cigarette smoke, e.g., carbon monoxide, can be removed.  
• Not all commonly occurring odors, e.g., building material odors and pet odors, can be removed.  
\* The filter itself may produce an odor and need to be replaced after several months if the air purifier is used to reduce strong odors, such as cigarette smoke or grilled meat.  
Use the air purifier in combination with room ventilation if it is used for strong odors.



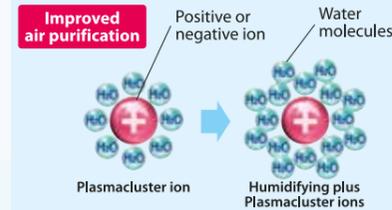
# Air Purifiers with Humidifying System

## Automatically Rotating Humidifying Structure Creates Clean Humidity Conditions

Comfortable Humidity Indoors Keeps Your Skin and Throat Moisturized and Healthy

Minute water molecules from moisture delivered by vapor humidifying prevent nose and throat dryness.

Humidifying doubles the Plasmacluster ion endurance and air purifying speed.\*



\* Tested by Japan Food Research Laboratories. Test method: Plasmacluster ions were discharged into a test chamber with a floor area of about 8 m<sup>2</sup>, airborne mold was measured with an air sampler, and the approximate values for the condition with humidifying and the condition without humidifying were compared.



Water molecule Approx. 0.4 nm

Plasmacluster ion Approx. 2 to 9 nm

Vapor water molecule (steam) 3,000 to 15,000 nm

Rotating humidifying mechanism structure

When humidifying is not performed, the filter disc rotation stops and remains free of water immersion and dries with ventilation, thus keeping the filter disc clean and preventing mold growth.

Anti-microbial\*1, anti-mold\*2, humidifying filter  
No need of replacement for 10 years\*3

\*3 Time for the humidifying performance to decrease by 50% relative to the rated humidifying performance assuming eight hours of operation per day. The filter service life depends on the room conditions and usage. Periodic cleaning is required.  
KI-A60 simulated image

## Simple Operation for Easy Everyday Use

Water Tank Enables Easy Cleaning and Convenient Water Supply

Handle for easy carrying in one hand

Self-standing tank prevents tipping over when refilling.  
Convenient height for refilling.

Large-diameter cap enables tank cleaning by hand.



Unit Placed Close to a Wall

The unit can be placed as close as 3 cm from a wall. Rear suction performance is not hindered.

As close as 3 cm\* from a wall

\* Place the unit further away if the walls or furniture around the unit become dirty.

Casters

Easily move the unit to the left and right by rolling it on casters.

Casters enable moving the unit simply even with only one hand.

The casters on the KI-A60 and KC-D60/D40 can be locked.

Concentrated Purifying for Dirty Air (Except KC-D60E/D40E)

Plasmacluster Shower Operation

Just press the shower operation button to maintain a Plasmacluster shower for 60 minutes, dispersing high-density Plasmacluster ions in a unique aerodynamic airflow and increasing the density of ions near walls. This removes airborne dust and pollen as well as odors in the air, and it also can reduce odors clinging to clothes or fabric in a room, including curtains and walls.



Press the button when the air feels dirty. Quick air cleaning

Approved by the British Allergy Foundation

The British Allergy Foundation has tested KI, KC, and FU-series Sharp Plasmacluster air purifiers and verified that airborne allergens including dust mite feces and remains, as well as pollen, are removed.



\*1 Tested by the Boken Quality Evaluation Institute. Test method: JIS Z2801 standard test. Anti-microbial method: Infusing filter with anti-bacterial agents. Test result: 99% removal.  
\*2 Tested by the Boken Quality Evaluation Institute. Test method: Mold resistance test according to the JIS Z 2911 standard. Mold prevention method: Infusing filter with anti-mold agents. Test result: No mold growth.  
\* The number in this technology mark indicates the approximate number of ions supplied into 1 cm<sup>3</sup> of air, which is measured around the center of a room (at a height of 1.2 m above the floor) with the applicable floor area at the maximum airflow, when a Plasmacluster ion generator using a high-density Plasmacluster ion-generating device is placed close to a wall.



## KC-D60/D40

### Plasmacluster Air Purifiers with Special Features Meeting Local Needs

KC-D60E

KC-D40E



KC-D60E-W (white)  
Recommended Room Size: 48 m<sup>3</sup>\*  
(30 m<sup>2</sup> for humidifying\*)



KC-D40E-W (white) KC-D40E-B (black)  
Recommended Room Size: 26 m<sup>3</sup>\*  
(21 m<sup>2</sup> for humidifying\*)



### Haze Mode (KC-D60E/40E)

The KC-D60E/40E has a new Haze Mode. When it starts in Haze Mode, operation is at maximum airflow for the first 10 minutes, and then switches to a higher airflow for the next 50 minutes. After that, operation repeatedly alternates between normal and high airflow every 20 minutes. With a stronger airflow for the first 60 minutes, a high density of Plasmacluster ions is dispersed into the entire room, which reduces static electricity, making it easy to capture haze particles.



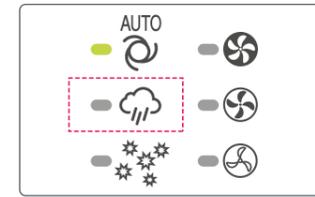
\*1 Recommended room size is measured based on the JEM1467 standard of the Japan Electrical Manufacturers' Association.  
\*2 Measurement conditions: 20°C, 30% humidity (JEM1426).  
\*3 Measured based on the JEM1467 standard of the Japan Electrical Manufacturers' Association.  
\* The number in this technology mark indicates the approximate number of ions supplied into 1 cm<sup>3</sup> of air, which is measured around the center of a room (at a height of 1.2 m above the floor) with the applicable floor area at the maximum airflow, when a Plasmacluster ion generator using a high-density Plasmacluster ion-generating device is placed close to a wall.



### Rainy Mode (KC-D60E/40E)

In the rainy season, the increased humidity levels allow rapid mold growth. When the humidity is high, the Rainy Mode or the Advanced Auto Mode delivers a stronger airflow than in the Auto Mode. The dispersed Plasmacluster ions remove airborne mold, as well as reducing the growth of clinging mold on surfaces.

For the KC-D60E/40E, the Rainy Mode starts operation when the humidity is above 80%.



KC-D60E/D40E

### Simple Operation for Easy Everyday Use

### Casters with Stoppers

Easily move the unit to the left and right by rolling it on casters. To secure the unit, lock the casters with stoppers.



Stopper unlocked



Stopper locked



### On/Off Timer for Convenient Use

The On timer can be set to up to 14 hours in increments of 2 hours, and the Off timer can be set to 1, 2, 4 and 8 hours.

\*1 Recommended room size is measured based on the JEM1467 standard of the Japan Electrical Manufacturers' Association.  
\*2 Measurement conditions: 20°C, 30% humidity (JEM1426).  
\*3 Measured based on the JEM1467 standard of the Japan Electrical Manufacturers' Association.  
\* The number in this technology mark indicates the approximate number of ions supplied into 1 cm<sup>3</sup> of air, which is measured around the center of a room (at a height of 1.2 m above the floor) with the applicable floor area at the maximum airflow, when a Plasmacluster ion generator using a high-density Plasmacluster ion-generating device is placed close to a wall.

### Auto Louver for Clean and Efficient Air Circulation

The new KC-D series of air purifiers are equipped with an auto louver. When the purifier turns on, the louver opens automatically, and when the purifier turns off, the louver closes to prevent dust from getting inside.

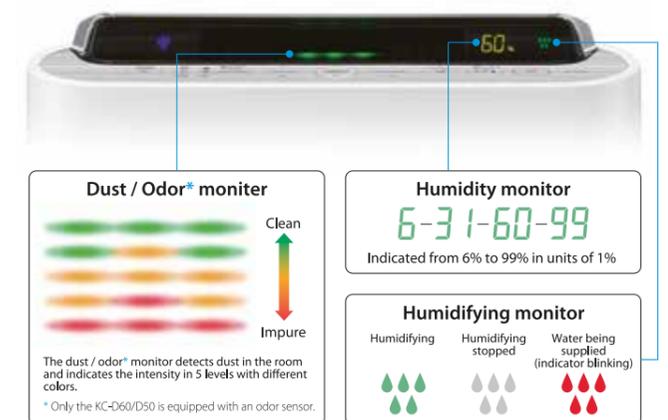
Auto Louver OFF



Auto Louver ON



### Monitors for Dust and Odor\*, Humidity, and Humidifying Indicate the Conditions of the Room Air





# Air Purifiers with Humidifying System

## KC-A50

### Sharp's Unique Airflow Technology Quickly Collects Dust and Particles from All Directions with Powerful Suction

KC-A50

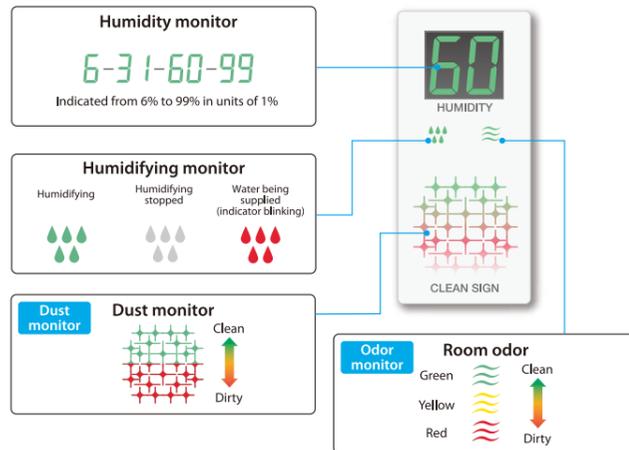


-W (white)

Recommended Room Size: 38 m<sup>2</sup>\*1  
(27 m<sup>2</sup> for humidifying\*)



#### Monitors for Dust and Odor, Humidity, and Humidifying Indicate the Conditions of the Room Air



## KC-930

### High-Density Plasmacluster Technology Plus Powerful Humidifying

KC-930



-W (white)

Recommended Room Size: 21 m<sup>2</sup>\*1  
(16 m<sup>2</sup> for humidifying\*)



#### Sharp's Unique Airflow System Removes Micron-size Dust Quickly and Efficiently

A long and wide nozzle based on aerodynamics provides a faster and more stable airflow. In addition, the 20° angle of the nozzle circulates air faster throughout the room, enabling remarkably quick removal of dust and particles even from far corners.

Dust removal time: Only 21 min. for a 13-m<sup>2</sup> room

Powerful air suction: 180 m<sup>3</sup>/hour

#### High-Performance Filters Remove Micron-size Dust Particles

#### All-in-One Dust Collection and Deodorizing Filter

The filter features dust collection and deodorizing, and it is easy to replace.

\*1 Recommended room size is measured based on the JEM1467 standard of the Japan Electrical Manufacturers' Association.  
\*2 Measurement conditions: 20°C, 30% humidity (JEM1426).  
\*3 Measured based on the JEM1467 standard of the Japan Electrical Manufacturers' Association.

\* The number in this technology mark indicates the approximate number of ions supplied into 1 cm<sup>3</sup> of air, which is measured around the center of a room (at a height of 1.2 m above the floor) with the applicable floor area at the maximum airflow, when a Plasmacluster ion generator using a high-density Plasmacluster ion-generating device is placed close to a wall.



# Air Purifiers with Humidifying System

## KI-A60

### High-Density Plasmacluster Ions Double Air-Purifying Power with Triple Filters, Delivering Comfort to Your Family's Living Room

KI-A60



Powerful Air Suction 402 m<sup>3</sup>/hour\*1

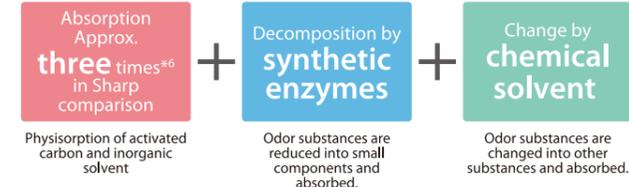
-W (White)

Recommended Room Size: 50 m<sup>2</sup>\*2  
(34 m<sup>2</sup> for humidifying\*)



#### High-Performance Triple Deodorizing Filters

Inorganic solvent was added to a conventional deodorizer of activated carbon, and the absorption volume increased approx. three times\*6 in comparison to Sharp data. Also, decomposition by using synthetic enzymes and chemical sorbent makes decomposed the odor substances into small components, which were absorbed. A wide variety of odors were deodorized by using these three functions, resulting in no need for filter replacement for 10 years\*7.



\*1 Measured based on the JEMM 1467 standard of the Japan Electrical Manufacturers' Association.  
\*2 Recommended room size is measured based on the JEM1467 standard of the Japan Electrical Manufacturers' Association.  
\*3 Measurement conditions: 20°C, 30% humidity (JEM1426).  
\*4 Airborne microbes: The times until microbes in a 1-m<sup>3</sup> airtight box are reduced to 99.9% are compared. The results of these experiments do not ensure the same effects in actual room conditions. Tested by Kitasato Institute Medical Center Hospital, Kitasato Institute  
Test method: Viruses were suspended in the air inside a 1-m<sup>3</sup> box, and the percentage of airborne viruses removed was measured on the release of Plasmacluster ions.  
Test results: Removal of 99.9% in approx. 20 minutes (Plasmacluster ion density: 25,000 ions/cm<sup>3</sup>)  
Removal of 99.9% in approx. 30 minutes (Plasmacluster ion density: 7,000 ions/cm<sup>3</sup>).  
These experiments were performed using one type of virus.

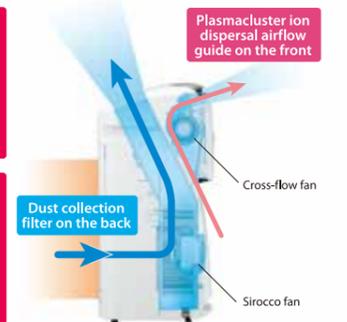
#### High-Density 25000 Plasmacluster and Filter Purification

#### Hybrid-Controlled Air Purification

The hybrid-controlled air purification system has a front ion dispersal airflow guide and a sensor-controlled back suction panel with filter. The front guide continuously disperses high-density Plasmacluster ions into the room, while the dust collection filter with sensor on the back suction panel detects the room air condition, providing excellent air purification.

Speed of Suppressing the Activity of Airborne Microbes: Approx. 1.5 Times Faster\*4 Than the Speed of High-Density 7000 Plasmacluster

Speed of Deodorizing Clinging Odors: Approx. 1.3 Times Faster\*5 Than the Speed of High-Density 7000 Plasmacluster



#### Nature Wing Fan for Quiet Operation

Use of fans shaped like dragonfly wings provides smooth airflow delivery as well as low fan noise.



#### Fan section with dragonfly wings



\*5 Clinging cigarette smoke odor: Comparison of times until Plasmacluster ions break down and remove cigarette smoke odor components to unnoticeable level. Tested by the Boken Quality Evaluation Institute  
Test method: The effectiveness of deodorizing a cloth swatch impregnated with cigarette smoke odor components was evaluated by using the six-grade odor intensity measurement method. Test result: Deodorization to an unnoticeable level in about 60 minutes for Plasmacluster ion density of 20,000 ions/cm<sup>3</sup>. Deodorization to an unnoticeable level in about 80 minutes for Plasmacluster ion density of 10,000 ions/cm<sup>3</sup>.  
\*6 Comparison with washable deodorizing filter of the KC-A60E/A50E  
\*7 When smoking five cigarettes a day. Depending on the usage conditions, filter replacement may be required.  
\* The number in this technology mark indicates the approximate number of ions supplied into 1 cm<sup>3</sup> of air, which is measured around the center of a room (at a height of 1.2 m above the floor) with the applicable floor area at the maximum airflow, when a Plasmacluster ion generator using a high-density Plasmacluster ion-generating device is placed close to a wall.

## FU-A80

Recommended Room Size: 62 m<sup>2</sup>



### High-Performance Filters Remove Micron-size Dust Particles

#### HEPA FILTER

The high-performance HEPA filter traps 99.97% of microscopic particles as small as 0.3 microns in the air that passes through the filter

#### Deodorizing Pre-Filter

The deodorizing pre-filter absorbs many common household odors.

### Outstanding Performance for Everyday Use

- Clean Sign and Auto Operation
- Quiet Operation for Nighttime (23dB)
- Shower Operation
- Child Lock
- Auto Restart (No Default)

### Sharp's Unique Airflow System Removes Micron-size Dust Quickly and Efficiently

A newly developed long and wide nozzle based on aerodynamics provides a faster and more stable airflow. In addition, the 20° angle of the nozzle circulates air faster throughout the room, enabling remarkably quick removal of dust and particles even from far corners.

Big coverage area: **62 m<sup>2</sup>**

Dust removal time: **Only 30 min.** for a 62-m<sup>2</sup> room

Powerful air suction: **480 m<sup>3</sup>/hour**

\* The number in this technology mark indicates the approximate number of ions supplied into 1 cm<sup>3</sup> of air, which is measured around the center of a room (at a height of 1.2 m above the floor) with the applicable floor area for High-density Plasmacluster 7000 at the maximum or medium airflow mode when an air purifier with humidifying or an air purifier using a high-density Plasmacluster ion-generating device is placed close to a wall.

## FP-E50E

Recommended Room Size : 39m<sup>2</sup>



## FP-F40L

Recommended Room Size 30 m<sup>2</sup>



- High Density Plasmacluster Ions Remove Airborne Mold And Viruses.
- Haze Mode Powerfully Collects Haze Particles And Keeps The Room Air Clean.
- Three-step Dust Collection System Efficiently Collects Dust And Other Particles.

## FP-F30L

Recommended Room Size 21 m<sup>2</sup>



- High Density Plasmacluster Ions Remove Airborne Mold And Viruses.
- Haze Mode Powerfully Collects Haze Particles And Keeps The Room Air Clean.
- Three-step Dust Collection System Efficiently Collects Dust And Other Particles.

## Specifications: Air Purifiers

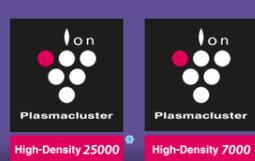
Models	FU-A80E	FP-E50E	FP-F40L	FP-F30L	FP-FM40L-B
Color	-W (white)	-W (white)	-W (White), -T (Toffee)	-H (Grey), -A (Blue), -C (Beige)	B (black)
Recommended area <sup>*1</sup>	62 m <sup>2</sup>	39 m <sup>2</sup>	30 m <sup>2</sup>	21 m <sup>2</sup>	30 m <sup>2</sup>
Recommended area <sup>*2</sup> for high-density Plasmacluster ions	31 m <sup>2</sup>	23 m <sup>2</sup>	23 m <sup>2</sup>	16 m <sup>2</sup>	23 m <sup>2</sup>
Operation modes	3 (Max. / Med. / Low) Auto	3 (Max. / Med. / Low) Auto / Pollen	4 (Auto. / Max. / Med. / Sleep)	3 (max. / med. / low) auto	3 (max. / med. / low) auto
Voltage/frequency (V, Hz)	220-240, 50/60	220-240, 50/60	220-240, 50/60	220-240, 50/60	220-240, 50/60
Power input (max. / med. / low) (W)	75 / 20 / 5	46 / 17 / 4.6	31 / 12 / 3.7-5.9	51 / 30 / 13	33 / 14 / 3.7-6.2
Standby power (W)	0.75	0.8	1.0	1.0	1.0
Inverter operation	Yes	Yes	Yes	No	Yes
Airflow (max. / med. / low) (m <sup>3</sup> /hour)	480 / 300 / 120	306 / 186 / 72	240 / 150 / 48-90	180 / 120 / 60	240 / 150 / 48-90
Noise level (max. / med. / low) (dB)	53 / 41 / 23	51 / 41 / 24	49 / 38 / 21-30	47 / 38 / 26	48 / 38 / 29
Special program mode	Shower <sup>*3</sup> , Auto restart <sup>*4</sup> , Child lock <sup>*5</sup>	Haze Mode, Auto Restart <sup>*4</sup> , Child Lock <sup>*5</sup> , Off Timer	Haze Mode, Auto Restart <sup>*4</sup> , Off Timer	Haze Mode, Off Timer	Haze Mode, Off Timer
Mosquito trap function	No	No	No	No	Yes
Filter type	Dust collection: HEPA <sup>*6</sup> Deodorization: Yes Pre-filter: No (Deodorizing Pre-Filter)	Dust collection: HEPA (JEM467) Deodorization: Yes Pre-filter: Yes	Dust collection: HEPA <sup>*6</sup> Deodorization: Yes Pre-filter: Yes	Dust collection: HEPA <sup>*6</sup> Deodorization: No Pre-filter: Yes	Dust collection: HEPA <sup>*3</sup> Deodorization: Yes Pre-filter: Yes
Filter life	Dust Collection: Up to 2 years <sup>*8</sup> Deodorizing filter: Up to 2 years <sup>*8</sup>	Up to 5 years	Up to 2 years <sup>*6</sup> Up to 2 years <sup>*6</sup>	Up to 2 years <sup>*6</sup> No	Up to 2 years <sup>*4</sup> Up to 2 years <sup>*4</sup>
Sensor	Odor: No Dust: Yes	Yes Yes	Yes Yes	No No	No Yes
Clean sign indicator	Yes (3 steps)	Yes (3 steps)	Yes	No	Yes
Light control button	Yes	Yes (Bright / Dim / Off)	Yes (on / off)	Yes (on / off)	Yes (on / off)
Power cord length (m)	2.0	approx. 2.0	approx. 2.0	approx. 2.0	approx. 2.0
Plug type	Type C (2-pin)	Type C (2-pin)	Type C (2-pin)	Type C (2-pin)	Type C (2-pin)
Dimensions (W x H x D) (mm)	402 x 620 x 245	357 x 576 x 201	383 x 540 x 209	400 x 463 x 182	391 x 540 x 281
Net weight (kg)	8.1	5.5	4.7	4	5.8
Replacement filter	FZ-A80SFE	FZ-E50HFE / FZ-E50DFE	FZ-F40SFE	FZ-F30HFE	FZ-F40SFE
Replacement Glue Sheet					FZ-40STS

\*1 Recommended area: Calculated based on the JEM1467 standard of the Japan Electrical Manufacturers' Association. \*2 The area in which approximately 7,000 ions can be measured per cm<sup>3</sup> in the center of the room (at a height of approximately 1.2 meters from the floor) when the product is placed next to a wall and run at the maximum operation position. \*3 Ion density about 1.5 times higher for 60 minutes in the applicable room size. \*4 The air purifier automatically resumes operation when power returns, even after a sudden power interruption, such as due to a circuit breaker. \*5 By pressing the Child Lock button for more than three seconds, the operation buttons are locked to help prevent inadvertent operation by children or pets. \*6 HEPA is defined by the Japan Electrical Manufacturer's Association Standard, JEM1467. The filter removes more than 99.97% of 0.3-micron dust particles. \*7 E10 class in EN1822 \*8 At a smoking rate of five cigarettes per day. \*9 At a smoking rate of ten cigarettes per day.

\* The number in this technology mark indicates the approximate number of ions supplied into 1 cm<sup>3</sup> of air, which is measured around the center of a room (at a height of 1.2 m above the floor) with the applicable floor area for High-density Plasmacluster 7000 at the maximum or medium airflow mode when an air purifier with humidifying or an air purifier using a high-density Plasmacluster ion-generating device is placed close to a wall.

- The filter itself may produce an odor and need to be replaced after several months if the air purifier is used to reduce strong odors, such as cigarette smoke or grilled meat.
- Use the air purifier in combination with room ventilation if it is used for strong odors.
- Not all harmful substances in cigarette smoke (e.g., carbon monoxide) can be removed.
- Not all commonly occurring odors (e.g., pet odors) can be removed.

\* Design and specifications are current as of December 2014 but are subject to change without prior notice. \* Actual colors may differ slightly from the colors shown in this brochure.



# Specifications: Air Purifiers with Humidifying System



Models		KI-A60	KC-D60E	KC-D40E	KC-A50E	KC-930E
Color		- W (white)	- W (white)	- W (white), - B (black)	- W (white), - B (black)	- W (white)
Humidifying	Humidifying system	Natural vaporization	Natural vaporization	Natural vaporization	Natural vaporization	Natural vaporization
	Tank capacity	4.0 L	3.0 L	2.5 L	3.6 L	2.1 L
	Humidifying capacity*2	730 mL/hour	660 mL/hour	440 mL/hour	600 mL/hour	350 mL/hour
Recommended area	Air purifying*1	50 m <sup>2</sup>	48 m <sup>2</sup>	26 m <sup>2</sup>	38 m <sup>2</sup>	21 m <sup>2</sup>
	Humidifying*2	34 m <sup>2</sup>	30 m <sup>2</sup>	21 m <sup>2</sup>	27 m <sup>2</sup>	16 m <sup>2</sup>
Recommended area for high-density Plasmacluster ions*3		35 m <sup>2</sup>	35 m <sup>2</sup>	21 m <sup>2</sup>	28 m <sup>2</sup>	17 m <sup>2</sup>
Operation modes		3 (max. / med. / low) eco auto and pollen	3 (max. / med. / low) auto and pollen Rainy mode		3 (max. / med. / low) auto and pollen	3 (max. / med. / low) auto
Voltage/frequency (V, Hz)		220-240, 50/60	240, 50/60	240, 50/60	220-240, 50/60	220-240, 50/60
Power input (W)	Without humidifying	53 / 32 / 6.6	80 / 24 / 5.5	25 / 12 / 5	42 / 18 / 4.3	27 / 13 / 4.5
	With humidifying	53 / 33 / 10	70 / 26 / 7	19 / 14 / 7	36 / 20 / 7.4	27 / 13 / 4.5
(max. / med. / low)						
Standby power (W)		Approx. 0.6	0.9	0.9	0.9	0.9
Inverter operation		Yes	Yes	Yes	Yes	Yes
Airflow	Without humidifying	402 / 294 / 90	396 / 240 / 90	216 / 144 / 60	306 / 216 / 60	180 / 126 / 60
	With humidifying	402 / 294 / 132	366 / 240 / 90	180 / 144 / 60	288 / 216 / 90	180 / 126 / 60
(max. / med. / low) (m <sup>3</sup> /hour)						
Noise level	Without humidifying	49 / 44 / 20	55 / 45 / 25	47 / 37 / 23	49 / 41 / 16	48 / 39 / 22
	With humidifying	49 / 44 / 26	54 / 45 / 25	43 / 37 / 23	47 / 41 / 23	48 / 39 / 22
(max. / med. / low) (dB)						
Special program mode		Plasmacluster ion shower*4, Auto restart*5, Child lock*6	Haze mode High-density Plasmacluster ion shower*4, Auto restart*5, Child lock*6, On/Off timer	Plasmacluster ion shower*4, Auto restart*5, Child lock*6	Plasmacluster ion shower*4, Auto restart*5, Child lock*6	—
Filter type	Dust collection	HEPA*7	HEPA*7	HEPA*7	Antimicrobial HEPA*7	All-in-one dust collection deodorizing filter*8
	Deodorization	Yes	Yes	Yes	Washable deodorizing	
	Pre-filter	Yes	Yes	Yes	Yes	
	Humidifying	Yes	Yes	Yes	Yes	
Filter life	Dust collection	Up to 10 years*8	Up to 10 years*8	Up to 10 years*8	Up to 10 years*8	Up to 2 years*6
	Deodorizing filter	Up to 10 years*8	Up to 10 years*8	Up to 10 years*8	Up to 10 years*8	Up to 1 year
	Humidifying filter	Up to 10 years	Up to 10 years	Up to 10 years	Up to 10 years	Yes
Sensor	Odor	Yes	Yes	No	Yes	No
	Dust	Yes	Yes	Yes	Yes	No
	Temperature and humidity	Yes	Yes	Yes	Yes	No
Clean sign indicator	Dust Monitor	Yes (5 steps)	Yes (5 steps)	Yes (5 steps)	Yes (5 steps)	Yes (3 steps)
	Odor Sign	Yes (3 steps)	Yes (3 steps)	Yes (3 steps)	Yes (3 steps)	Yes (3 steps)
Light control button		Yes (bright / dim / off)	Yes (bright / dim / off)	Yes (bright / dim / off)	Yes (bright / dim / off)	Yes (bright / off)
Power cord length (m)		2.0	2.0	2.0	2.0	2.0
Plug type		Type C (2-pin)	Type C (2-pin)	Type C (2-pin)	Type C (2-pin)	Type C (2-pin)
Dimensions (W x H x D) (mm)		410 x 684 x 340	420 x 637 x 242	399 x 615 x 230	399 x 603 x 273	375 x 535 x 205
Net weight (kg)		13.0	8.6	7.9	9.2	6.1
Replacement filter	HEPA filter	FZ-AX6HFE	FZ-D60HFE	FZ-D40HFE	FZ-A50HFE	All-In-One Dust Collection Filter
	Deodorizing filter	FZ-AX6DFE	FZ-D60DFE	FZ-D40DFE	FZ-A50DFE	
	Humidifying filter	FZ-AX6MFE	FZ-A60MFE	FZ-A60MFE	FZ-A60MFE	
Replacement Unit		IZ-C75SE	—	—	—	—
Plasmacluster ion purification	Airborne microbes					
	Clinging odors					
Filter purification	Capture and reduction of growth					
	Deodorizing					
	Capture					

\*1 Recommended room size: Measured based on the JEM1467 standard of the Japan Electrical Manufacturers' Association. \*2 Measurement conditions: 20°C, 30% humidity (JEM1426) \*3 Size of a room in which approximately 7,000 ions can be measured per cm<sup>3</sup> in the center of the room (at a height of approximately 1.2 meters from the floor) when the product is placed next to a wall and operated at the maximum operation position. \*4 Ion density about 1.5 times higher for 60 minutes in the applicable room size. \*5 The air purifier automatically resumes operation when power returns, even after a sudden power interruption, such as due to a circuit breaker. \*6 By pressing the Child Lock button for more than three seconds, the operation buttons are locked to help prevent inadvertent operation by children or pets. \*7 HEPA is defined by the Japan Electrical Manufacturer's Association Standard, JEM1467. The filter removes more than 99.97% of 0.3-micron dust particles. \*8 At a smoking rate of five cigarettes per day. \*9 Volatile organic compound (VOC). The effectiveness of reducing three volatile organic compounds (formaldehyde, toluene, and ethyl acetate) was tested by Sharp.

- The filter itself may produce an odor and need to be replaced after several months if the air purifier is used to reduce strong odors, such as cigarette smoke or grilled meat. ● Use the air purifier in combination with room ventilation if it is used for strong odors. ● Not all harmful substances in cigarette smoke (e.g., carbon monoxide) can be removed. ● Not all commonly occurring odors (e.g., pet odors) can be removed.
- Heat from air drawn in is lost when water evaporates from the humidifier filter, so the temperature of the outgoing airflow is lower than the room temperature. ● Use tap water to fill the water tank.

\* The number in this technology mark indicates the approximate number of ions supplied into 1 cm<sup>3</sup> of air, which is measured around the center of a room (at a height of 1.2 m above the floor) with the applicable floor area for High-density Plasmacluster 7000 at the maximum or medium airflow mode when an air purifier with humidifying or an air purifier using a high-density Plasmacluster ion-generating device is placed close to a wall. \* Design and specifications are current as of December 2014, but are subject to change without prior notice. \* Actual colors may differ slightly from the colors shown in this brochure.



# Plasmacluster Ion Generator

## IG-DC2

Compact IG-DC2 with High-Quality Design and Illuminating Indicators for a Comfortable Driving Experience



Fits into a Car Cup Holder



- B (crystal black)



### Turbo Airflow Mode for Fast Deodorization

If odors in your car are particularly a concern, use the Turbo airflow mode to release Plasmacluster ions at about twice the speed of standard airflow mode.

Deodorizing is approx. 30% faster.\*1



\*1 Comparison of times required to deodorize clinging smoke odor to an unnoticeable level. Standard airflow mode takes approx. 60 min. and Turbo airflow mode approx. 44 min.

### Skin-Beautifying Spot in a Car

High-density Plasmacluster ions provide skin-beautifying effects for both the driver and passengers in a car while driving.

### Elegant Metal Appearance with Illuminating Indicators

Along with the metal body, the IG-DC2 is equipped with ion indicators that light blue at the air outlet and operation indicators designed in the motif of a car speedometer, providing a high-quality and stylish design.



- To ensure steady emission of high-density Plasmacluster ions, the Plasmacluster ion generating unit in the IG-DC2 needs to be replaced periodically.
- After approximately 17,500 hours, which is roughly two years when operated continuously for 24 hours a day, an indicator on the front of the IG-DC2 will flash notifying that the Plasmacluster ion generating unit needs to be replaced. The IG-DC2 will stop operating after about 19,000 hours (two years and two months) if the Plasmacluster ion generating unit is not replaced.

\*1 The area in which an emitted airborne ion density of approx. 25,000 ions/cm<sup>3</sup> can be measured near the center of the room at a height of approx. 1.2 m from the floor during operation at the high airflow setting when the ion generator is placed near the wall.  
\*2 The recommended distance refers to the maximum distance allowed for the unit to blow enough ions through the air to achieve the measured ion density of 25,000 ions/cm<sup>3</sup> when the unit is running with the stand fully open. When the stand is closed, the distance is approximately 0.3 m.  
\*3 The Plasmacluster ion generation unit should be replaced regularly to enable stable emission of high-density Plasmacluster ions. Replacement is required after approx. 17,500 hours (two years) when operated continuously for 24 hours a day. The ion generator will stop operating after about 19,000 hours (two years and two months) if it is not replaced.  
\*4 The AC adapter, power cord, USB cable or car adapter supplied or designed for each model should be used.  
\*5 For the IG-DC2, applicable interior volume is a measure of the volume in which a Plasmacluster ion density of 25,000 ions/cm<sup>3</sup> emitted into the air can be measured at a point at a height of about 0.5 meters above the floor near the center of the space when this product is placed in a location assumed to be the cup holder beside the driver's seat and operated at the standard airflow setting.  
\*6 When the lithium-ion battery is fully charged.

\* The number in this technology mark indicates the approximate number of ions supplied into 1 cm<sup>3</sup> of air, which is measured around the center of a room (at a height of 1.2 m above the floor) with the applicable floor area at the maximum airflow, when a Plasmacluster ion generator using a high-density Plasmacluster ion-generating device is placed close to a wall. \* Design and specifications are current as of December 2014, but are subject to change without prior notice. \* Actual colours may differ slightly from the colours shown in this brochure.

### Specifications: Plasmacluster Ion Generators

Models	IG-DC2		
Colour	- B (crystal black)		
Recommended area	Approx. 3.6 m <sup>3</sup> *5		
Power	Car adapter (DC 12 V)		
Power consumption (W)	Low	High	Turbo
	1.1	1.8	2.7
Operating noise level (dB)	23	29	33
Continuous operating time	—		
Time to recharge the battery	—		
Replacement unit	IZ-C75CE *3		
Replacement battery	—		
Dimensions (W x D x H) (mm)	Cylindrical, 76-mm top diameter, 65-mm bottom diameter, 150-mm height		
Weight (kg)	Approx. 0.27 (Without car adapter)		
Power cord length (m)	1.8 *4		