

# Landmarks in Sharp's Air Conditioner History

Release of Sharp's original water-cooled air conditioner using ground water.



Release of industry's first air conditioner with cooling, heating, dehumidification, humidification, and ventilation functions.



Start of sales of air conditioner with Plasmacluster technology.



Release of environmentally friendly air conditioner with airflow control.

2006



2007



Release of air conditioner with high-density Plasmacluster technology.

Sharp entered North American mini split market.



1958

1983

1996

2000

2001

2004

2006

2008

2009

2012

2013

Release of room air conditioner with a built-in sensor in the remote controller to detect temperature and humidity.

Start of sales of air purifier with Plasmacluster technology.

Release of air conditioner employing a dual-louver airflow control mechanism.

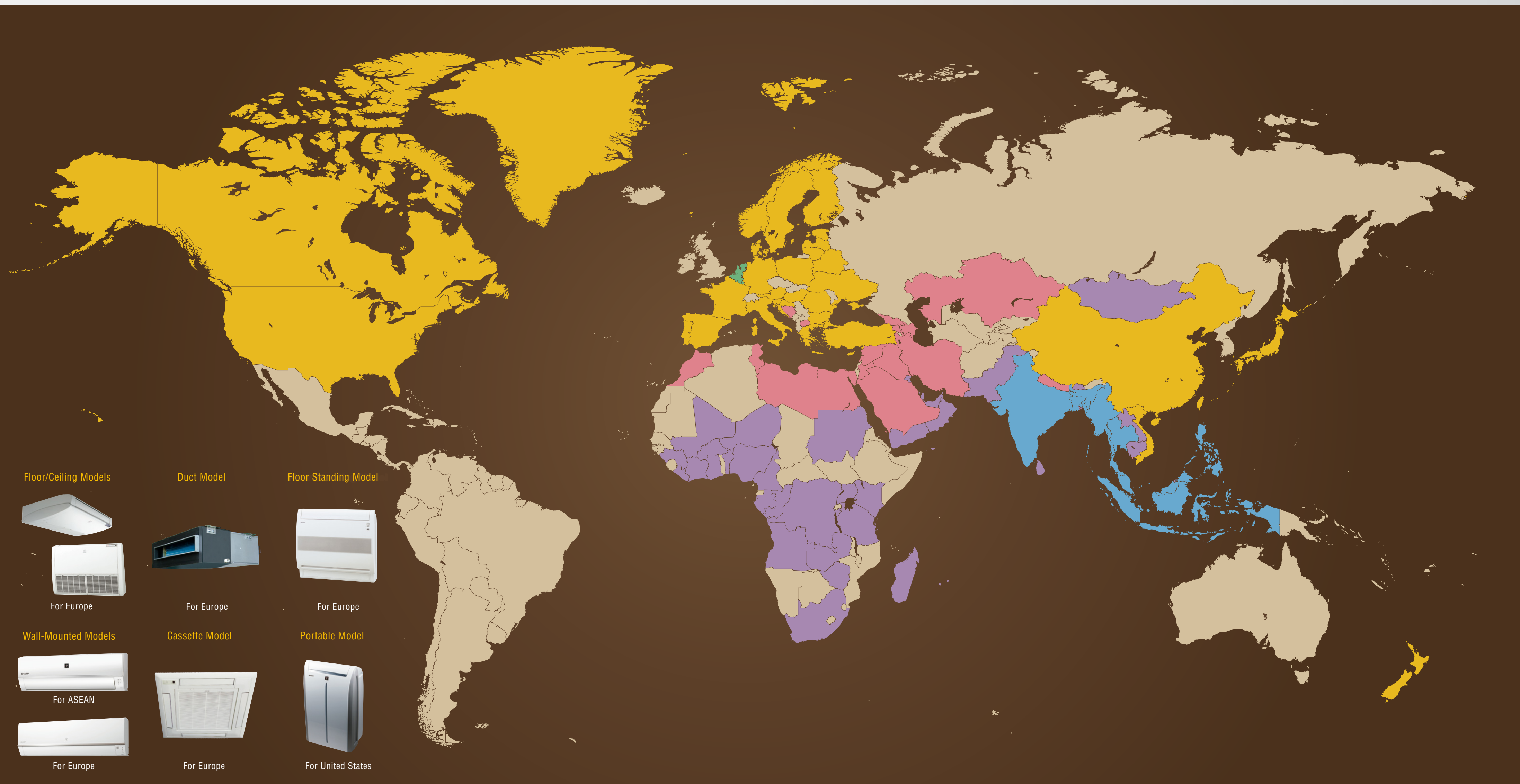


Release of Plasmacluster Ion generator.



Sharp celebrates its 100th anniversary

# SHARP air conditioners are sold in various countries around the world.



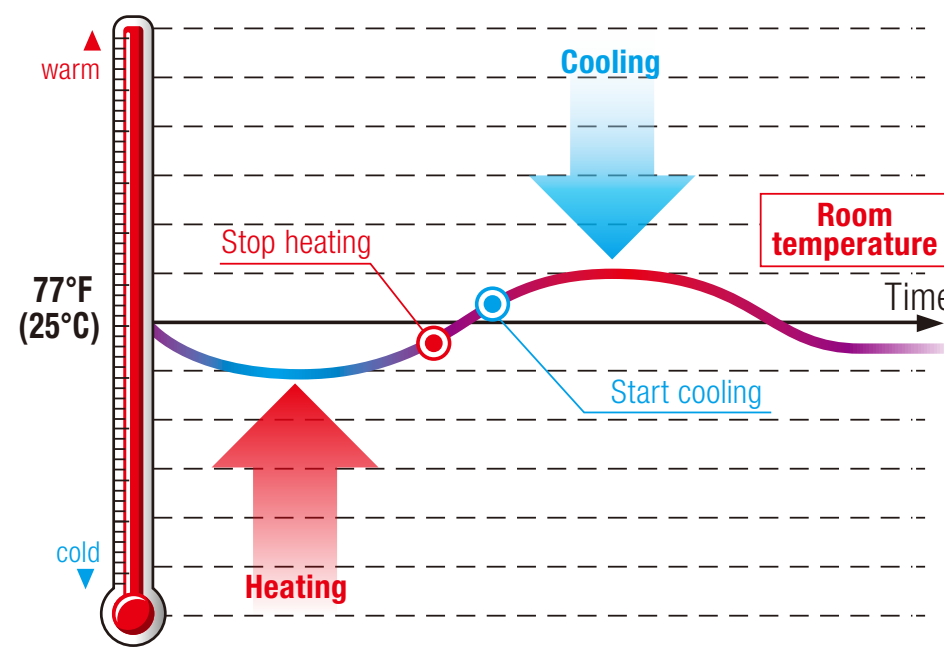
## Countries Selling SHARP Air Conditioners

- Split type / Heating & Cooling / Inverter
- Split type / Heating & Cooling / Non-Inverter
- Split type / Cooling Only / Inverter
- Split type / Cooling Only / Non-Inverter
- Portable and Window Air Conditioners



# Optimized to Suit Your Living Environment

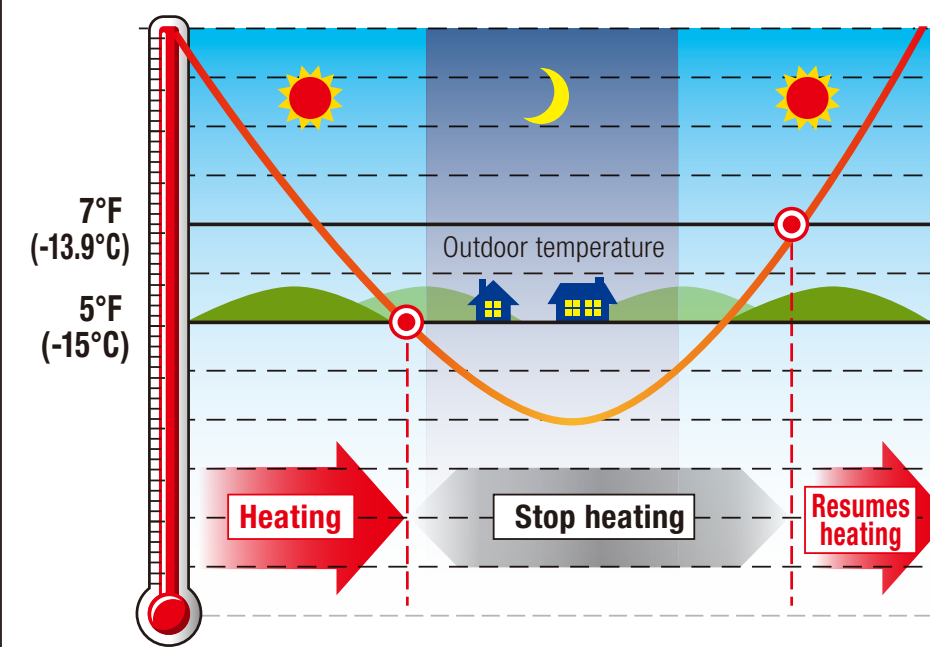
## Auto Changeover



In Auto mode, the unit will automatically switch between heating and cooling modes to maintain the desired temperature. This is convenient for seasons with large temperature changes throughout the day.

Note: This feature is available for single-zone models only.

## 5°F (-15°C) Auto Cutoff



When the outdoor temperature drops below 5°F (-15°C), heating operation stops automatically to prevent the outdoor unit from damage caused by the freezing of drained water. The unit begins operating again only when the outdoor temperature rises above 7°F (-13.9°C). The Auto Cutoff function can be turned off if you prefer.

## Library Quiet®: Only 22 dB\*

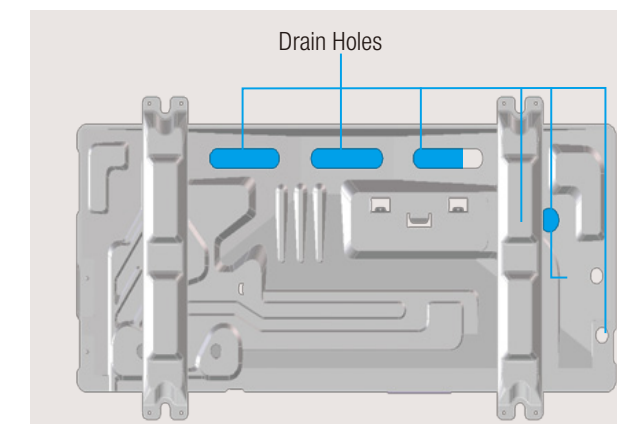
Pressing the Silent button switches the unit to an extra-low fan speed that produces operational noise of just 22 dB. This combines with high-density Plasmacluster Ions to ensure a sound sleep.

**22dB**  
Quiet

\* 22 dB is for AY-XPC09PU only. Please refer to the specifications on page 10 for other models.

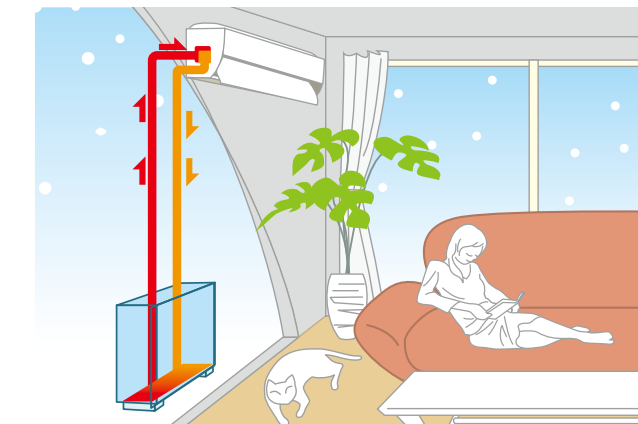


## Outdoor Units Specially Designed for North America



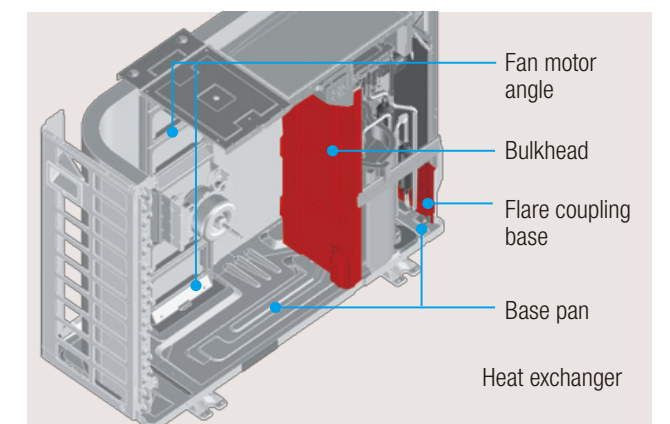
### Optimal Drainage Holes

With conventional air conditioners, malfunctions in winter are often caused by water freezing in the outdoor unit. To prevent this, Sharp outdoor units incorporate numerous large drain holes in the base pan to improve drainage. Caps to cover these holes are also included with the product to facilitate use of the units in warm climates where water is drained out via a drain hose.



### Frost Melter

When the heat exchanger is used to defrost the unit, warm gas is channeled to the area near the base pan of the heat exchanger. This prevents drain water from freezing and allows expelled water to be drained easily from the holes in the base pan.



### Anti-Corrosion Coating

A special anti-corrosion coating is applied to the heat exchanger, control board, and other key components in the outdoor unit to promote a longer product life.

## Winter Cool



This function enables cooling operation even when the outside temperature is 14°F (-10°C), or down to 5°F (-15°C) for the AY-X36RU. It can be used to continuously cool a hot room—for example, one with computer servers—when the outside temperature is low.

## Auto Restart



Following recovery from a power outage, the unit will automatically restart with the same settings as before the power was cut.

## Wired Wall Remote Control\*

- Compact design
- Timer function
- Temperature setting
- Mode setting
- Error code display

\* For AY-X36RU only.



AY-X36RU shown





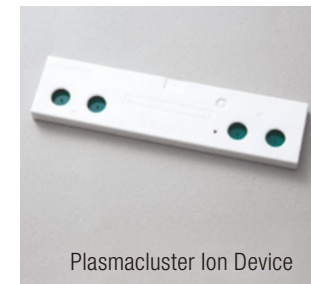
# Plasmacluster Ion Technology

Plasmacluster and the Plasmacluster mark are trademarks or registered trademarks of Sharp Corporation.

## Plasmacluster Ions Clean the Air in the Room

The air inside ordinary houses contains invisible, harmful organisms such as bacteria and viruses. The unique Plasmacluster Ion technology installed in Sharp air conditioners uses the actions of positive and negative ions to clean up these airborne contaminants and create a pleasant living space.

Sharp's unique Plasmacluster Ion technology suppresses airborne viruses, and breaks down and removes airborne mold and other contaminants.



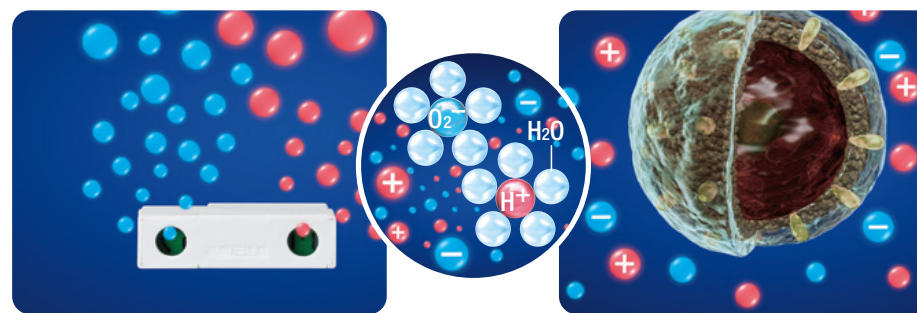
**New Standard for Clean Air**  
Plasmacluster – Only from SHARP  
Note: The Plasmacluster Ion generator installed in each Sharp mini split air conditioner complies with the U.S. federal ozone emission limit and is certified by CARB (the California Air Resources Board).

## Plasmacluster Mechanism for Removing Microbes

### 1 Ions are released.

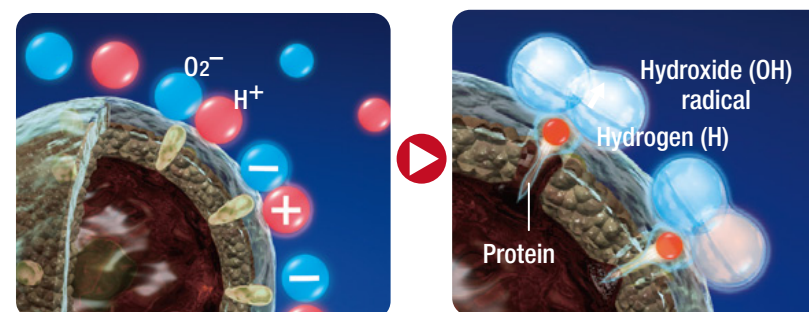
Plasmacluster Ions, the same positive and negative ions found in nature, are generated by plasma discharge and released into the air.

The ions are long lasting, as they are 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.



- Plasmacluster technology can prevent the action of airborne viruses, as well as reduce 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. <sup>\*3</sup> Verified in Sharp test comparisons of ions not surrounded by water molecules.

## Certified Worldwide

Plasmacluster — Gaining Trust and New Customers around the World  
[ Tested by 24 Institutes and Organization ]

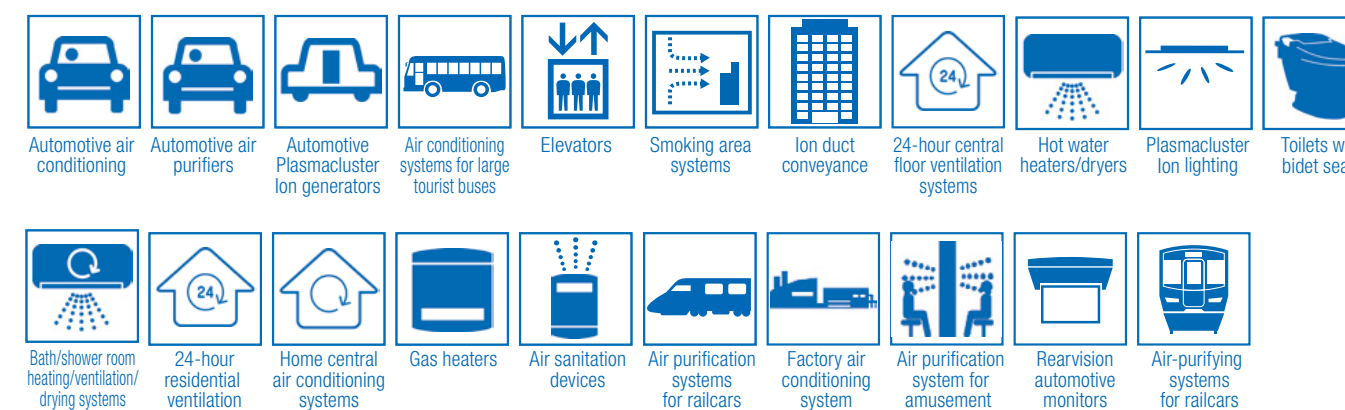


- This is supporting scientific data for Plasmacluster Ion generator.
- Please note that Sharp does not guarantee that test results can be replicated in actual user situations.
- The feature varies upon models/regions
- Plasmacluster's effectiveness will vary depending on the ion density and product.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

Note: In collaboration with research organizations, Sharp has proven the efficacy of Plasmacluster Ions against 29 types of harmful substances (viruses, allergens, mold fungi, and bacteria) as well as their efficacy and working mechanism in neutralizing four types of odors and in beautifying skin.

## 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 use of Plasmacluster Ion technology to the following applications:



## Used in over 50 Million Products in 13 years

Since the release of Plasmacluster Ion technology in 2000, Plasmacluster Ion-equipped products have exceeded the 50-million-unit mark. Sharp aims to bring the benefits of Plasmacluster Ions to every air space.

