

Feature Descriptions

Operation

**Laundry Function (Powerful Dry and Deodorant)**  
To dry and deodorize hanging clothes inside the house with Powerful jet and HD7000 PCI.

**Inverter Controlled Operation**  
This function features quick cooling operation and decreases fluctuation in temperature and reduces power consumption.

**Super Jet**  
Super Jet delivers powerful cool air downward and cools a room and your body quickly.

**Powerful Jet**  
In this operation, the air conditioner delivers incredibly strong and cool air to cool the room instantly.

**Gentle Cool Air System**  
This function provides cold air traveling up the ceiling during cooling operation in order to avoid direct air flow.

**Low Wattage Type**  
Larger evaporators and condensers enable these models to operate with greater energy efficiency.

**Full Power Mode**  
In this operation, the air conditioner works at the maximum power to rapidly cool the room.

**Turbo Operation**  
In this operation, the air conditioner works at “Extra-high” speed to cool the room quickly.

**Lower Room Temperature Setting (from 16°C)**  
In cooling operation, room temperature can be set from 16°C.

**Lower Room Temperature Setting (from 18°C)**  
In cooling operation, room temperature can be set from 18°C.

**Computerized Dry Mode Operation**  
The indoor fan motor and the compressor are controlled by the microcomputer to maintain room humidity without dropping the room temperature.

**Auto Operation Mode**  
In the AUTO mode, the temperature setting and mode are automatically selected according to the room temperature.

**Auto & 3-Step Fan Speed Settings**  
Auto fan speed and 3-step (HIGH/LOW/SOFT) manual fan speed are available.

**Auto Restart Function**  
When power failure occurs and after power recovery, the unit will automatically restart in the same setting which was active before the power failure.

**Filter Sign**  
This function indicates when it is time to clean the air filter.

Control Convenience

**Microcomputer Control**

**LCD Wireless Remote Control**

**24-Hour ON/OFF Programmable Timer**  
The start or stop operation (hour and minute) can be set at same time.

**12-Hour ON/OFF Timer**

**1-Hour OFF Timer**  
When the ONE-HOUR OFF TIMER is set, the unit will automatically turn off after one hour.

**“Awakening” Function**  
When the ON Timer is set, the unit will turn on prior to the set time to allow the room to reach the desired temperature by the programmed time.

**Sleep Mode Function**  
This function alternates On and Off during Off-timer operation, so that it makes comfortable cooling while sleeping. This function works with Off Timer.

**“Auto Sleep” Function**  
When the OFF Timer is set, the temperature setting is automatically adjusted to prevent the room from becoming excessively hot or cold while you sleep.

**Instant Low Wattage Button**  
Pressing this button before the room temperature reaches the set temperature instantly puts the unit into low-power mode.

**4-way Auto Air Swing**  
Automatic vertical & horizontal airflow is available in order to make the room uniformly cool.

**Auto Swing Louver**  
Automatic vertical airflow is available in order to make the room uniformly cool.

Air Quality

**High-Density Plasmacluster Ions**  
High-Density Plasmacluster Ions clean the room airpowerfully and quickly. Plasmacluster technology is Sharp's original air purifying technology that removes suspended airborne mold and viruses.  
\* The number in this technology mark indicates an approximate number of ions supplied into air of 1 cm<sup>3</sup>, which is measured around the center of a room (at 1.5 m height above the floor) at the maximum wind volume, when an air conditioner using the high-density plasmacluster ion evolving device is placed in a room with the applicable floor area. This product is equipped with a device corresponding to this capacity.

**Plasmacluster Ion**  
Plasmacluster ion generator inside the indoor unit releases positive and negative Plasmacluster Ions into the room and reduces some airborne mold and viruses.

**Green Filter + Ag+**  
To inhibit bacterial growth on the filter.

**Anti-Mold, Detachable & Washable Air Filter**

Additional Features

**All-aluminum Heat Exchanger**

**Quiet Operation**

**Self Cleaning Function**  
SELF CLEAN operation provides the effect of reducing the growth of mold fungus, and dries the inside of the air conditioner unit with Plasmacluster Ions.

**Dual Drain Setting**  
Rightward and Leftward Drain hose setting is available for easy installation.

SHARP

Air Conditioners 2011

Air Conditioners  
Wall mounted  
Portable



Plasmacluster is a registered trademark or trademark of Sharp Corporation.

\* Design and specifications are current as of March 2011, but are subject to change without prior notice.  
\* Actual colors may differ slightly from colors in this catalog.

SHARP

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Beautiful design results from the fusion  
of form, technology, and ecology.

That's the goal of Sharp's air conditioners.





The breeze blowing from these devices nurtures the future of both people and the natural environment.

It's both environmentally friendly, and people-friendly. The true nature of the design lies in its ability to contribute to a pleasanter world. Through environmentally conscious Plasmacluster Ion technology, Sharp is designing a comfortable future for people and the planet.



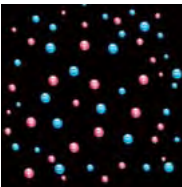
## Plasmacluster technology

Generates and releases the same positive and negative ions that occur in nature through plasma discharges. Sharp's unique Plasmacluster bacteria-removing technology suppresses airborne viruses, and breaks down and removes airborne mold and other contaminants. Incorporated not only in a variety of Sharp's own products, the Plasmacluster Ion technology has also been adopted by many other industries in a variety of products, from automobiles to elevators and toilets.

Plasmacluster Ion Device

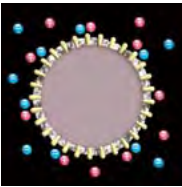


## The Effects of Plasmacluster Ions against Airborne Microbes



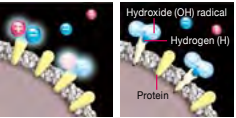
### 1 Release Plasmacluster ions.

Plasmacluster Ions are the same positive and negative ions found in nature. The ions are surrounded by water molecules, and are released into the air.



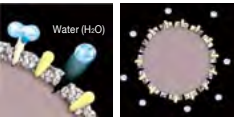
### 2 Attack suspended airborne microbes.

The ions form hydroxide 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 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.





# Unique Plasmacluster Ion technology to clean the air you breathe.



## Plasmacluster Ions

\* The number in this technology mark indicates an approximate number of ions supplied into air of 1 cm<sup>3</sup>, which is measured around the center of a room (at 1.5 m height above the floor) at the maximum wind volume, when an air conditioner using the high-density plasmacluster ion evolving device is placed in a room with the applicable floor area. This product is equipped with a device corresponding to this capacity.

### Plasmacluster Ions clean the air inside rooms, as well as breaking down and removing unwanted odors.

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

- Airborne viruses
- Airborne mold
- Airborne allergens

The air inside a typical home contains a lot of mold and viruses



### Plasmacluster Ions spread throughout the whole room, cleaning the air.

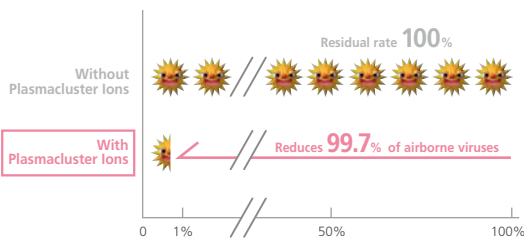


**Powerful "Plasmacluster Ion"**  
Utilizing the Super Jet or Powerful Jet functions to deliver a powerful stream of air immediately sends Plasmacluster Ions into every corner of the room at once, riding swiftly on the strong air current.

### Effective against Airborne Viruses

#### Effects on Airborne Viruses

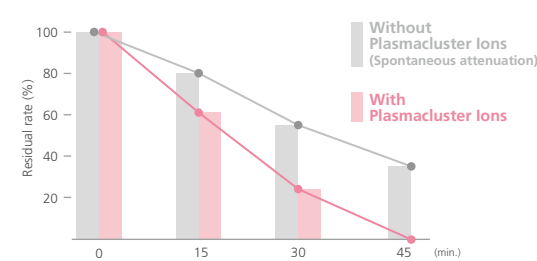
(Actual reduction rate may differ according to room conditions and the model in use)



- Test method: A Plasmacluster Ion generator is placed in a 1 m<sup>3</sup> box. Airborne viruses are suspended in the air inside the box followed by the release of Plasmacluster Ions.
- Reduction method: Generate Plasmacluster Ions in the air.
- Test performed by the Kitasato Institute Medical Center Hospital and Kitasato Research Center of Environmental Sciences in Japan.
- Test report No.: 00313

### Effective against Airborne Mold Spores

#### Effects on Airborne Mold Spores



- Mode of operation: Plasmacluster Ion generator single operation in an experimental room of approximately 13.0 square meters.
- Temperature inside the room: 21°C, Humidity: 53% RH.
- Method of measurement: Air samples measuring the quantity of mold were taken from the center inside the room.
- Reduction method: Without filter, generate Plasmacluster Ions in the air.
- Test performed by the Ishikawa Health Service Association in Japan.
- Test report No.: 1503691



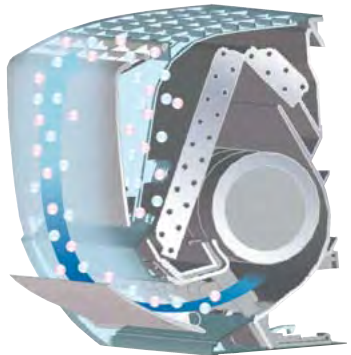
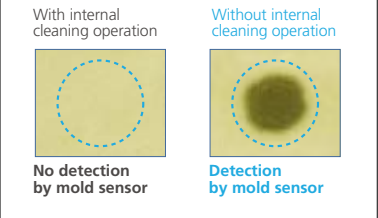
### Self Cleaning Function

(Inverter and Super Deluxe models only)

### Plasmacluster Ions block the growth of mold inside the air conditioner.

While air blow and dry operations are performed for about 40 minutes, Plasmacluster Ions are blown through the interior of indoor equipment. This prevents odor-causing mold from growing on the surface of the heat exchanger. (Note: Mold already formed cannot be removed.)

#### Test results using a visual mold sensor



Even the inside stays clean using Plasmacluster Ions!

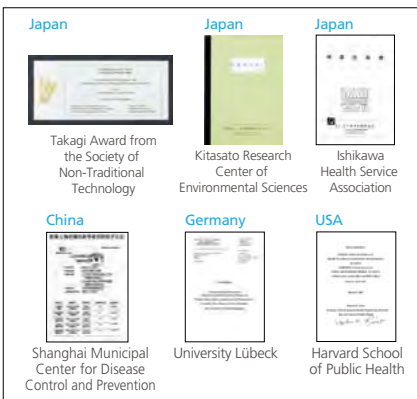
Test method: Measurements taken at Sharp's laboratory using the AY-P28XC model (Japanese model.) At an outdoor/room temp. of 27°C and humidity of 70%, a cycle consisting of one hour of cooling operation, 40 minutes of internal cleaning, and 20 minutes off was conducted for 14 days (40 cycles). Visual mold sensor manufactured by the Institute of Environmental Biology.

### You can count on for clean and healthy air

#### >> Proven at 13 Institutions in Japan and around the World

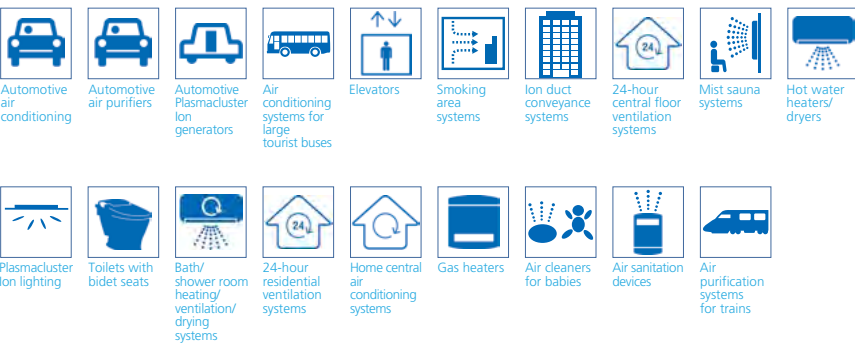
Test substance	Tested by:
Airborne viruses	• Seoul University (Korea) • Shanghai Municipal Center for Disease Control and Prevention • Retroscreen Virology, Ltd. (UK) • Kitasato University Kitasato Institute Medical Center Hospital (Japan) • Kitasato Research Center of Environmental Sciences (Japan)
Adhering viruses	• Retroscreen Virology, Ltd. (UK)
Airborne allergens	• Hiroshima University Graduate School of Advanced Sciences of Matter (Japan) • Osaka City University Medical School's Department of Biochemistry & Molecular Pathology (Japan) • Ishikawa Health Service Association (Japan)
Airborne mold	• Professor Gerhard Artmann, Aachen University of Applied Sciences (Germany) • Ishikawa Health Service Association (Japan)
Airborne microbes	• Shanghai Municipal Center for Disease Control and Prevention • Professor Gerhard Artmann, Aachen University of Applied Sciences (Germany) • Harvard School of Public Health (USA) • Kitasato University Kitasato Institute Medical Center Hospital (Japan) • Kitasato Research Center of Environmental Sciences (Japan) • Ishikawa Health Service Association (Japan)
Adhering microbes	• Kitasato University Kitasato Institute Medical Center Hospital (Japan)
Adhering odor	• Japan Spinners Inspecting Foundation
Adhering mold	• The University Lübeck (Germany) • Japan Food Research Laboratories

\* Test results for other test substances carried out by the same test institution at the same time have not been shown.



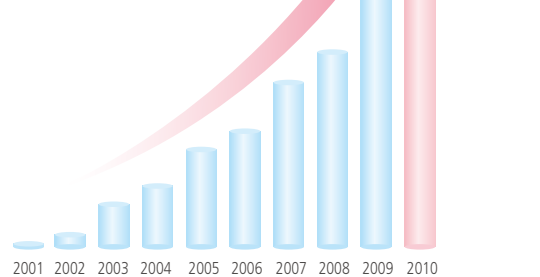
#### >> Used in a variety of industries

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 30 million products in 10 years

In the nine years since its release, Plasmacluster Ion-equipped products have exceeded the 30-million-unit mark. Sharp aims to bring the benefits of Plasmacluster Ions to every air space.





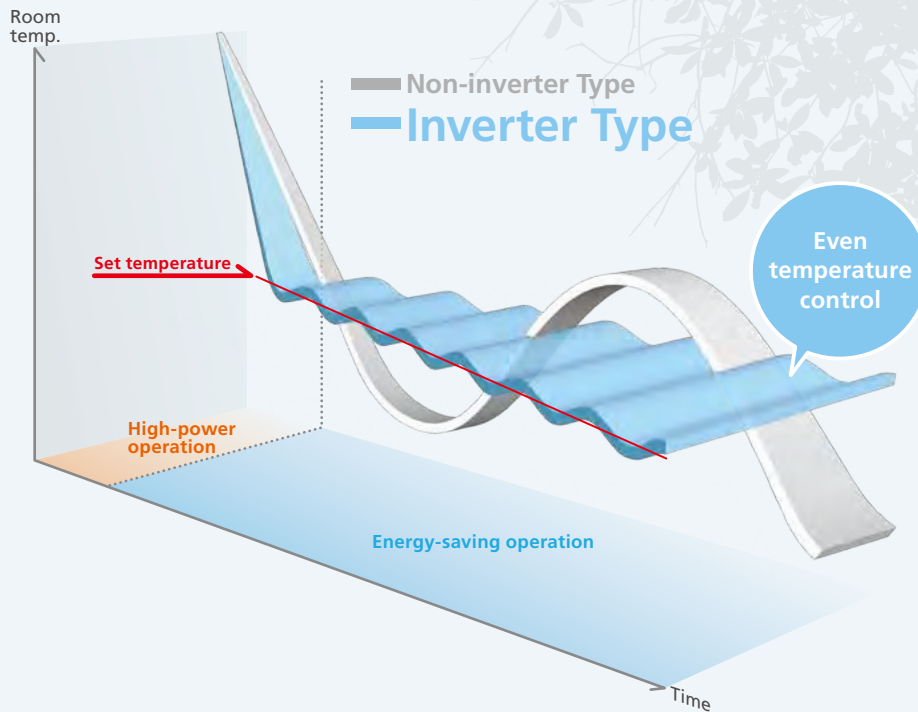
Significantly reduces the burden on the environment as well as running costs.



## Inverter Technology

Air conditioner operation is controlled to achieve a considerable reduction in power consumption, maintaining a pleasant room temperature.

While inverter air conditioners have a full-output operation mode, they drastically reduce energy consumption when used in energy-saving operation mode. This is thanks to inverter circuitry, which modifies and maintains room temperature by switching the compressor between high and low operation modes, instead of switching it on and off completely as non-inverter models do. The inverter model keeps the compressor running and simply reduces output when the room reaches the target temperature, enabling comfortable, even temperature control.



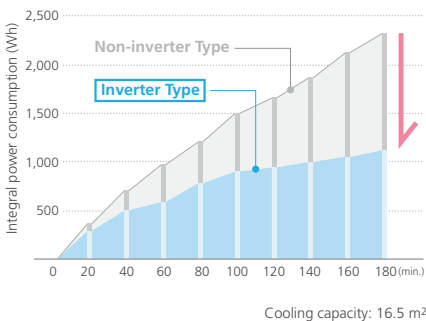
### ■ Saving Energy

Inverter air conditioners go into energy-saving operation mode immediately once the set temperature is achieved. Sharp's inverter air conditioners reduce energy consumption and increase performance efficiency using high-power DC motors for the compressor and outdoor fan, and a pulse linear expansion valve.



Electronic  
Digital Control

Power Consumption Comparison  
after Three Hours of Operation



Reduces  
integral power consumption  
by approx.  
**50.3%**

### ■ Quick Cooling

Inverter air conditioners quickly reach the set temperature.

#### ■ Even temperature control

Inverter models keep the compressor running and reduce output (rather than shutting it off) when the room has reached its target temperature. This prevents temperature fluctuation and enables comfortable and even temperature control.

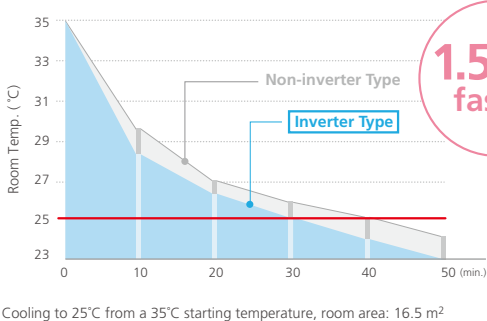
#### ■ Reduced discomfort from humidity

Inverter models produce no humidity when adjusting room temperature.

#### ■ Quiet operation

Operational noise produced when the compressor shuts down is not present with inverter models.

Cooling Speed Comparison

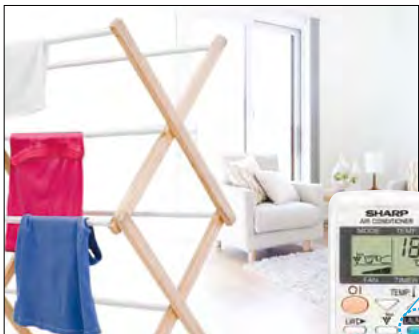


1.5 times  
faster



## Laundry Function

The air conditioner blows on wet clothing and moisture is transferred to the room's interior, to be removed afterward with the dehumidifier function. This makes it easier to dry your laundry indoors. After five hours, laundry-drying operation switches to fan operation, which incorporates swing function and emission of Plasmacluster ions. Drying laundry indoors can result in an unpleasant odor, largely due to leftover dirt and germs the washing machine failed to get out. With highly concentrated Plasmacluster ions, however, odors are suppressed for a feeling of refreshing cleanliness. (● AH-XP10/13MR)



## Instant Low Wattage 2 Steps

The air conditioner can be set to energy-saving mode via a two-stage adjustment. Power consumption is limited to the displayed value, reducing electricity costs and preventing over-cooling.

#### Digital Indicator

24 K: 1.5 kW and 1.0 kW/18 K: 1.0 kW and 0.8 kW  
(● AH-XP18/24MV ● AH-XP18/24MY)



#### LED Indicator

13 K: 800 W and 600 kW/10 K: 600 W and 400 kW  
(● AH-XP10/13MV ● AH-XP10/13MY ● AH-XP10/13MR)



## R410A R410A refrigerant

Sharp's inverter air conditioners use R410A refrigerant and have no adverse impact on the ozone layer when in use. Sharp's inverter models contribute to environment- and people-friendly living.





Superior corrosion resistance achieved through reliable technology.



All-aluminum Heat Exchanger

The latest outdoor units employ an All-aluminum heat exchanger. This type is resistant to corrosion and highly durable.

- IMPROVEMENT 1

Replaced copper tube with more efficient aluminum tube

Smaller footprint and reduced weight
- IMPROVEMENT 2

Decreased air resistance by flattening the tube

Improved heat exchange efficiency
- IMPROVEMENT 3

Metallically joined the fin to the tube

Decreased heat transfer loss from tube to fin
- IMPROVEMENT 4

Achieved high refrigerant-flow velocity using a canicular tube

Accelerated heat conduction and reduced refrigerant use



Advanced outdoor unit employing an All-aluminum heat exchanger

MERITS

High Energy Efficiency



Cost-saving Design

- 1. High energy efficiency
- 2. High cost-effectiveness
- 3. High corrosion-resistance

Less Refrigerant



Environmental Design

- 1. Sorting before recycling is unnecessary
- 2. Even less refrigerant for even greater environmental performance

Smaller and Lighter



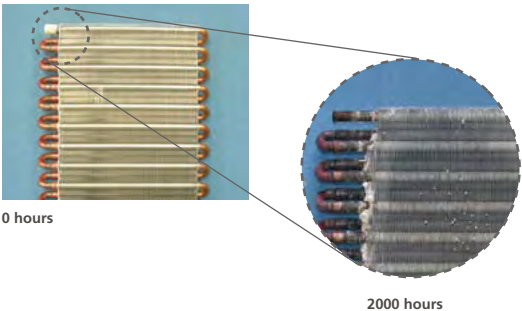
Space-saving Design

- 1. Easily wall-mounted
- 2. Occupies a small area

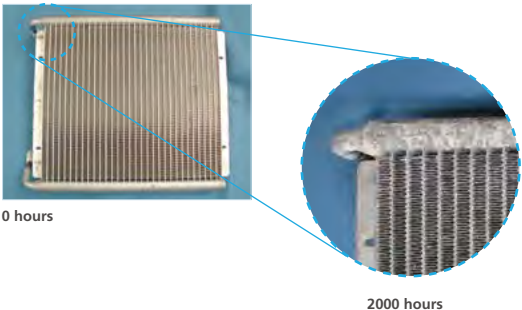
Durability Demonstration

Accelerated test\*  
(Not tested under actual use conditions)

Copper-Aluminum



All-aluminum



Economic security Cost effectiveness

All-aluminum condensers are more corrosion-resistant than copper-aluminum condensers thanks to the use of non-contact copper. The result is longer operational life.

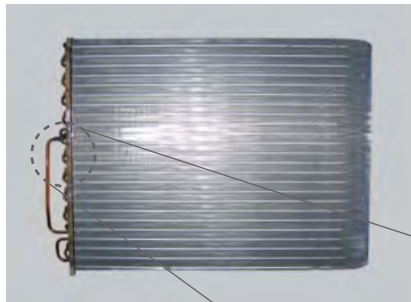
Ecological security Environmental friendliness

In All-aluminum condensers, different fin and tube materials prevent tube corrosion and refrigerant leakage.

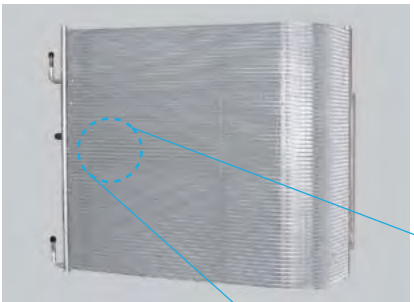
\*Accelerated test conditions SST (salt spray test) conditions: JIS Z 2371

Comparison with conventional heat exchanger

Conventional heat exchanger  
(Copper-Aluminum)



All-aluminum heat exchanger



An innovative refrigerant tube



- 1. Conventional copper tube
- 2. Improved aluminum tube

Weight reduced by 40 %

Sorting before recycling is unnecessary

Volume of refrigerant reduced by approx. 50 %

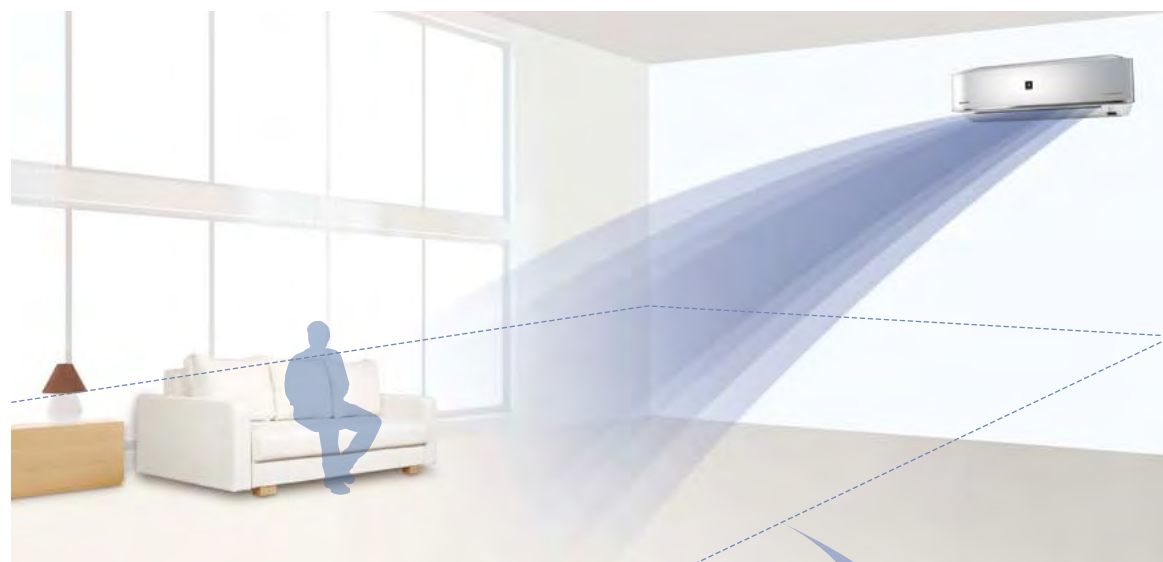


# Three selectable airflows create the ideal interior environment for each time of the day.

## Fast, strong airflow for instant cooling



Super Jet

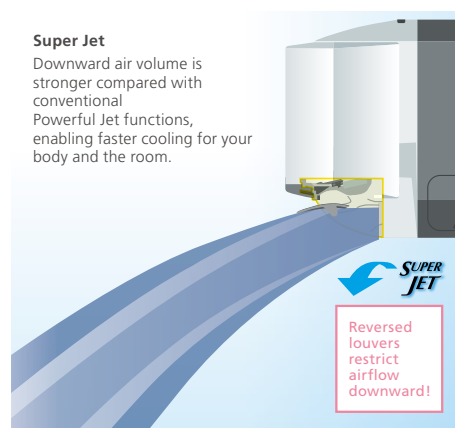


### Powerful, strong airflow blowing vigorously downwards.

The large fan emits an expanded air volume with vigorous speed, instantly cooling both your body and the room. The reversible louvers send the airflow further downward, placing you in the direct path of the breeze even if you are seated near the ground or lying down.

### Large fan and reversible louver construction enable even more powerful cooling than ever before.

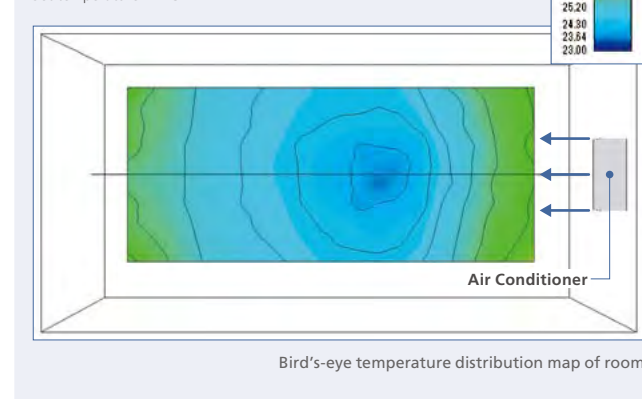
Even greater air volume. Powerful, high-speed cooling cools the body directly while immediately creating a pleasant interior environment.



Super Jet floor-surface temperature distribution map

Super Jet cooling mode

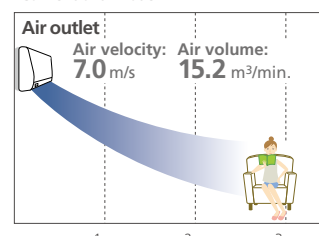
Cooling capacity: 18000 BTU/h, room area: 25.9 m<sup>2</sup>  
Set temperature: 27°C



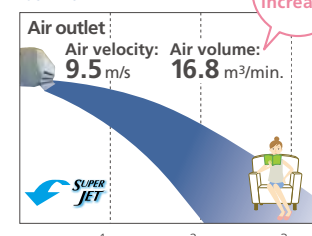
Bird's-eye temperature distribution map of room

### Air velocity comparison

•Conventional model



•SUPER JET



Thanks to an air velocity higher than conventional air conditioners, you feel cooler with Super Jet.



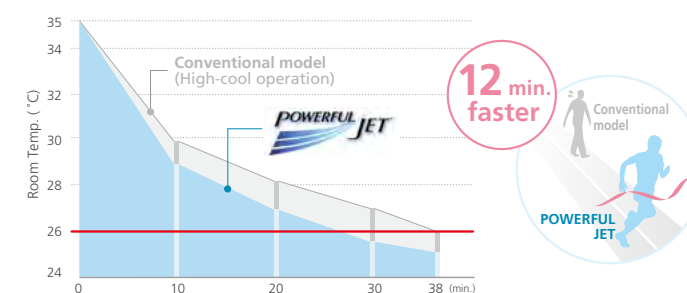
Powerful Jet



### Powerful airflow directed straight at the body.

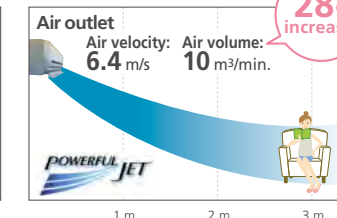
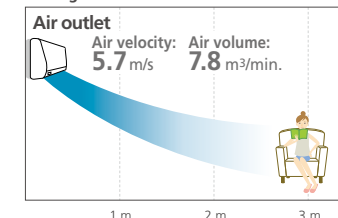
Delivers a powerful blast of cool air. When you stand in front of the air conditioner, you can feel the cool breeze with your entire body. For times when you want to cool down quickly, this offers relief from hot, humid weather, or after exercise or other exertion.

Powerful Jet Cooling Speed Comparison Cooling capacity: 9000 BTU/h, room area: 13.2 m<sup>2</sup>



The new model reaches the set temperature approx. **30% faster** than conventional models, as shown in the graph above. Powerful Jet cools the room quickly, so you don't have to wait to relax.

### Strong and direct air

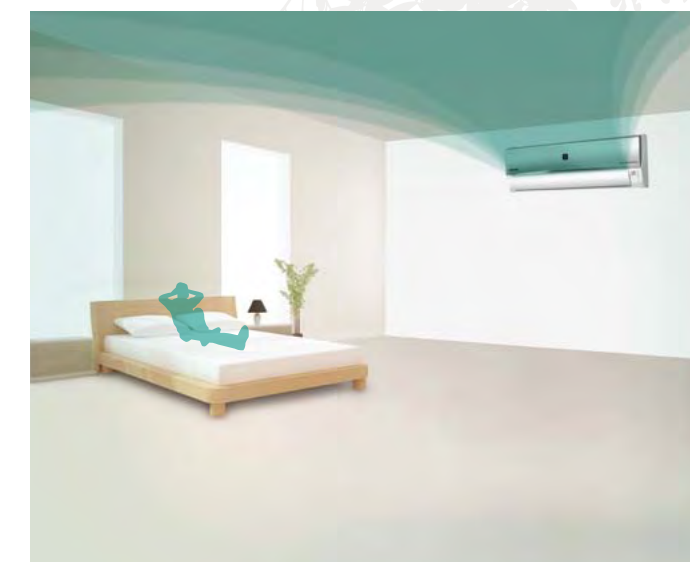


The Powerful Jet function lowers the sensible temperature even more because of the high air volume and velocity of the cool air that it produces.

## Gentle airflow for considerate cooling



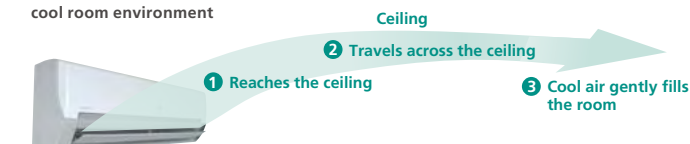
Gentle Cool Air



### All-embracing airflow from the ceiling to the walls.

Cool air spreads throughout the room, creating a pleasant environment for everyone. Its indirect breeze makes this mode ideal for use when pregnant women, the elderly, and others who may be sensitive to low temperatures are present. The soft flow of air also makes it easy to sleep.

The secrets to creating a gentle, cool room environment



Sharp has researched the effects of moving air on temperature. According to the Coanda effect\*, a moving gas or fluid leaving a nozzle tends to follow nearby surfaces, and cold air tends to move down. By delivering cold air towards the ceiling, Sharp's technicians have designed a system that cools the whole room gently and evenly.

\* The Coanda effect was discovered in 1930 by worldwide aerodynamicist H. M. Coanda, born in Romania in 1885.

