SHARP

ISO 14001 BUREAU VERITAS Certification

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SHARP

Plasmacluster

PLASMACLUSTER AIR-CONDITIONER ELIMINATES VIRUSES,
BACTERIA, HAZE AND ALLERGENS AT EVERY CORNER

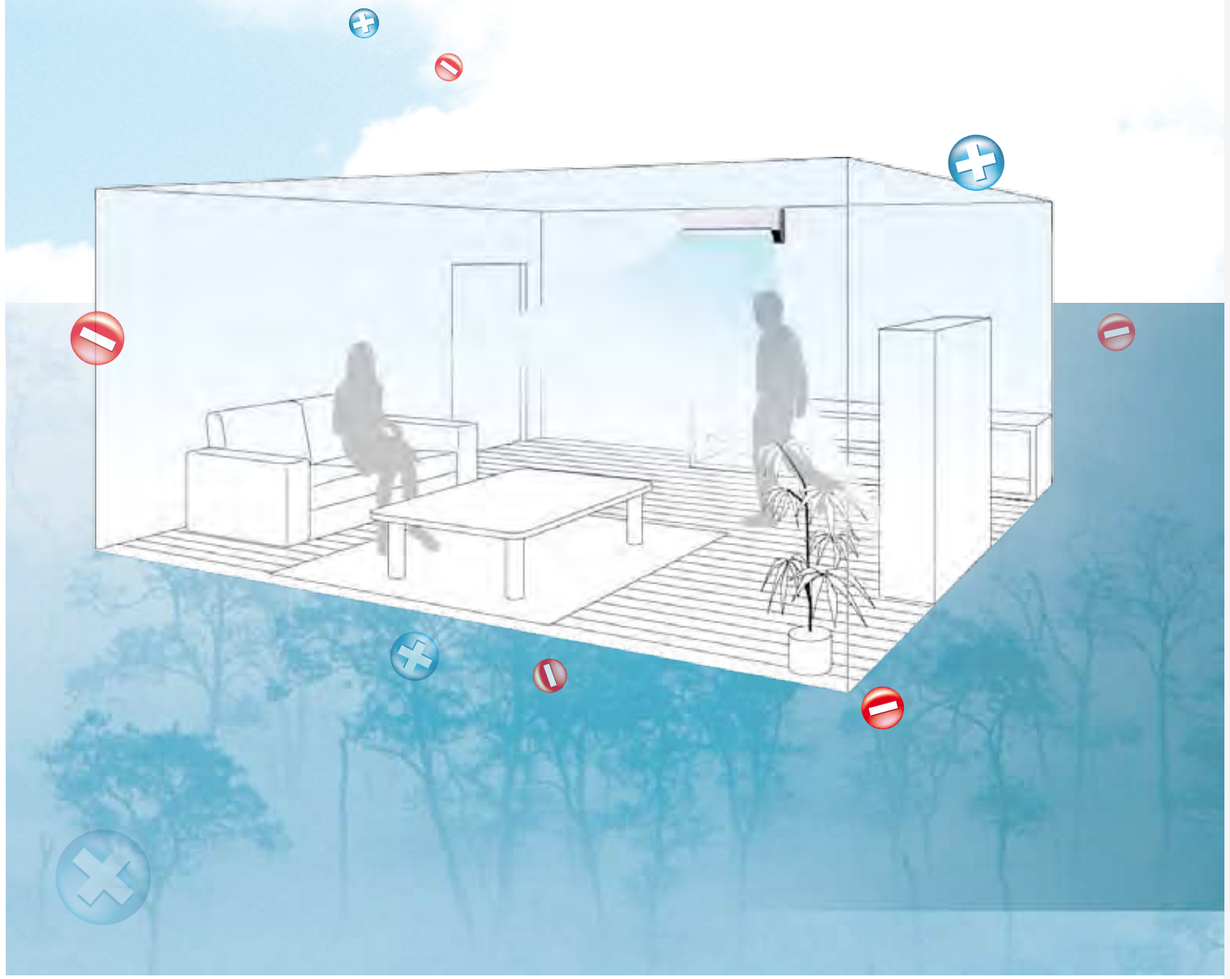
PROTECTING YOUR LOVED ONES

YOU CAN'T RUN
YOU CAN'T HIDE

Spatial Revolutions

Plasmacluster Ion technology

Using the same positive and negative ions that occur in nature to clean the air



SPECIFICATIONS

Model	Indoor			AHXP10LV	AHX9LEV	AHAP9LMV	AHA9LEV	AHA9KCV	AHXP13LV	AHX12LEV	AHAP12LMV	AHAP12LEV	AHA12KCV
	Outdoor			AUX10LV	AUX9LEV	AUA9LMV	AUA9LEV	AUA9KCV	AUX13LV	AUX12LEV	AUA12LMV	AUA12LEV	AUA12KCV
Capacity*1	Cool		kW	2.8	2.8	2.64	2.64	2.5	3.67	3.67	3.5	3.5	3.5
Power Supply			V-ph-Hz	220-240-1ø-50				220-240-1ø-50				220-240-1ø-50	
Voltage Range			V	198 – 264				198 – 264			198 – 242		
Running Current	Cool		A	3.6	-	3.6 – 3.8	3.6 – 3.8	-	4.8	-	4.9 – 5.0	4.9 – 5.0	-
Power Input	Cool		W	735	780	820 – 850	820 – 850	925	1010	1060	1,090 – 1,120	1,090 – 1,120	1290
COP	Cool		-	3.81	-	3.22	3.22	2.78	3.63	-	3.21	3.21	2.71
Sound Pressure Level* (Cool)	Indoor (Hi)		dB	37	-	37	37	37	40	-	38	38	38
	Outdoor		dB	45	-	43	43	50	48	-	48	48	51
Airflow Volume (Cool/Indoor)			m3/min	9.1	-	9.1	9.1	8.3	10.9	-	10.9	10.9	8.8
Dimensions	Indoor	W		860	860	860	860	790	860	860	860	860	845
		H	mm	292	292	292	292	265	292	292	292	292	275
		D		205	205	198	198	170	205	205	198	198	180
	Outdoor	W		730	730	730	730	720	730	730	730	730	848
		H	mm	540	540	540	540	430	540	540	540	540	540
		D		250	250	250	250	320	250	250	250	250	320
Net Weight	Indoor		kg	8.5	8.5	8.5	8.5	9	9	9	9	9	10
	Outdoor		kg	25	25	25	25	25	28.5	28.5	28.5	28.5	35
Pipe Diameter	Liquid side		inch	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
	Gas Side		inch	3/8	3/8	3/8	3/8	3/8	1/2	1/2	1/2	1/2	1/2
Min-Max Pipe Length				1-15	1-15	1-10	1-10	1-10	1-15	1-15	1-15	1-15	1-10
Maximum Chargeless Length				7.5	7.5	7.5	7.5	-	7.5	7.5	7.5	7.5	-
Maximum Height Difference				7	7	5	5	5	7	7	7	7	5
Refrigerant				R410A	R410A	R22	R22	R22	R410A	R410A	R22	R22	R22
Operating Range (Outdoor)	Cool			21-43	21-43	21-43	21-43	21-43	21-43	21-43	21-43	21-43	21-43

Model	Indoor			AHAP18LMV	AHA18LEV	AHAP24KMV	AHA24KEV
	Outdoor			AUA18MV	AUA18LEV	AUA24KV	AUA24KEV
Capacity*1	Cool		kW	5.0	5.0	6.7	6.7
Power Supply			V-ph-Hz	220-240-1ø-50			
Voltage Range			V	198 – 242			
Running Current	Cool		A	7.8 – 8.2	7.8 – 8.2	11.3 – 11.5	11.3 – 11.5
Power Input	Cool		W	1740 – 1790	1740 – 1790	2400 – 2500	2400 – 2500
COP	Cool		-	2.78	2.78	2.5	2.5
Sound Pressure Level* (Cool)	Indoor (Hi)		dB	44	44	44	44
	Outdoor		dB	53	53	54	54
Airflow Volume (Cool/Indoor)			m3/min	16	16	16.4	16.4
Dimensions	Indoor	W		1040	1040	1040	1040
		H	mm	325	325	325	325
		D		222	222	222	222
	Outdoor	W		780	780	890	890
		H	mm	540	540	645	645
		D		269	269	290	290
Net Weight	Indoor		kg	14	14	14	14
	Outdoor		kg	37	37	54	54
Pipe Diameter	Liquid side		inch	1/4	1/4	1/4	1/4
	Gas Side		inch	1/2	1/2	5/8	5/8
Min-Max Pipe Length				1-15	1-15	1-15	1-15
Maximum Chargeless Length				7.5	7.5	7.5	7.5
Maximum Height Difference				10	10	10	10
Refrigerant				R22	R22	R22	R22
Operating Range (Outdoor)	Cool			21-43	21-43	21-43	21-43

Model (indoor)		AY-XPM7/9/12FR
Sound pressure level (cool)	dB	7FR: 37, 9FR: 39, 12FR: 40
Airflow volume (cool)	m^3/min	7FR: 8.0, 9FR: 8.6, 12FR: 9.8

*1 Rating Conditions (Except portable air conditioners)
Inside Air Temperature : 27˚C D.B. 19˚C W.B.
Outside Air Temperature : 35˚C D.B. 24˚C W.B.
*2 Sound pressure level is measured according to JIS C 9612.
*3 For portable air conditioners, operating range is based on indoor temperature.

Plasmacluster Ion Technology can inactivate and eliminate airborne viruses and other contaminations, it can't create a completely microbe-free environment. Actual numbers of ions and disinfecting/purifying effectiveness will vary according to the room conditions and operation method. Sharp does not guarantee its ability to prevent microbial infection.

FEATURES DESCRIPTIONS

OPERATION

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

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.

Turbo Function
Cools your room fast and quickly with its unique super-high fan speed.

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

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

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

CONTROL CONVENIENCE

Microcomputer Control

LCD Wireless Remote Control

LED Display On Front Panel

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.

"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.

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

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

AIR QUALITY

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.

Anti-Mold, Detachable & Washable Air Filter

ADDITIONAL FEATURES

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.

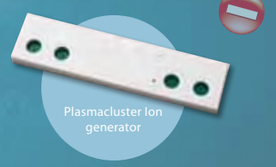
Blow Dry Function
The air-conditioner blower continues its operation for 10 minutes after the air-conditioner is switched off. This function helps to remove moisture in the fins and reduces mold growth.

Dual Drain Setting
Right and Left drain hose setting is available for easy installation.

Design and specification are current as of June 2010, but are subject to change without prior notice. Actual colours may differ slightly from colours in this catalog.

Plasmacluster technology

Positive and negative ions inactivate harmful airborne mold spores, allergens (mite, pollen), and viruses. The effects have been proven at academic institutions around the world. Incorporated in a variety of Sharp's own products, from air conditioners to refrigerators, the Plasmacluster Ion technology has also been adopted by many other industries in a variety of products, from automobiles to elevators and toilets.



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 (H2O) which returns to the air.

Plasmacluster Ions remove airborne contaminants and mold

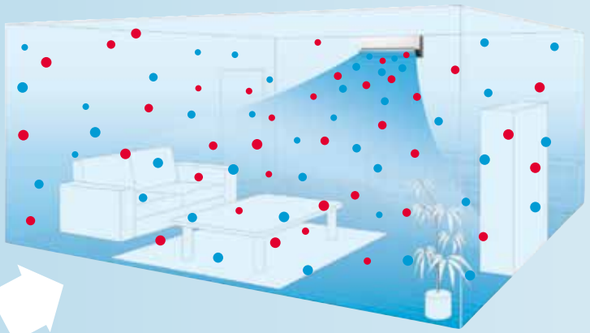
Airborne mold

Airborne allergens

Airborne viruses

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"

With the Powerful Jet function activated, the unit uses strong air to deliver ions to every corner of the room.

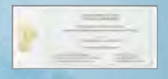
Proven at 13 Institutions in Japan and around the World

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

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

Third-party Verifications for Plasmacluster Ion Technology

JAPAN



Takagi Award from the Society of Non-Traditional Technology.

Kitasato Research Center of Environmental Sciences

Ishikawa Health Service Association

CHINA

Shanghai Municipal Center for Disease Control and Prevention

GERMANY

University Lübeck

USA

Harvard School of Public Health

MODEL LINEUP — Functions

CAPACITY CLASS	MODEL TYPE								
1.0HP / 9000 BTU/h	AHXP10LV	AHX9LEV	AHAP9LMV			AHA9LEV			AHA9KCV
1.5HP / 12000 BTU/h	AHXP13LV	AHX12LEV	AHAP12LMV			AHA12LEV			AHA12KCV
2.0HP / 17100 BTU/h				AHAP18LMV			AHA18LEV		
2.5HP / 24000 BTU/h					AHAP24KMV			AHA24KEV	
MODEL PICTURES									
OPERATION									
Inverter Controlled	●	●							
Powerful Jet	●	●	●	●	●	●	●	●	
Gentle Cool Air System	●	●	●	●	●	●	●	●	
Turbo Function									●
Low Wattage Model	●	●							
Lower Room Temperature Setting (from 18°C)					●			●	
Lower Room Temperature Setting (from 16°C)	●	●	●	●		●	●		●
Computerized Dry Mode Operation	●	●	●	●	●	●	●	●	●
Auto Operation Mode	●	●	●	●	●	●	●	●	●
Auto & 3-Step Fan Speed Settings	●	●	●	●	●	●	●	●	●
Auto Restart Function	●	●	●	●	●	●	●	●	
CONTROL CONVENIENCE									
Microcomputer Control	●	●	●	●	●	●	●	●	●
LCD Wireless Remote Control	●	●	●	●	●	●	●	●	●
LED Display On Front Panel									●
24-Hour ON/OFF Programmable Timer									●
12-Hour ON/OFF Timer Lower Room	●	●	●	●	●	●	●	●	
1-Hour OFF Timer	●	●	●	●	●	●	●	●	
"Awakening" Function	●	●	●	●	●	●	●	●	
"Auto Sleep" Function	●	●	●	●	●	●	●	●	
Auto Swing Louver	●	●	●	●	●	●	●	●	●
Instant Low Wattage Button	●	●							
AIR QUALITY									
Plasmacluster Ion	●		●	●					
Anti-Mold, Detachable & Washable Air Filter	●	●	●	●	●	●	●	●	●
ADDITIONAL FEATURES									
Quiet Operation	●	●	●	●	●	●	●	●	●
Self Cleaning Function	●								
Blow Dry Fuction									●
Dual Drain Setting	●		●			●			

* Specifications are subject to change without prior notice due to product development.

Single Type Wall Mounted

BASIC MODELS

AHA9LEV

MODEL	COOLING OPERATION		
	Capacity		COP
	kW	BTU/h	
AHA9LEV	2.64	9000	3.22

AUA9LEV

AHA12LEV

MODEL	COOLING OPERATION		
	Capacity		COP
	kW	BTU/h	
AHA12LEV	3.5	12000	3.21

AUA12LEV

AHA18LEV

MODEL	COOLING OPERATION		
	Capacity		COP
	kW	BTU/h	
AHA18LEV	5.0	17100	2.78

AUA18LEV

AHA24KEV

MODEL	COOLING OPERATION		
	Capacity		COP
	kW	BTU/h	
AHA24KEV	6.7	22900	2.5

AUA24KEV

AHA9KCV

MODEL	COOLING OPERATION		
	Capacity		COP
	kW	BTU/h	
AHA9KCV	2.5	9000	2.78

AUA9KCV

AHA12KCV

MODEL	COOLING OPERATION		
	Capacity		COP
	kW	BTU/h	
AHA12KCV	3.5	12000	2.71

AUA12KCV

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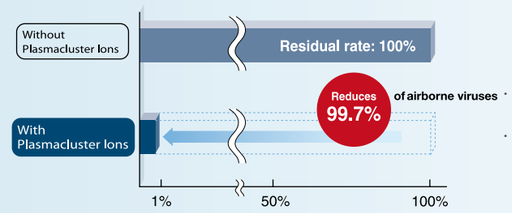
Plasmacluster Ions

Effective against Airborne viruses

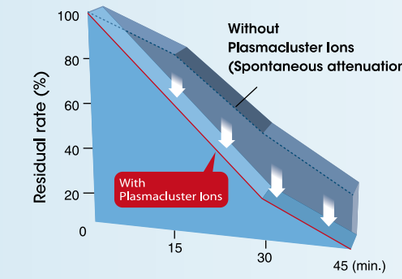
Effects on Airborne viruses
(Actual reduction rate may differ according to room conditions and the model in use)



- Test method:
  A Plasmacluster Ion generator is placed in a 1 m3 box. Airborne viruses are suspended in the air inside the box followed by the release of Plasmacluster Ions.
- Reduction method:
  Generate Plasmacluster Ions into 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

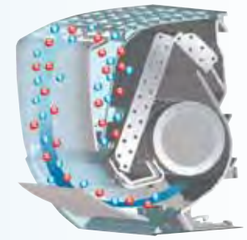


- Mode of operation:
  Plasmacluster Ion generator with single operation in an experimental room of approximately 13.0 square meters.
- Temperature inside the room:
  21°C, Humidity: 53% RH.
- Method of measurement:
  Air samples measuring the quantity of mold were taken from the center of the room.
- 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

PLASMACLUSTER IONS BLOCK THE GROWTH OF MOLD INSIDE THE AIR CONDITIONER. (SUPER DELUXE MODELS ONLY)

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.)



EVEN THE INSIDE STAYS CLEAN USING PLASMACLUSTER IONS!

Test results using a visual mold sensor

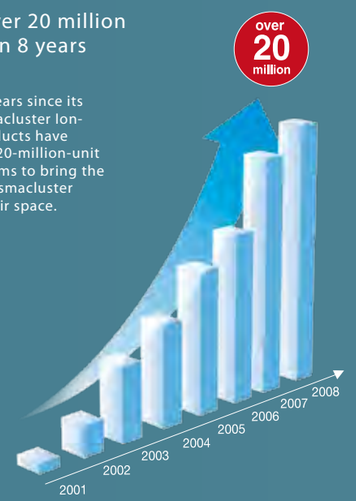
Test method: Measurements taken at Sharp's laboratory using the AY-P28XC model (Japanese model.) At an outdoor/room temp. of 27°C and humidity of 70%, a cycle consisting of one hour of cooling operation, 40 minutes of internal cleaning, and 20 minutes off period was conducted for 14 days (40 cycles).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

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 20 million products in 8 years

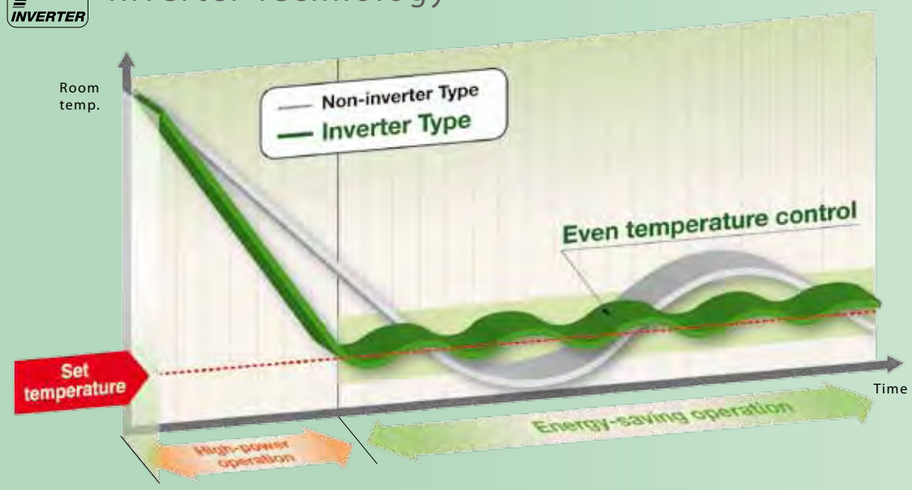
In the seven years since its release, Plasmacluster Ion-equipped products have exceeded the 20-million-unit mark. Sharp aims to bring the benefits of Plasmacluster Ions to every air space.



Energy Saving

Advanced technologies contribute to reduced costs and reduced burden on the environment

Inverter Technology



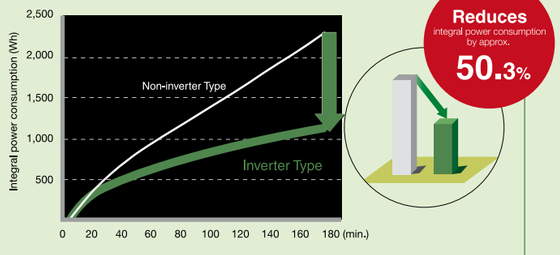
While inverter air conditioners have a full-output operation mode, they drastically reduce energy consumption when used in energy-saving operation mode. The advanced inverter circuitry modifies and maintains room temperature by switching the compressor between high and low operation modes, instead of 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 and even temperature control.

SAVING ENERGY

Inverter air conditioners switch into energy-saving operation mode immediately once the set temperature is achieved. Sharp's inverter air conditioners reduce energy consumption to 52% that of non-inverter models after three hours of operation. Performance efficiency is enhanced using high-power DC motors for the compressor and outdoor fan, as well as a pulse linear expansion valve.

Electronic Digital Control

Pulse Linear Expansion Valve



Power Consumption Comparison after Three Hours of Operation
Cooling capacity: 16.5 m^2

PCI MODELS

AHAP9LMV

MODEL	COOLING OPERATION		
	Capacity		COP
	kW	BTU/h	
AHAP9LMV	2.64	9000	3.22

AUA9LMV

AHAP12LMV

MODEL	COOLING OPERATION		
	Capacity		COP
	kW	BTU/h	
AHAP12LMV	3.5	12000	3.21

AUA12LMV

AHAP18LMV

MODEL	COOLING OPERATION		
	Capacity		COP
	kW	BTU/h	
AHAP18LMV	5.0	17100	2.78

AUA18MV

AHAP24KMV

MODEL	COOLING OPERATION		
	Capacity		COP
	kW	BTU/h	
AHAP24KMV	6.7	22900	2.5

AUA24MV

Single Type Wall Mounted

INVERTER MODELS

AHXP10LV

MODEL	COOLING OPERATION		
	Capacity		COP
	kW	BTU/h	
AHXP10LV	2.80(0.8-3.28)	-	3.38

AUX10LV

AHXP13LV

MODEL	COOLING OPERATION		
	Capacity		COP
	kW	BTU/h	
AHXP13LV	3.67(0.8-4.2)	-	3.63

AUX13LV

AHX9LEV

NEW

MODEL	COOLING OPERATION		
	Capacity		COP
	kW	BTU/h	
AHX9LEV	2.5	9000	2.78

AUX9LEV

AHX12LEV

NEW

MODEL	COOLING OPERATION		
	Capacity		COP
	kW	BTU/h	
AHX12LEV	3.5	12000	2.71

AUX12LEV

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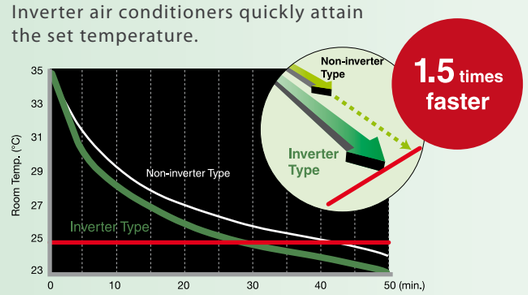
QUICK COOLING

Inverter air conditioners quickly attain the set temperature.



Cooling Speed Comparison
Cooling to 25°C from a 35°C starting temperature, room area: 16.5 m²

EVEN TEMPERATURE CONTROL

Inverter models keep the compressor running and reduces output (rather than shutting it off) when the room has reached the target temperature. This prevents temperature fluctuation and ensures 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 eliminated with inverter models.

INSTANT LOW WATTAGE BUTTON

LW

Pressing this button instantly switches the unit from full-power operation into energy-saving mode. Lower energy consumption helps lower electric bills and prevents the room from becoming too cold.

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.

Sharp's design technology contributes to environment- and people-friendly living.

Suitable Airflow

Selectable Airflow — Powerful Jet and Gentle Cool Air

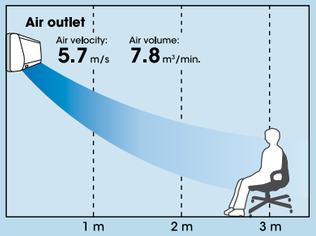
POWERFUL JET

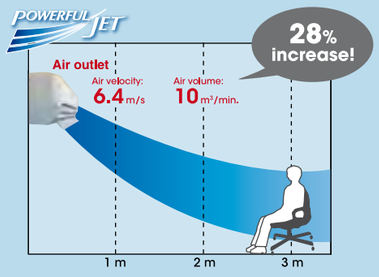
Powerful Jet—Strong, direct airflow that instantly cools your body down

Powerful Jet technology cools you down quickly, offering instant relief from a hot, humid day outside or after exercise or other physical activities. A single button delivers a cool, refreshing blast of air that revives and energizes the body.

The new model reaches the set temperature approx. 30% faster than conventional models, as shown in the graph at the left hand corner. Powerful Jet cools the room quickly, so you don't have to wait to enjoy the cool comfort.

STRONG AND DIRECT AIR

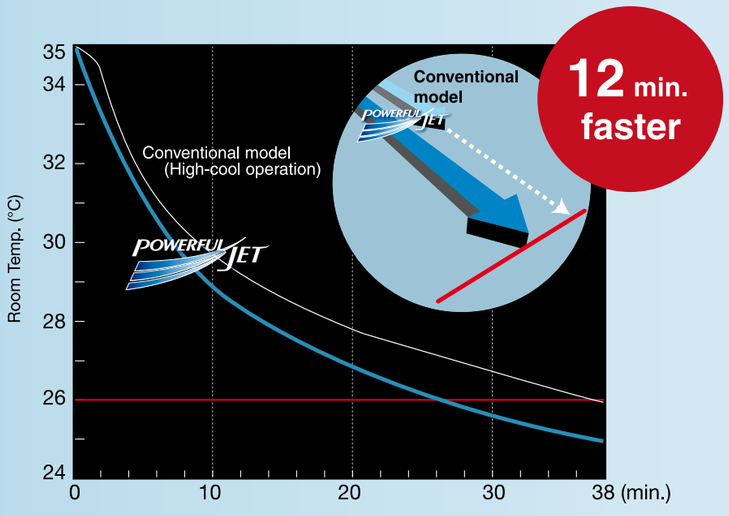




The Powerful Jet function lowers the sensible temperature even more because of the high air volume and velocity of the cool air that it produces.

POWERFUL JET COOLING SPEED COMPARISON

Cooling capacity: 9000 BTU/h, room area:13.2 m²

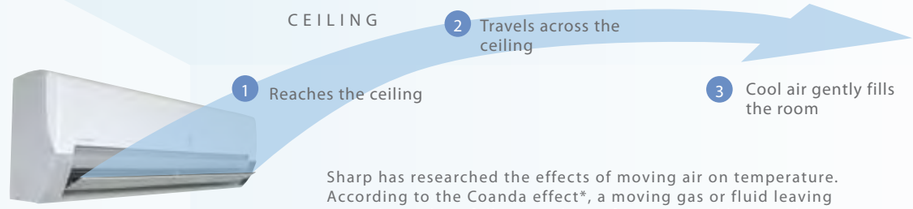


Gentle Cool

Gentle Cool Air—Soft, indirect airflow that creates comfortable living space

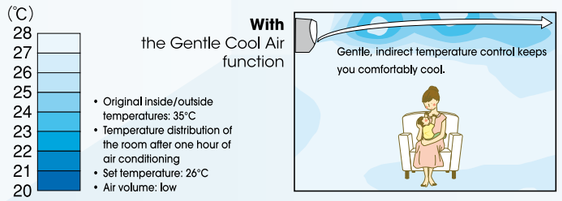
The Gentle Cool Air mode sends cool air towards the ceiling instead of down towards the ground where children, expectant mothers, the elderly, or others that are susceptible to the effects of overly cold temperatures may be sitting. It also makes it easier to get a good night's rest in rooms with air conditioning installed, as the soft flow of air gently soothes you to sleep, without waking you up in the middle of the night.

THE SECRET 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 directing 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 renowned worldwide aerodynamicist H. M. Coanda, born in Romania in 1885.



With the Gentle Cool Air function

Without the Gentle Cool Air function