SHARP

Air Conditioners 2005

UEFA CHAMPIONS LEAGUE

SHARP

OFFICIAL SUPPLIER

ion Plasmacluster™

be sharp

Raise your living space quality to a higher level

New Plasmacluster Ion is Even More Powerful!

*Plasmacluster is a trademark of Sharp Corporation.

Plasmacluster Ion generator

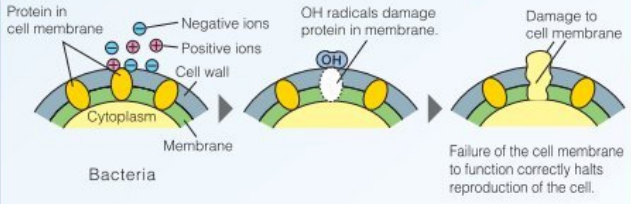
Sharp's technology invented the Plasmacluster Ion system that is effective against mold, viruses, allergens and odours in the air. The new Plasmacluster Ion has an enhanced generator that produces significantly more ⊕ and ⊖ ions in an ideal balance. This is sure to raise the level of cleanness and comfort!

* Applicable to AY-XP7FR, AY-XP9FR, AY-XP12FR, AY-AP7FHR, AY-AP9FHR, AY-AP12FHR and CV-P09FR.

Mechanism of the Effects of Plasmacluster Ions Against Bacteria Explained!

Since 2002, Sharp has been working with Professor Gerhard Artmann of the Department of Cell Biophysics and Bioengineering of Aachen University of Applied Sciences in Germany. Professor Artmann is one of the world's leading authorities in the field of cellular engineering. His joint research with Sharp has shed light on the mechanism of effects of Plasmacluster Ions against bacteria, whereby the membrane of the cell surface is damaged.

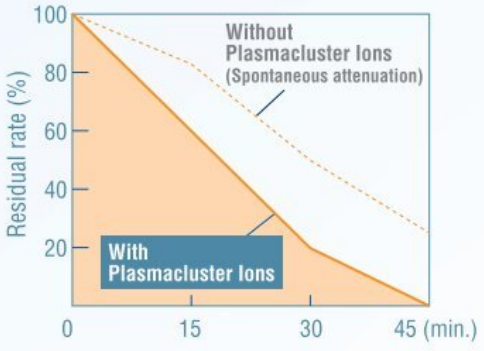
Mechanism of the effects of Plasmacluster Ions against bacteria



■A Plasmacluster Ion generating element was placed in a box with a capacity of 4 liters. After the bacteria had been exposed to the ions for a fixed period of time, the protein of the bacteria was analyzed using electrophoresis.

Effective against Airborne Mold

Effects on Airborne Mold



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

Effective against Airborne Allergens

Schematic Illustration of the Effects of Plasmacluster Ions

Positive and negative cluster ions aggregate on the surface of airborne allergens.

The ions react on the surface of the allergen and are transformed into powerful active substances in the form of hydroxyl radicals (OH).

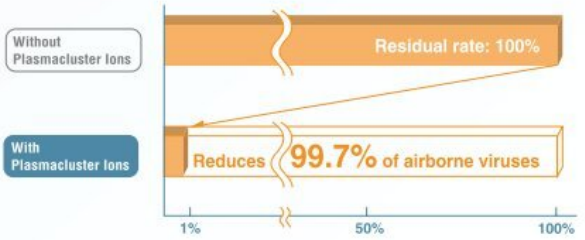
The hydroxyl radicals extract hydrogen atoms from inside the allergen resulting in the destruction of proteins and the formation of water.

* Prevents an allergic reaction from occurring by stopping the allergen (antigen) from combining with the IgE antibody.

■Test method: A Plasmacluster Ion generator is placed in a 1 m³ box. Mite powder is then suspended in the air inside the box followed by the release of Plasmacluster Ions. The action of the allergens in the air is then measured. ■Test performed by the Graduate School of Advanced Sciences of Matter at Hiroshima University in Japan.

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 in the air. ■Test performed by the Kitasato Institute Medical Center Hospital and Kitasato Research Center of Environment Sciences in Japan. ■Test report No.: 00313

with Plasmacluster Ions

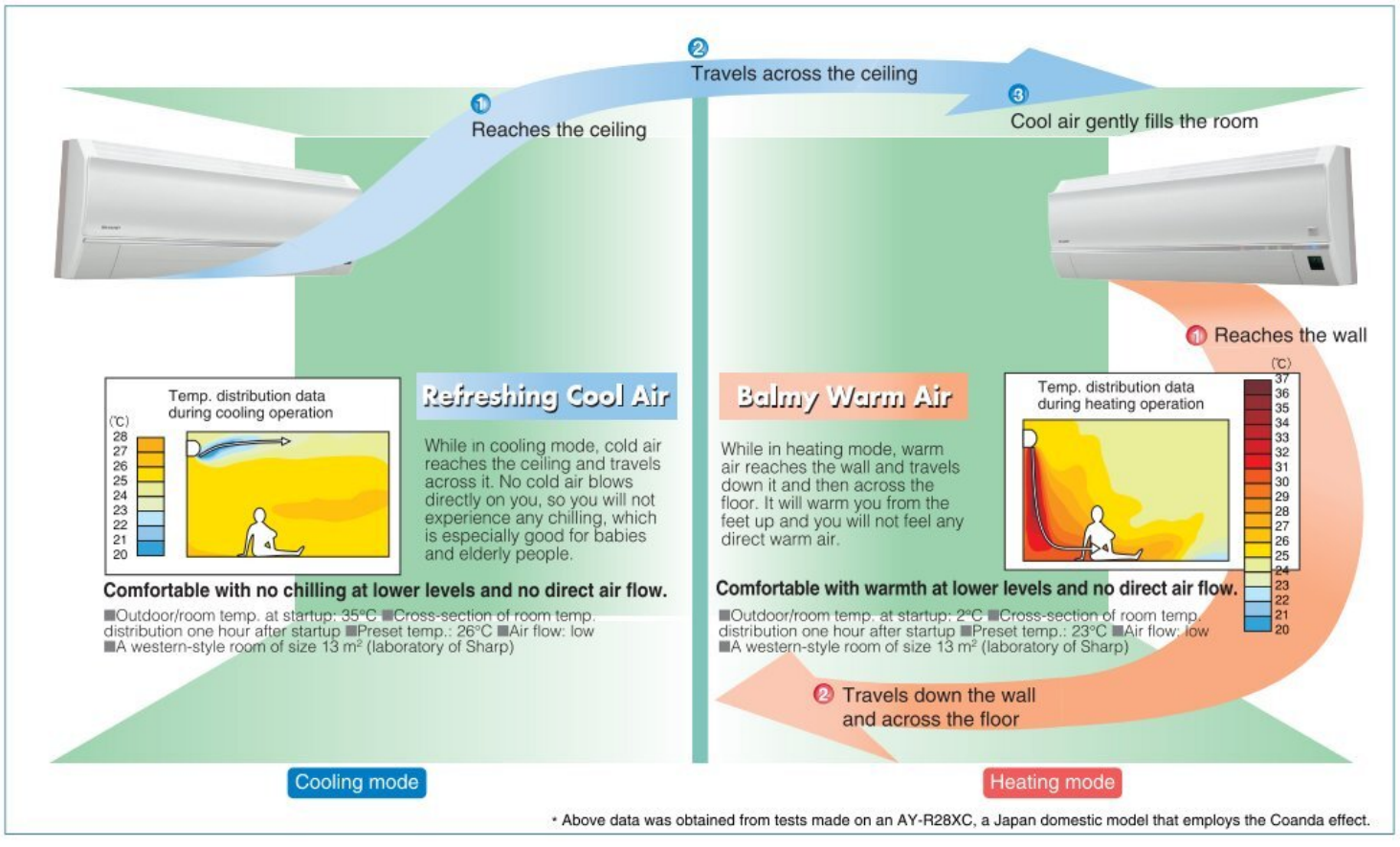
An Air Conditioner Employing the Coanda Effect to Comfortably Cocoon You in Air

Warm or cold air emerging from the air conditioner travels down the wall or along the ceiling (This is known as the Coanda effect). The air expands to fill the space without the blowing of direct air to bother you anymore. Enjoy a gentle and natural heating or cooling environment!

* Applicable to AY-XP7FR, AY-XP9FR and AY-XP12FR.

What is the Coanda effect?

This is the tendency that a moving gas or fluid leaving a nozzle follows a nearby surface even if curved and flows along it to a wide extent.



* Above data was obtained from tests made on an AY-R28XC, a Japan domestic model that employs the Coanda effect.

Technologies that Achieve Industrial Top Class Energy Savings

Sharp's unsurpassed efforts resulted in development of these highly advanced technologies that contribute to drastically reduced energy consumption and return an excellent EER rating that earned the energy label A*.

*Energy label used in EU countries.
*AY-XP7/9/12FR, AY-AP7/9/12FHR and GS-XP07/09/12/18/24 FR models earned energy label A.

Split Type

New Energy Efficient Inverter Split Type — AY-XP7/9/12FR

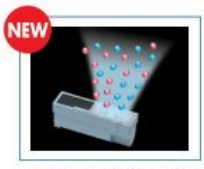
NEW

Eco inverter | HIGH EER | Coanda effect | R410A

Cool/Dry/Heat

Model	Cooling Operation		Heating Operation		
	Capacity (kW) (Min.- Max.)	EER	Capacity (kW) (Min.- Max.)	COP	
AY-XP7FR	2.10 (0.90–2.50)	3.96	2.40 (0.90–3.40)	4.71	R410A
AY-XP9FR	2.64 (0.90–3.00)	3.38	3.10 (0.90–4.80)	4.25	R410A
AY-XP12FR	3.50 (0.90–3.80)	3.21	4.00 (0.90–6.00)	3.88	R410A

NEW



Plasmacluster Ion generator

Model \ Functions	DC COMP	FULL POWER	18c	AUTO RESTART	AUTO SWING	AUTO	24h	1h OFF	Dual Drain	Super	Filter	Quiet
AY-XP7/9/12FR	●	●	●	●	●	●	●	●	●	●	●	●

New Energy Efficient Split Type — AY-AP7/9/12FHR

NEW

HIGH EER | R410A

AY-AP7/9FHR

AY-AP12FHR

Cool/Dry/Heat

Model	Cooling Operation		Heating Operation		
	Capacity (kW)	EER	Capacity (kW)	COP	
AY-AP7FHR	2.05	3.21	2.40	3.61	R410A
AY-AP9FHR	2.64	3.21	3.10	3.61	R410A
AY-AP12FHR	3.50	3.21	4.00	3.64	R410A

NEW

Plasmacluster Ion generator

Model \ Functions	Turbo	18c	AUTO RESTART	AUTO SWING	AUTO	12h	1h OFF	Dual Drain	Super	Filter	Quiet
AY-AP7/9/12FHR	●	●	●	●	●	●	●	●	●	●	●

Plasmacluster Ion Split Type — AY-AP18/24DR

R410A

Cool/Dry/Heat

Model	Cooling Operation		Heating Operation		
	Capacity (kW)	EER	Capacity (kW)	COP	
AY-AP18DR	5.20	2.51	5.50	2.97	R410A
AY-AP24DR	6.70	2.49	8.10	2.87	R410A

Model \ Functions	18c	AUTO RESTART	AUTO SWING	AUTO	12h	1h OFF	Quiet	Filter
AY-AP18/24DR	●	●	●	●	●	●	●	●

Split Type

Plasmacluster Ion Split Type — AH-AP18/24DR

R410A

Cool/Dry

Model	Cooling Operation		
	Capacity (kW)	EER	
AH-AP18DR	5.20	2.51	R410A
AH-AP24DR	6.70	2.49	R410A

AU-A18DR
AU-A24DR

Model \ Functions	18c			AUTO RESTART	AUTO SWING	AUTO			12h	1h OFF			Quiet	Filter	
AH-AP18/24DR	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

New Inverter Floor/Ceiling Type — GS-XP07/09/12FR, GS-XP18/24/27FR

NEW

Eco inverter

HIGH EER

R410A

Cool/Dry/Heat

Model	Cooling Operation		Heating Operation		
	Capacity (kW) (Min.- Max.)	EER	Capacity (kW) (Min.- Max.)	COP	
GS-XP07FR	2.10 (0.90–2.90)	3.75	2.40 (0.90–3.80)	4.71	R410A
GS-XP09FR	2.64 (0.90–3.40)	3.38	3.10 (0.90–4.50)	4.25	R410A
GS-XP12FR	3.50 (0.90–4.00)	3.21	4.00 (0.90–5.80)	3.88	R410A

AE-X7FR
AE-X9FR
AE-X12FR

Model \ Functions	INVERTER	DC COMP	FULL POWER	18c			AUTO RESTART	Cool/Heat	AUTO SWING	AUTO			24h	1h OFF			Dual Drain	Super	Filter	
GS-XP07/09/12FR	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

NEW

Eco inverter

HIGH EER

R410A

Cool/Dry/Heat

Model	Cooling Operation		Heating Operation		
	Capacity (kW) (Min.- Max.)	EER	Capacity (kW) (Min.- Max.)	COP	
GS-XP18FR	5.00 (1.70–6.10)	3.21	6.20 (1.70–7.50)	3.65	R410A
GS-XP24FR	7.00 (2.40–8.00)	3.21	8.00 (2.80–9.00)	3.62	R410A
GS-XP27FR	8.00 (2.40–8.50)	2.61	9.00 (2.80–10.00)	3.42	R410A

GU-XR18FR
GU-XR24FR
GU-XR27FR

Model \ Functions	INVERTER	DC COMP	Twin Rotary	FULL POWER	18c			AUTO RESTART	Cool/Heat	AUTO SWING	AUTO			24h	1h OFF			Dual Drain	Quiet	Filter	
GS-XP18/24/27FR	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Multi Type

You can combine 12 types of indoor units.

(Wall-mounted type)	AY-XM7CR	AY-XPM7CR	AY-XPM7FR	(Floor ceiling type)	GS-XPM7FR
	AY-XM9CR	AY-XPM9CR	AY-XPM9FR		GS-XPM9FR
	AY-XM12CR	AY-XPM12CR	AY-XPM12FR		GS-XPM12FR

7: AY-XM7CR/XPM7CR, AY-XPM7FR, GS-XPM7FR
9: AY-XM9CR/XPM9CR, AY-XPM9FR, GS-XPM9FR
12: AY-XM12CR/XPM12CR, AY-XPM12FR, GS-XPM12FR

New Refrigerant Eco Inverter Multi Type — AE-XM18/24/30FR

NEW · Eco inverter · HIGH EER · R410A

Outdoor unit: System 2

AE-XM18FR

Indoor units (2 units)

AY-X(P)M7CR
AY-X(P)M9CR
AY-X(P)M12CR

AY-XPM7FR
AY-XPM9FR
AY-XPM12FR

GS-XPM7FR
GS-XPM9FR
GS-XPM12FR

You can choose any combination of 2 indoor units from those shown on the right. See Capacity Table on back page for permissible combinations.

Cool/Dry/Heat

Example combinations of indoor units

AE-XM18FR

Model	Cooling Operation		Heating Operation	
	Capacity (kW) (Min.-Max.)	EER	Capacity (kW) (Min.-Max.)	COP
12 + 7	5.40 (1.40–7.10)	3.31*1	6.40 (1.40–8.30)	3.38*1
9 + 9	5.20 (1.40–5.60)		5.80 (1.40–8.10)	
9 + 7	4.60 (1.40–5.50)		5.60 (1.40–8.10)	

*1 Representative connection (9 + 9)

For AY-X(P)M7/9/12CR

For AY-XPM7/9/12FR

For GS-XPM7/9/12FR

NEW · Eco inverter · HIGH EER · R410A

Outdoor unit: System 3

AE-XM24FR

Indoor units (3 units)

AY-X(P)M7CR
AY-X(P)M9CR
AY-X(P)M12CR

AY-XPM7FR
AY-XPM9FR
AY-XPM12FR

GS-XPM7FR
GS-XPM9FR
GS-XPM12FR

You can choose any combination of 3 indoor units from those shown on the right. See Capacity Table on back page for permissible combinations.

Cool/Dry/Heat

Example combinations of indoor units

AE-XM24FR

Model	Cooling Operation		Heating Operation	
	Capacity (kW) (Min.-Max.)	EER	Capacity (kW) (Min.-Max.)	COP
12 + 7 + 7	7.00 (1.70–7.30)	2.88*2	7.80 (1.70–8.20)	3.15*2
9 + 9 + 7	7.00 (1.70–7.30)		7.80 (1.70–8.20)	
9 + 7 + 7	6.90 (1.70–7.30)		7.80 (1.70–8.20)	

*2 Representative connection (9 + 9 + 7)

For AY-X(P)M7/9/12CR

For AY-XPM7/9/12FR

For GS-XPM7/9/12FR

NEW · Eco inverter · HIGH EER · R410A

Outdoor unit: System 4

AE-XM30FR

Indoor units (4 units)

AY-X(P)M7CR
AY-X(P)M9CR
AY-X(P)M12CR

AY-XPM7FR
AY-XPM9FR
AY-XPM12FR

GS-XPM7FR
GS-XPM9FR
GS-XPM12FR

You can choose any combination of 4 indoor units from those shown on the right. See Capacity Table on back page for permissible combinations.

Cool/Dry/Heat

Example combinations of indoor units

AE-XM30FR

Model	Cooling Operation		Heating Operation	
	Capacity (kW) (Min.-Max.)	EER	Capacity (kW) (Min.-Max.)	COP
12 + 7 + 7 + 7	8.40 (4.30–9.00)	2.81*3	9.00 (4.40–10.60)	3.75*3
9 + 9 + 7 + 7	8.40 (4.30–9.00)		9.00 (4.40–10.60)	
9 + 7 + 7 + 7	8.40 (4.30–9.00)		9.00 (4.40–10.60)	
7 + 7 + 7 + 7	8.00 (4.00–9.00)		8.40 (4.00–9.00)	

*3 Representative connection (9 + 7 + 7 + 7)

For AY-X(P)M7/9/12CR

For AY-XPM7/9/12FR

For GS-XPM7/9/12FR

Model \ Functions	INVERTER	DC COMP	Twin Rotary	FULL POWER	18c			AUTO RESTART		AUTO SWING		AUTO				24h	1h OFF			Dual Drain	Stage	Filter				
AY-X(P)M7/9/12CR	●	●	●	●	●	●	●	●	●*	●	●	●	●	●	●	●	●	●	●	●	●	●*	●*	●	●*	●

*AY-XPM7/9/12CR only

Model \ Functions	INVERTER	DC COMP	Twin Rotary	FULL POWER	18c			AUTO RESTART	AUTO SWING			AUTO				24h	1h OFF			Dual Drain	Stage	Filter				
AY-XPM7/9/12FR	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Model \ Functions	INVERTER	DC COMP	Twin Rotary	FULL POWER	18c			AUTO RESTART	AUTO SWING			AUTO				24h	1h OFF			Dual Drain	Stage	Filter				
GS-XPM7/9/12FR	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Portable/Air Purifiers

Slim and Compact Portable Air Conditioner — CV-P09FR

NEW

Single duct

R410A

*A duct attachment is necessary to use this product.

Cool/Dry

Model	Cooling Operation	
	Cooling Capacity (kW)	EER
CV-P09FR	2.12	2.41

(Standard: EN 14511)

NEW

Plasmacluster Ion generator

Main Features

- Turbo Cool Function: Powerful Airflow 8 m³/min
- Industrial Top Class Quietness: 36 dB (low mode)
- Incorporates Plasmacluster Ion Technology
- Automatic Swinging Louvers
- Effective Dehumidification System: 28 L/day
- LCD Wireless Remote Control for All Operation
- 12-hour ON/OFF Timer and 1-hour Quick Set Timer
- Exhaust Only Mode

Air Purifiers with the Plasmacluster Ion Technology

Main Features

- New Plasmacluster & Fan Supporting Quick Clean Program Mode (FU-440E/425E only)
- Anti-bacterial HEPA Filter (Apatite: FU-60SE/55SE Antimicrobial: FU-440E/425E)
- Noise-free, Energy Efficient Inverter Operation

Applicable floor area* Max. 46 m²

FU-60SE

Applicable floor area* Max. 42 m²

FU-55SE

Applicable floor area* Max. 31 m²

FU-440E

Applicable floor area* Max. 20 m²

FU-425E

Specifications

Model			FU60SE	FU-55SE	FU-440E	FU-425E
Air purifying system			Plasmacluster & Fan	Plasmacluster & Fan	NEW Plasmacluster & Fan	NEW Plasmacluster & Fan
Airflow volume		m³/h	360/197/95/43	330/197/95/43	240/120/30	150/60/30
Filter	Dust		Pre-Filter & HEPA	Pre-Filter & HEPA	Pre-Filter & HEPA	HEPA
	Odour		Active Carbon	Active Carbon	Washable Active Carbon	Washable Active Carbon
	Anti-bacteria		Apatite	Apatite	Antimicrobial	Antimicrobial
Off timer		hours	1/4/8	1/4/8	1/4/8	1/4/8
Dimensions (W × H × D)		mm	415 × 572 × 238	415 × 572 × 238	415 × 585 × 200	410 × 445 × 160
Net weight (approx.)		kg	9.3	9.3	6.7	4.5
Optional filter			FZ-60SEF	FZ-60SEF	FZ-440SEF	FZ-425SEF

Functions/Third-party Verifications

Functions

Units are packed with a wide range of functions and offer extensive operation modes and features that can be easily controlled for your comfort and convenience.

Operation

- Inverter Controlled Operation
- DC Digital Control Compressor
- Twin Rotary Compressor
- Full Power Mode
- Turbo Operation
- Lower Room Temperature Setting (from 18˚C)
- Computerised Dry Mode Operation
- Auto Operation Mode
- Auto Restart Function
- Auto Changeover
- Auto Ion Control

Fan Speed

- Auto & 3-Step Fan Speed Settings

Control Convenience

- Microcomputer Control
- LCD Wireless Remote Control
- 24-Hour ON/OFF Programmable Timer
- 12-Hour ON/OFF Timer
- 1-Hour OFF Timer
- "Awakening" Function
- "Auto Sleep" Function

Additional Features

- Super Quiet Operation
- Quiet Operation
- Anti-Mold Filter
- Air Purifying Filter
- Deodourising Filter
- Detachable & Washable Front Panel & Air Filter
- Detachable & Washable Air Filter
- Self Cleaning Function
- Easy Cleaning

Airflow

- Auto Swing Louver
- Coanda Airflow System

Easy Installation

- Dual Drain Setting

* EER: Energy Efficiency Ratio
* Specifications are subject to change without prior notice due to product development.

Third-party Verifications for Plasmacluster Ion Technology

Sharp's Plasmacluster Ion technology has been acclaimed by third parties for its advanced quality. It has received many awards, including the Takagi Award. The effectiveness was validated in the following countries.

Takagi Award from
the Society of Non-Traditional Technology.

Japan

Kitasato Research Center
of Environmental
Sciences

Ishikawa Prefecture
Preventive Medicine
Association

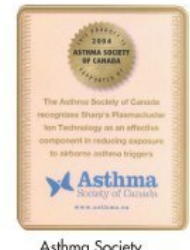
China

Shanghai Municipal
Preventive Medicine
Research Institute

Germany

The University of Lübeck

Canada



Asthma Society
of Canada
(Air purifiers only.)

Specifications

			New Energy Efficient Inverter Split Type			New Energy Efficient Split Type			Plasmacluster Ion Split Type				New Inverter Floor/Ceiling Type						Portable
Model	Indoor		AY-XP7FR	AY-XP9FR	AY-XP12FR	AY-AP7FHR	AY-AP9FHR	AY-AP12FHR	AY-AP18DR	AY-AP24DR	AH-AP18DR	AH-AP24DR	GS-XP07FR	GS-XP09FR	GS-XP12FR	GS-XP18FR	GS-XP24FR	GS-XP27FR	CV-P09FR
	Outdoor		AE-X7FR	AE-X9FR	AE-X12FR	AE-A7FHR	AE-A9FHR	AE-A12FHR	AE-A18DR	AE-A24DR	AU-A18DR	AU-A24DR	AE-X7FR	AE-X9FR	AE-X12FR	GU-XR18FR	GU-XR24FR	GU-XR27FR	–
Capacity *1	Cool (Min. - Max.)	kW	2.10 0.90–2.50	2.64 0.90–3.00	3.50 0.90–3.80	2.05	2.64	3.50	5.20	6.70	5.20	6.70	2.10 0.90–2.90	2.64 0.90–3.40	3.50 0.90–4.00	5.00 1.70–6.10	7.00 2.40–8.00	8.00 2.40–8.50	2.12
	Heat (Min. - Max.)	kW	2.40 0.90–3.40	3.10 0.90–4.80	4.00 0.90–6.00	2.40	3.10	4.00	5.50	8.10	–	–	2.40 0.90–3.80	3.10 0.90–4.50	4.00 0.90–5.80	6.20 1.70–7.50	8.00 2.80–9.00	9.00 2.80–10.00	–
Power supply		V-ph-Hz	220-240-1Ø-50			220-240-1Ø-50			220-240-1Ø-50				220-240-1Ø-50			220-240-1Ø-50			220-230-240-1Ø-50
Running current *1	Cool	A	2.5	3.7	5.0	3.0	3.8	5.0	9.3	12.8	9.3	12.8	2.7	3.6	5.0	7.2	10.0	14.0	4.0
	Heat	A	2.4	3.5	4.8	3.0	3.8	5.0	8.3	13.5	–	–	2.4	3.5	4.7	7.8	10.1	12.1	–
Power input *1	Cool (Min. - Max.)	W	530 200–760	780 200–960	1,090 210–1,300	635	820	1,090	2,070	2,690	2,070	2,690	560 230–760	780 230–960	1,090 230–1,300	1,560 370–2,650	2,180 630–3,120	3,060 630–3,750	880
	Heat (Min. - Max.)	W	510 160–1,100	730 160–1,400	1,030 180–1,900	660	855	1,100	1,850	2,820	–	–	510 250–860	730 250–1,120	1,030 250–1,560	1,700 370–2,200	2,210 730–2,800	2,630 730–3,400	–
EER *1	Cool		3.96	3.38	3.21	3.21	3.21	3.21	2.51	2.49	2.51	2.49	3.75	3.38	3.21	3.21	3.21	2.61	2.41
COP *1	Heat		4.71	4.25	3.88	3.61	3.61	3.64	2.97	2.87	–	–	4.71	4.25	3.88	3.65	3.62	3.42	–
Energy efficiency class *1	Cool		A	A	A	A	A	A	E	E	E	E	A	A	A	A	A	D	B
	Annual Energy Consumption	kWh	265	390	545	318	410	545	1,035	1,345	1,035	1,345	280	390	545	780	1,090	1,530	440
	Heat		A	A	A	A	A	A	D	D	–	–	A	A	A	A	A	B	–
Sound pressure level (Cool) *2	Indoor (Hi/Lo)	dB(A)	37/28	39/28	40/29	37/28	38/28	40/29	41/34	45/37	41/34	45/37	37/28	39/28	41/29	43/34	46/34	47/34	46/36
	Outdoor	dB(A)	45	45	48	44	45	48	52	54	52	54	45	45	48	54	55	56	–
Sound power level (Cool)	Indoor (Hi)	dB	48	50	52	51	52	53	53	58	53	58	47	49	51	54	57	57	62
	Outdoor	dB	56	56	59	58	59	60	66	67	66	67	55	56	57	65	67	67	–
Airflow volume	Indoor (Hi, Cool)	m³/min.	8.0	8.6	9.8	7.5	7.5	10.2	15.7	18.3	15.7	18.3	11.0	11.0	12.0	17.0	19.0	20.0	8 (Max)
Dimensions	Indoor W	mm	790	790	790	810	810	790	1,040	1,040	1,040	1,040	1,025	1,025	1,025	1,300	1,300	1,300	470
	Indoor H	mm	278	278	278	270	270	278	325	325	325	325	680	680	680	680	680	680	820
	Indoor D	mm	198	198	198	184	184	198	220	220	220	220	212	212	212	212	212	212	383
	Outdoor W	mm	730	730	730	730	730	730	890	890	890	890	730	730	730	890	890	890	–
	Outdoor H	mm	540	540	540	540	540	540	645	645	645	645	540	540	540	800	800	800	–
	Outdoor D	mm	250	250	250	250	250	250	327	327	327	327	250	250	250	320	320	320	–
Net weight	Indoor	kg	10	10	10	9	9	10	16	16	16	16	31	31	31	34	36	36	36
	Outdoor	kg	33	33	37	25	29	37	54	61	51	60	33	33	37	57	65	65	–
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	1/4	1/4	1/4	1/4	3/8	3/8	–
	Gas side	inch	3/8	3/8	3/8	3/8	3/8	1/2	1/2	1/2	1/2	1/2	3/8	3/8	3/8	1/2	5/8	5/8	–
Refrigerant			R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A

New Refrigerant Eco Inverter Multi Type

System			2-indoor operation	3-indoor operation	4-indoor operation
Model	Indoor (Representative connection)*3		9 + 9	9 + 9 + 7	9 + 7 + 7 + 7
	Outdoor		AE-XM18FR	AE-XM24FR	AE-XM30FR
Capacity *1	Cool (Min. - Max.)	kW	5.20 1.40–5.60	7.00 1.70–7.30	8.40 4.30–9.00
	Heat (Min. - Max.)	kW	5.80 1.40–8.10	7.80 1.70–8.20	9.00 4.40–10.60
Power supply		V-ph-Hz	230-1Ø-50	230-1Ø-50	230-1Ø-50
Running current *1	Cool	A	6.8 (2.6–7.9)	10.7 (3.1–12.2)	13.7 (4.9–16.0)
	Heat	A	7.8 (2.6–12.0)	10.9 (3.0–11.9)	11.0 (4.3–14.0)
Power input *1	Cool (Min. - Max.)	W	1,570 590–1,800	2,430 700–2,775	2,990 1,070–3,490
	Heat (Min. - Max.)	W	1,715 595–2,740	2,475 685–2,710	2,400 940–3,060
EER *1	Cool		3.31	2.88	2.81
COP *1	Heat		3.38	3.15	3.75
Energy efficiency class *1	Cool		A	C	C
	Annual Energy Consumption	kWh	785	1,215	1,495
	Heat		C	D	A
Sound pressure level*2 (Cool) (Outdoor)		dB (A)	56	56	57
Sound power level (Cool) (Outdoor)		dB	67	67	68
Dimensions (Outdoor)	W	mm	940	940	890
	H	mm	645	645	800
	D	mm	327	327	320
Net weight (Outdoor)		kg	56	56	70
Pipe diameter	Liquid side	inch	1/4	1/4	1/4
	Gas side	inch	3/8	3/8	3/8
Maximum length (per unit)		m	20	20	20
Maximum length (total)		m	30	40	50
Maximum chargeless length		m	30	40	50
Maximum height difference		m	10	10	10
Drain joint		mm	O.D. Ø 18	O.D. Ø 18	O.D. Ø 18
Refrigerant			R410A	R410A	R410A

Model (Indoor)			AY-XPM7/9/12CR, AY-XM7/9/12CR	AY-XPM7/9/12FR	GS-XPM7/9/12FR
Sound pressure level *2 (Cool) (Indoor)	(Hi/Lo)	dB (A)	7CR: 34/27, 9CR: 38/29, 12CR: 39/30	7FR: 37/28, 9FR: 39/28, 12FR: 40/29	7FR: 34/27, 9FR: 38/29, 12FR: 39/30
Sound power level (Cool) (Indoor)	(Hi)	dB	7CR: 45, 9CR: 49, 12CR: 49	7FR: 48, 9FR: 50, 12FR: 52	7FR: 45, 9FR: 49, 12FR: 49
Airflow volume (Cool) (Indoor)	(Hi)	m³/min.	7CR: 7.4, 9CR: 8.6, 12CR: 10.4	7FR: 8.0, 9FR: 8.6, 12FR: 9.8	7FR: 7.5, 9FR: 8.7, 12FR: 10.4
Dimensions (Indoor)	W	mm	815	790	1,025
	H	mm	278	278	680
	D	mm	198	198	212
Net weight (Indoor)		kg	9	10	31

*1 Standard: EN 14511; 230V, 50 Hz
*2 Sound pressure level is measured according to JIS C 9612.
*3 7: AY-XM7CR/XPM7CR, AY-XPM7FR, GS-XPM7FR, 9: AY-XM9CR/XPM9CR, AY-XPM9FR, GS-XPM9FR

* Design and specifications are current as of March 2005, but are subject to change without prior notice.
* Actual colours may differ slightly from colours in this catalogue.

Capacity Table

Performance of New Refrigerant Eco Inverter Multi Type Capacity Table

Recommended combination

7 : AY-XM7CR/XPM7CR, AY-XPM7FR, GS-XPM7FR
9 : AY-XM9CR/XPM9CR, AY-XPM9FR, GS-XPM9FR
12: AY-XM12CR/XPM12CR, AY-XPM12FR, GS-XPM12FR

4-indoor units with AE-XM30FR<Tentative>

Operating status	Combination of indoor units				Total capacity (kW) Rating (Min.–Max.)		Power consumption (W) Rating (Min.–Max.)	
	A	B	C	D	Cool	Heat	Cool	Heat
4-indoor	12	12	7	7	8.40 (4.30–9.00)	9.00 (4.40–10.60)	2,990 (1,070–3,490)	2,400 (940–3,060)
	12	9	9	7	8.40 (4.30–9.00)	9.00 (4.40–10.60)	2,990 (1,070–3,490)	2,400 (940–3,060)
	12	9	7	7	8.40 (4.30–9.00)	9.00 (4.40–10.60)	2,990 (1,070–3,490)	2,400 (940–3,060)
	12	7	7	7	8.40 (4.30–9.00)	9.00 (4.40–10.60)	2,990 (1,070–3,490)	2,400 (940–3,060)
	9	9	9	9	8.40 (4.30–9.00)	9.00 (4.40–10.60)	2,990 (1,070–3,490)	2,400 (940–3,060)
	9	9	9	7	8.40 (4.30–9.00)	9.00 (4.40–10.60)	2,990 (1,070–3,490)	2,400 (940–3,060)
	9	9	7	7	8.40 (4.30–9.00)	9.00 (4.40–10.60)	2,990 (1,070–3,490)	2,400 (940–3,060)
	9	7	7	7	8.40 (4.30–9.00)	9.00 (4.40–10.60)	2,990 (1,070–3,490)	2,400 (940–3,060)
	7	7	7	7	8.00 (4.00–9.00)	8.40 (4.00–9.00)	2,860 (1,000–3,490)	2,350 (850–2,500)
3-indoor	12	12	7	✶	8.00 (3.80–8.50)	9.00 (4.30–10.00)	2,990 (950–3,300)	2,700 (950–3,150)
	12	9	9	✶	8.00 (3.80–8.50)	9.00 (4.30–10.00)	2,990 (950–3,300)	2,700 (950–3,150)
	12	9	7	✶	8.00 (3.80–8.50)	8.80 (3.90–10.00)	2,990 (950–3,300)	2,600 (850–3,150)
	12	7	7	✶	7.40 (3.40–8.50)	8.50 (3.50–10.00)	2,600 (930–3,300)	2,650 (900–3,150)
	9	9	9	✶	7.80 (3.50–8.50)	8.70 (3.70–10.00)	2,800 (940–3,300)	2,680 (950–3,150)
	9	9	7	✶	7.20 (3.30–8.50)	8.30 (3.40–10.00)	2,500 (900–3,300)	2,500 (830–3,150)
	9	7	7	✶	6.60 (3.10–8.50)	7.90 (3.00–10.00)	2,180 (820–3,300)	2,300 (750–3,150)
	7	7	7	✶	6.00 (2.80–8.00)	7.20 (2.80–9.80)	1,930 (760–3,200)	1,950 (700–3,100)
2-indoor	12	12	✶	✶	6.80 (3.30–7.10)	6.80 (3.20–8.00)	2,250 (850–3,300)	2,200 (900–2,900)
	12	9	✶	✶	6.00 (2.90–7.00)	6.60 (2.70–8.00)	2,000 (750–3,200)	2,100 (800–2,900)
	12	7	✶	✶	5.40 (2.60–6.80)	6.10 (2.70–8.00)	1,720 (680–2,770)	1,900 (750–2,900)
	9	9	✶	✶	5.20 (2.60–6.30)	5.80 (2.40–8.00)	1,630 (680–2,600)	1,850 (700–2,900)
	9	7	✶	✶	4.60 (2.60–5.90)	5.30 (2.40–7.30)	1,420 (680–2,250)	1,550 (700–2,400)
	7	7	✶	✶	4.00 (2.60–5.30)	4.80 (2.40–6.40)	1,180 (680–1,900)	1,380 (700–2,050)
1-indoor	12	✶	✶	✶	3.40 (1.80–4.00)	3.80 (1.80–5.20)	1,100 (650–1,600)	1,200 (750–1,950)
	9	✶	✶	✶	2.60 (1.80–3.30)	2.90 (1.80–4.00)	880 (650–1,150)	950 (750–1,400)
	7	✶	✶	✶	2.00 (1.80–2.70)	2.40 (1.80–3.40)	750 (650–900)	850 (750–1,050)

3-indoor units with AE-XM24FR

Operating status	Combination of indoor units			Total capacity (kW) Rating (Min.–Max.)		Power consumption (W) Rating (Min.–Max.)	
	A	B	C	Cool	Heat	Cool	Heat
3-indoor	12	9	9	7.00 (1.70–7.30)	7.80 (1.70–8.20)	2,430 (700–2,775)	2,475 (685–2,710)
	12	9	7	7.00 (1.70–7.30)	7.80 (1.70–8.20)	2,430 (700–2,775)	2,475 (685–2,710)
	12	7	7	7.00 (1.70–7.30)	7.80 (1.70–8.20)	2,430 (700–2,775)	2,475 (685–2,710)
	9	9	9	7.00 (1.70–7.30)	7.80 (1.70–8.20)	2,430 (700–2,775)	2,475 (685–2,710)
	9	9	7	7.00 (1.70–7.30)	7.80 (1.70–8.20)	2,430 (700–2,775)	2,475 (685–2,710)
	9	7	7	6.90 (1.70–7.30)	7.80 (1.70–8.20)	2,400 (700–2,775)	2,475 (685–2,710)
	7	7	7	6.10 (1.70–7.30)	7.10 (1.70–8.20)	1,920 (700–2,775)	2,050 (685–2,710)
2-indoor	12	9	✶	6.00 (1.40–7.10)	6.70 (1.40–8.10)	2,065 (590–2,635)	2,070 (580–2,890)
	12	7	✶	5.40 (1.40–7.10)	6.00 (1.40–7.80)	1,670 (590–2,635)	1,760 (580–2,700)
	9	9	✶	5.20 (1.40–5.60)	5.80 (1.40–7.20)	1,570 (590–1,800)	1,665 (580–2,580)
	9	7	✶	4.60 (1.40–5.50)	5.30 (1.40–7.20)	1,340 (590–1,670)	1,440 (580–2,580)
	7	7	✶	4.00 (1.40–5.20)	4.80 (1.40–6.40)	1,180 (590–1,545)	1,150 (580–1,910)
1-indoor	12	✶	✶	3.40 (1.10–4.00)	3.80 (1.10–5.20)	1,045 (500–1,480)	1,355 (515–2,305)
	9	✶	✶	2.60 (1.10–3.30)	2.90 (1.10–4.00)	770 (470–1,095)	1,070 (520–1,735)
	7	✶	✶	2.00 (1.10–2.70)	2.40 (1.10–3.40)	675 (440–895)	910 (540–1,385)

2-indoor units with AE-XM18FR

Operating status	Combination of indoor units		Total capacity (kW) Rating (Min.–Max.)		Power consumption (W) Rating (Min.–Max)	
	A	B	Cool	Heat	Cool	Heat
2-indoor	12	7	5.40 (1.40–7.10)	6.40 (1.40–8.30)	1,670 (590–2,635)	1,885 (595–2,865)
	9	9	5.20 (1.40–5.60)	5.80 (1.40–8.10)	1,570 (590–1,800)	1,715 (595–2,740)
	9	7	4.60 (1.40–5.50)	5.60 (1.40–8.10)	1,340 (590–1,670)	1,535 (595–2,740)
	7	7	4.00 (1.40–5.20)	4.90 (1.40–6.90)	1,180 (590–1,545)	1,225 (595–2,040)
1-indoor	12	✶	3.40 (1.10–4.00)	4.30 (1.10–5.20)	1,045 (500–1,480)	1,435 (540–2,330)
	9	✶	2.60 (1.10–3.30)	3.40 (1.10–4.00)	770 (470–1,095)	1,155 (570–1,775)
	7	✶	2.00 (1.10–2.70)	3.00 (1.10–3.40)	675 (440–895)	975 (590–1,455)

✶Connected but not operated

Rating Conditions (Except portable air conditioners)
Inside Air Temperature: 27°C D.B. 19°C W.B. (Cooling) 20°C D.B. (Heating)
Outside Air Temperature: 35°C D.B. 24°C W.B. (Cooling) 7°C D.B. 6°C W.B. (Heating)

Rating Conditions (Portable air conditioners)
Inside Air Temperature: 35°C D.B. 24°C W.B. (Cooling)
Outside Air Temperature: 35°C D.B. 24°C W.B. (Cooling)

Ordering Information for Heat Pump Type Air Conditioners
- Heating operation is effected by the heat pump.
- Heating capacity is lowered with a decrease in outdoor temperature.

* Design and specifications are current as of March 2005, but are subject to change without prior notice.
CE Indicates confirmation with CE Directives.

Operating Temperature Range

		INDOOR TEMP.	OUTDOOR TEMP.
COOLING	Upper limit	32°C D.B. 23°C W.B.	43°C D.B. –
	Lower limit	21°C D.B. 15°C W.B.	21°C D.B. –
HEATING	Upper limit	27°C D.B. –	21°C D.B. 15°C W.B.
	Lower limit	20°C D.B. –	-8.5°C D.B. -9.5°C W.B.
COOLING (Portable)	Upper limit	40°C D.B.	–
	Lower limit	18°C D.B.	–

* A built-in protective device might prevent the unit from operating when used out of this range.

D.B. = Dry-bulb W.B. = Wet-bulb

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