

ZEPHYRUS



ISO-9001/14001

ISO-14001

ISO-9001

Direct Fired Mini Absorption Chiller/Heater

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Responding to all air conditioning needs in economy and environment with more satisfactory solution and choice.

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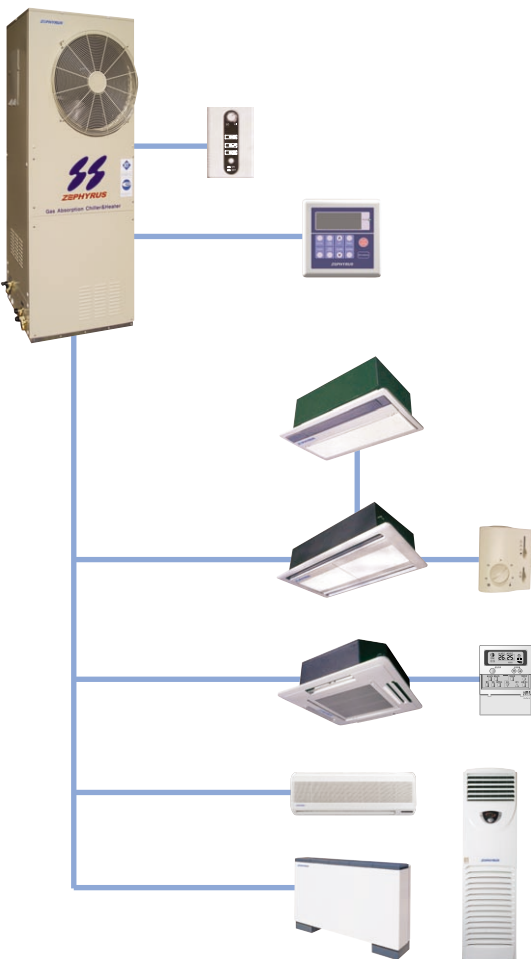
New Concept Air-condition System With High efficiency & Low Operation Cost



- Specially designed for use of natural gas as an energy input.
- Multi system for energy saving and economical air conditioning application.
- Single outdoor unit with maximum 5 indoor units available.
- Widely ranged indoor units to meet any requirements of installation space and place.
- Hot water supply is optionally available in addition to the conventional cooling and heating system.

This system using environment-friendly natural gas is offering new air conditioning levels of energy / space saving, high efficiency and wide variety of application you have been looking for.

Possible to install up to 5 indoor units for comfortable multi zoning with only one Gas Absorption Air Conditioner.



Why Gas Absorption chiller / heater?

Multi system

The maximum 5 indoors units are available with single out door unit for a multi system and each room/space can be air-conditioned by individual operation of each indoor unit.

Hot water supply

Hot water supply is optionally available in addition to conventional cooling and heating system.

Copper coated fin adopted in indoor unit.

The copper coated fin specially designed for anti-bacteria provides a healthier and cleaner air in the room.

Widely ranged indoor units for a variable application.

Satisfying any kinds of your applications in the design, spare and capacity.

Floor Heating (Optional)

The unit provides floor panel heating as well as fan air heating.

A wide range of application

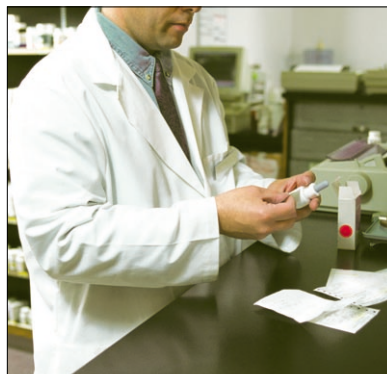
For multi-zone air conditioning and keeping a room temperature automatically at the desired set-point, Hospital and School recommendable.



For the most quiet operation and energy saving required, Residential Apartment and Office recommendable.

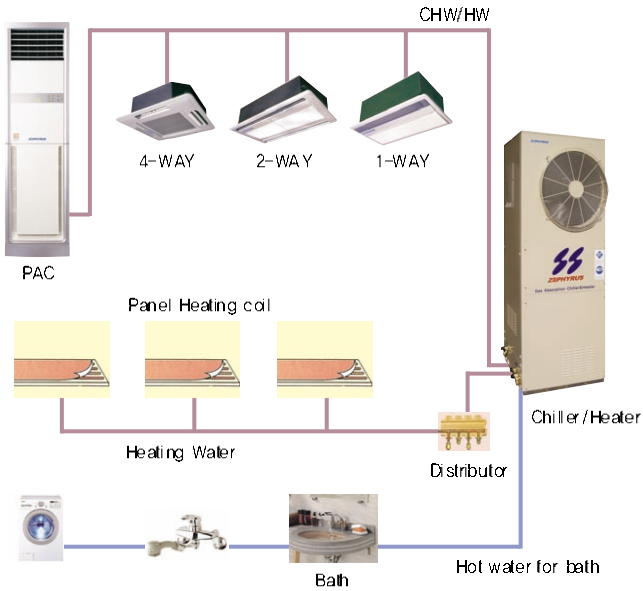


For the most economical operation and keeping a room / space much sanitary, Restaurant and Drugstore recommendable.

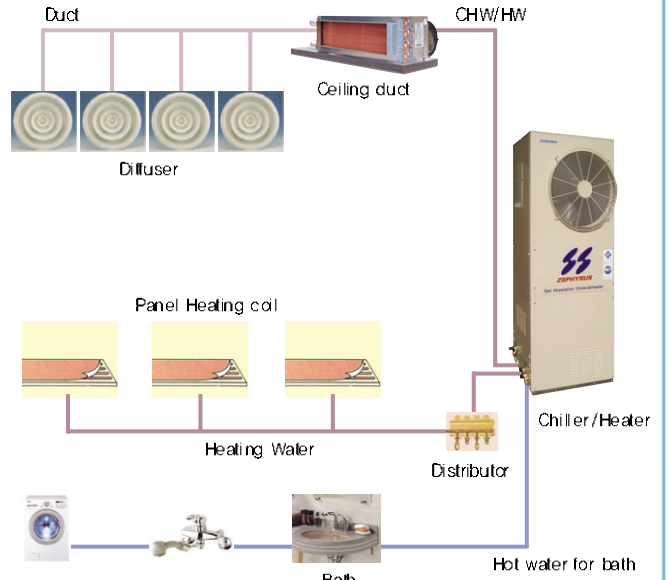


MULTI SYSTEM

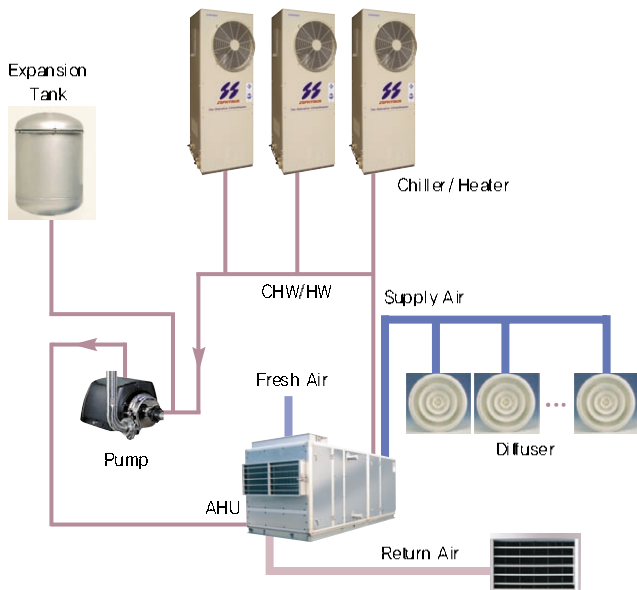
Multi split(FCUs)



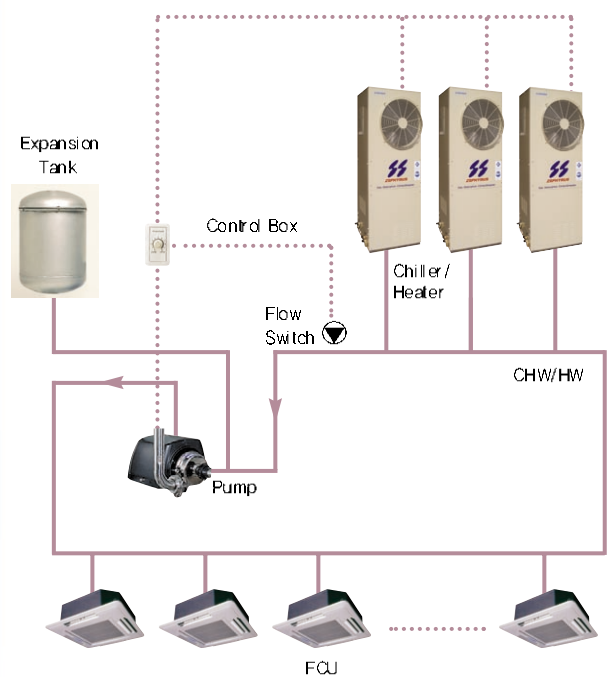
Multi split(Ceiling Duct)



Parallel Connection (AHU & Ducts)

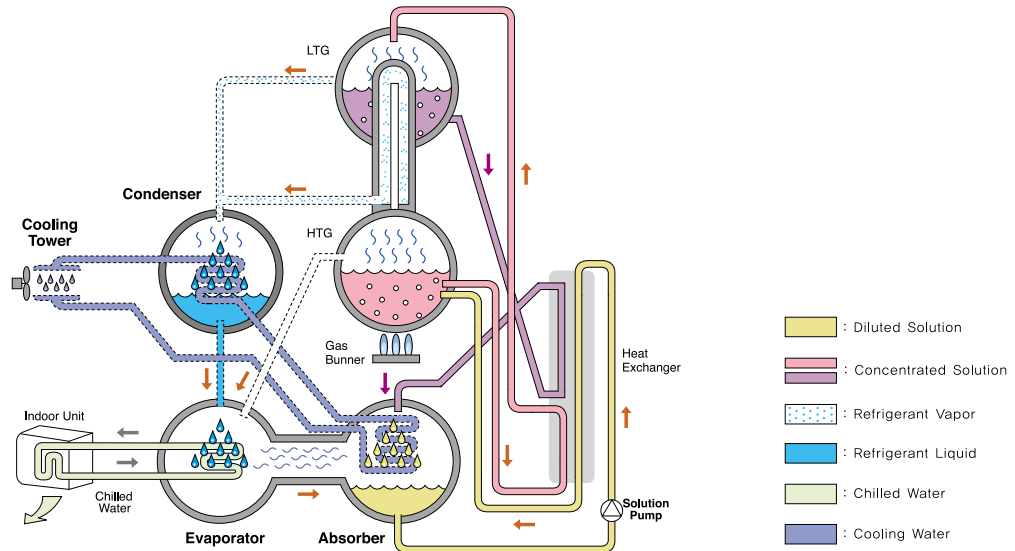


Parallel Connection (FCUs)



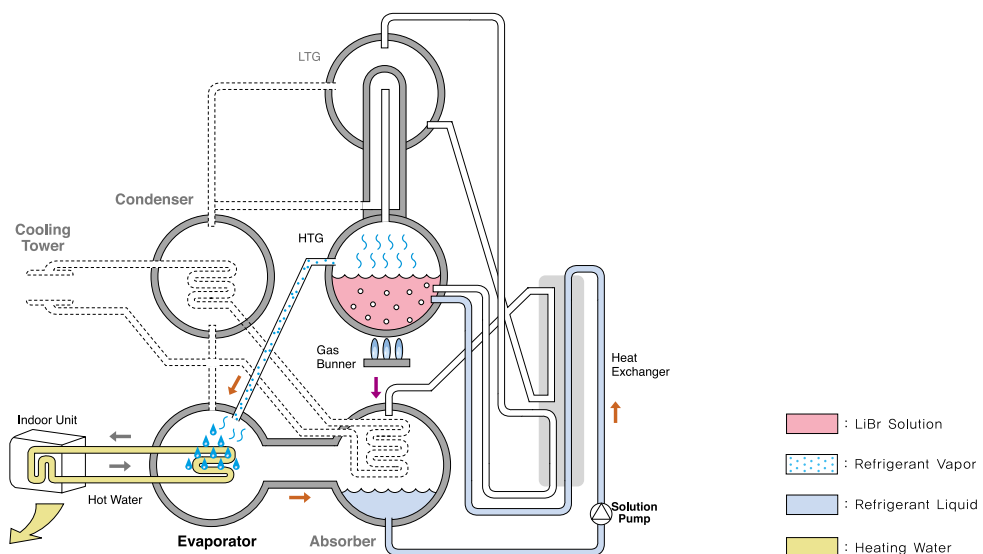
Cooling/Heating Cycle Diagram & Principle

Cooling Cycle



The distilled water as a refrigerant is evaporated at a lower temperature caused by pressure downed (about 7 mmHg in evaporator). Using such principle, the chilled water is forced to flow inside of the coil of the evaporator to be cooled down. Then, the chilled water will be delivered into the fan coil unit to cool the rooms. The evaporated water vapor will diffuse into absorber to be absorbed in concentrated LiBr solution. The diluted solution will be delivered to the generator to be heated by the burner to regenerate water vapor and to become concentrated solution. The concentrated solution will return to the absorber to absorb water vapor from evaporator. While the cooling water will remove heat from absorber & condenser then reject heat in the cooling tower.

Heating Cycle

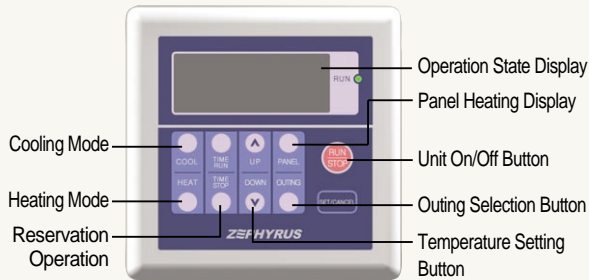


The water vapor generated in the generator will be delivered to evaporator to heat up the hot water flowing inside the evaporator tube. The hot water will be supplied to fan coil unit for heating the room.

Convenient System Controller

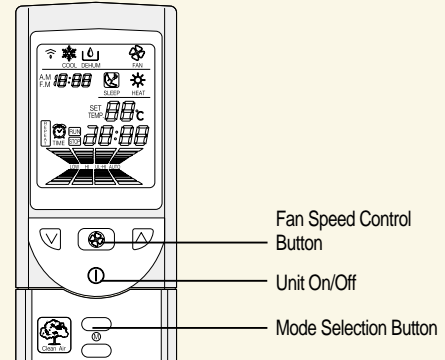
Outdoor Unit Wired Remote Controller

- Outing Mode
- Self-Diagnostic Function
- Reservation Function
- Digital Temperature Setting



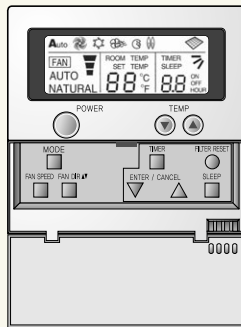
Indoor Unit Remote Controller

- Reservation Function
- Digital Temperature Setting



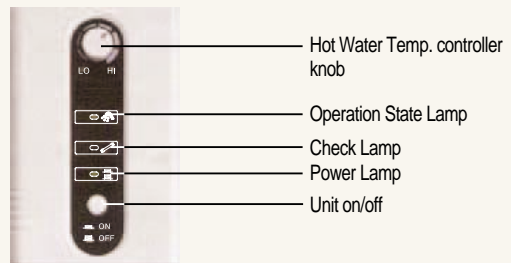
Indoor Unit Wired Remote Controller

- Air flow direction control
- Auto Fan Speed Control
- Reservation Function
- Digital Temperature Setting



Hot Water Wired Remote Controller

- Unit on/off
- Hot water Temperature Setting



Type of remote controller

Type	Applicable Model
Outdoor Unit Wired Remote Controller	GAA-H3.4G2 / C3.4G1
Indoor Unit Wired Remote Controller	FC-A, R, Q TYPE
	FC-D, B TYPE
Indoor Unit Remote Controller	FC-W, V TYPE
	FC-A, R, Q TYPE
Hot Water Wired Remote Controller	GAA-C3.4G1

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Advantages of Indoor units

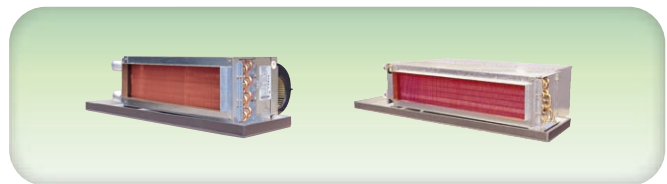
Ceiling Cassette type

- Easy to clean filter
- Slim design for easy installation
- Low sound level with new turbo fan



Ceiling Duct Type

- Maximize the space availability
- Easy to install and maintain.
- Patented copper coated fin to sterilize



Floor standing type / Wall mount type / Slim Package type

- Wide air flow control
- Patented copper coated fin to sterilize
- Super Slit Fin (Wall mount type, Slim Package type)
- Night Mode (Wall mount type, Slim Package type)
- Sophisticated Look



Specification (Outdoor Unit)

Gas Absorption Chiller / heater



3.4RT(Cooling/Heating) / 3.4RT(Cooling/Heating/Hot Water)

Item		Model	GAA-H3.4G2	GAA-C3.4G1
Cooling Capacity	W(kcal/h)		11,900(10,300)	11,900(10,300)
Heating Capacity	W(kcal/h)		18,600(16,000)	18,600(16,000)
Water Heating Capacity for bathing	W(kcal/h)		-	29,070(25,000)
Dimension	Height	mm	1,792	1,792
	Width	mm	700	970
	Depth	mm	575	575
Rigging Weight	kg		230	265
Electric	V-ph-Hz		220 - 1 - 60, 220 - 1 - 50	
Gas	-		LNG	
Gas Consumption rate	Cooling	Nm ³ /h	1.05	1.05
	Heating	Nm ³ /h	1.73	1.73
	Bathing	Nm ³ /h	-	2.84
	Cooling	W	900	900
Power Input	Heating	W	500	500
	Bathing	W	-	70
Chilled Water Inlet / Outlet Temp.	°C(°F)		12.7 / 7 (54.9 / 44.6)	12.7 / 7 (54.9 / 44.6)
Heating Water Inlet / Outlet Temp.	°C(°F)		51.2 / 60 (124.2 / 140)	51.2 / 60 (124.2 / 140)
Hot water Inlet / Outlet Temp. for bathing	°C(°F)		-	10 / 50 (50 / 122)
Chilled / heating water Flow rate	ℓ / h		1,814	1,814
Hot water flow rate for bathing	ℓ / h		-	625
Permissible Chilled / Heating water Head	mAq		10	10
Sound (Normal Operating)	dB		50 or blow	50 or blow
Sound (Starting)	dB		60 or blow	60 or blow

*Note

- Condition for rated Cooling Operation: 35 °C (DB), 10.5 °C(WB)
- Functions : Cooling-Heating Type, Cooling-Heating-Hot Water Type
- Head Limit for Chilled/Heating/Hot Water: 10 mAq (0.10 Mpa)
- Refrigerant: Water + LiBr Solution
- Gas consumption rate is based on the higher heating value 11,000 kcal/Nm³

New Concept Air-Condition System
With High efficiency & Low Operation Cost

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Specification (Indoor Unit)

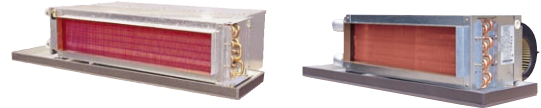


Ceiling Cassette Type (4 Way, 2 Way, 1 Way)

Model		FC-A45	FC-A65	FC-A85	FC-R35	FC-R45	FC-D25	FC-D35	FC-D45	FC-D65	FC-Q15
ITEM		4 Way			2 Way		2 Way				1 Way
Cooling Capacity	W	4,650	6,980	8,140	2,900	3,950	2,090	2,790	4,020	5,470	1,740
	kcal/h	4,000	6,000	7,000	2,500	3,400	1,800	2,400	3,460	4,700	1,500
Heating Capacity	W	6,980	10,460	12,200	4,410	5,810	3,420	4,730	6,680	8,720	3,140
	kcal/h	6,000	9,000	10,500	3,800	5,000	2,940	4,070	5,740	7,500	2,700
Electric	V-ph-Hz	220 - 1 - 60, 220 - 1 - 50									
Power input	W	53	74	78	40	40	67	90	110	177	40
Piping Connection	Chilled / Hot Water	MPF 3/4*					PT 3/4*				MPF 3/4*
	Drain Socket	φ32									
Weight	kg	40	45	45	33	33	20	27	29	37	27
Sound	dB(A)	32~42					-				32~42

※ The drain pump built in for FC-A, FC-R, FC-Q series.

Specification (Indoor Unit)



Ceiling Ducted Type

Model		FC-B25	FC-B35	FC-B45	FC-B65	FC-B85
ITEM		Ceiling Ducted Type				
Cooling Capacity	W	2,090	2,790	4,020	5,470	7,810
	kcal/h	1,800	2,400	3,460	4,700	6,720
Heating Capacity	W	3,420	4,730	6,680	8,720	12,920
	kcal/h	2,940	4,070	5,740	7,500	11,110
Electric	V-ph-Hz	220 - 1 - 60, 220 - 1 - 50				
Power input	W	62	67	120	140	202
Piping Connection	Chilled / Hot Water	inch PT 3/4 *				
	Drain Socket	mm ϕ 32				
Weight	kg	15	16	18	20	28
Sound	dB(A)	37	42	42	42	43



Floor standing type / Wall mount type / Slim Package type

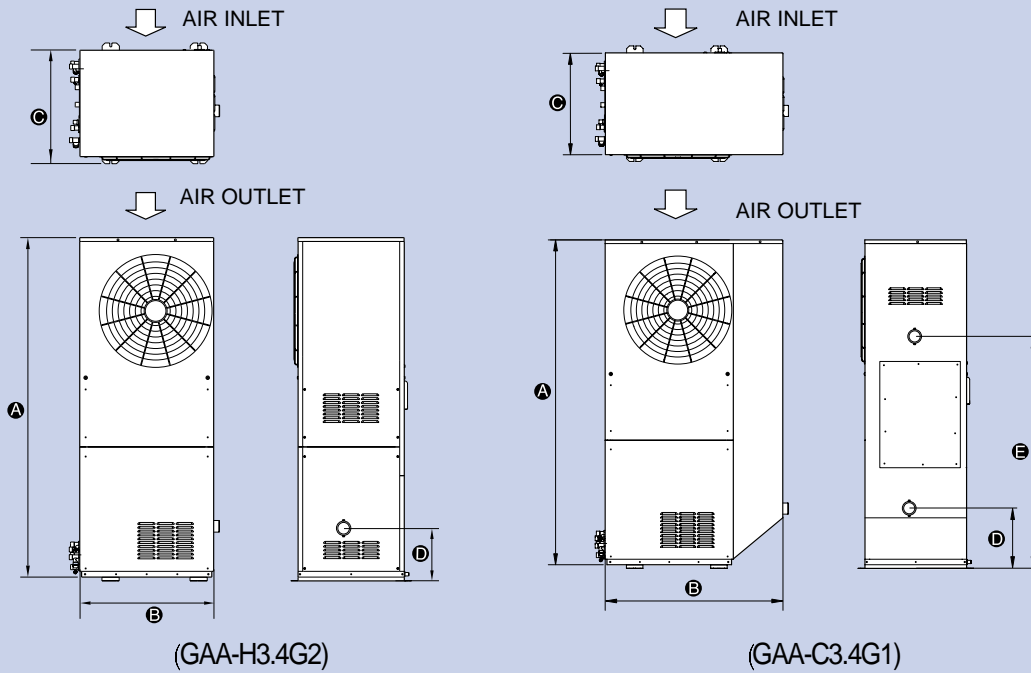
Model		FC-F,E,K25	FC-F,E,K35	FC-F,E,K45	FC-F,E,K65	FC-F,E,K85	FC-W32	FC-W42	FC-V25	FC-V35	FC-V55
ITEM		Floor standing type					Wall mount type		Slim Package type		
Cooling Capacity	W	2,090	2,790	4,020	5,470	7,810	2,790	4,020	6,970	9,290	11,970
	kcal/h	1,800	2,400	3,460	4,700	6,720	2,400	3,460	6,000	8,000	10,300
Heating Capacity	W	3,420	4,730	6,680	8,720	12,920	4,730	6,680	11,150	13,950	18,600
	kcal/h	2,940	4,070	5,740	7,500	11,110	4,070	5,740	9,600	12,000	16,000
Electric	V-ph-Hz	220 - 1 - 60, 220 - 1 - 50									
Power input	W	25	35	45	60	25X1EA, 60X1EA	39	39	-	-	-
Piping Connection	Chilled / Hot Water	inch/mm PT 3/4 *					inch/mm PT 1/2 *		15A	32A	32A
	Drain Socket	mm/inch Vinyl Tube(O.D. ϕ 18mm)					inch/mm Vinyl Tube(O.D ϕ 17mm)		PT 1/2 *	PT 3/4 *	
Weight	kg	20	21	25	26	37	10	10	45	80	80
Sound	dB(A)	31	38	37	40	42	43	43	-	-	-

*Note

- Sound level could be changed about ± 3 dB.
- Rating Capacity is based on the following conditions
 - Cooling : Indoor Unit inlet temperature: 27DB/19.05WB, CHW inlet temp.: 7 °C Standard flow rate
 - Heating : Indoor Unit inlet temperature: 21 DB/ - WB, Hot Water inlet temp.: 60 °C Standard flow rate

Dimension

Outdoor Unit

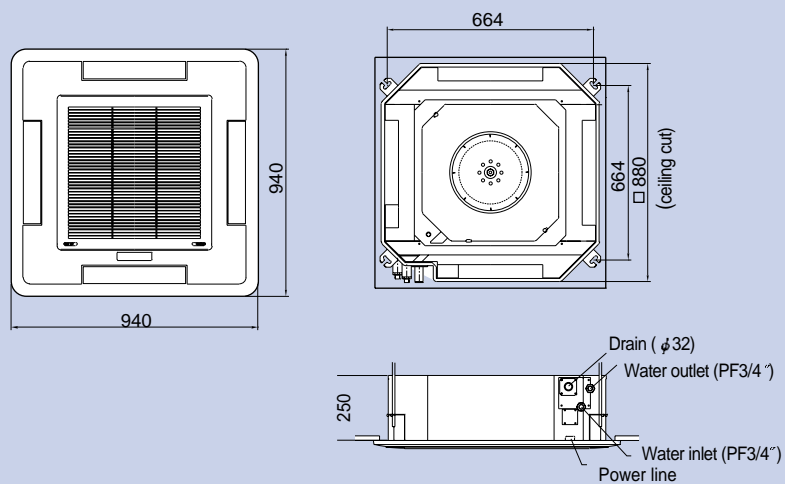


unit : mm

Dimension	A	B	C	D	E
GAA-H3.4G2	1,792	700	575	285	-
GAA-C3.4G1	1,792	970	575	285	1,317

Indoor Unit : Ceiling Cassette Type (4 Way) (FC-A45/65/85)

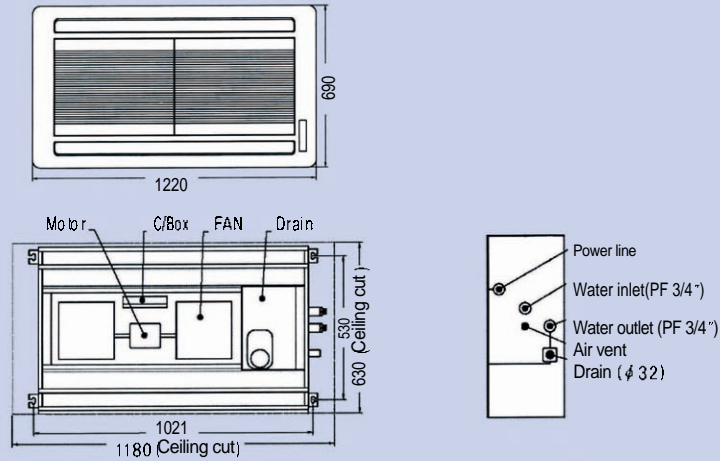
unit : mm



Dimension

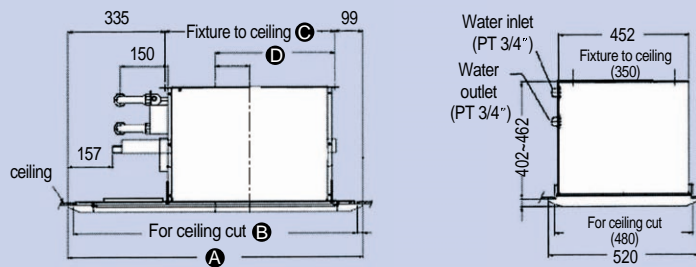
Ceiling Cassette Type (2 Way) (FC-R35/45)

unit : mm



Ceiling Cassette Type (2 Way) (FC-D25/35/45/65)

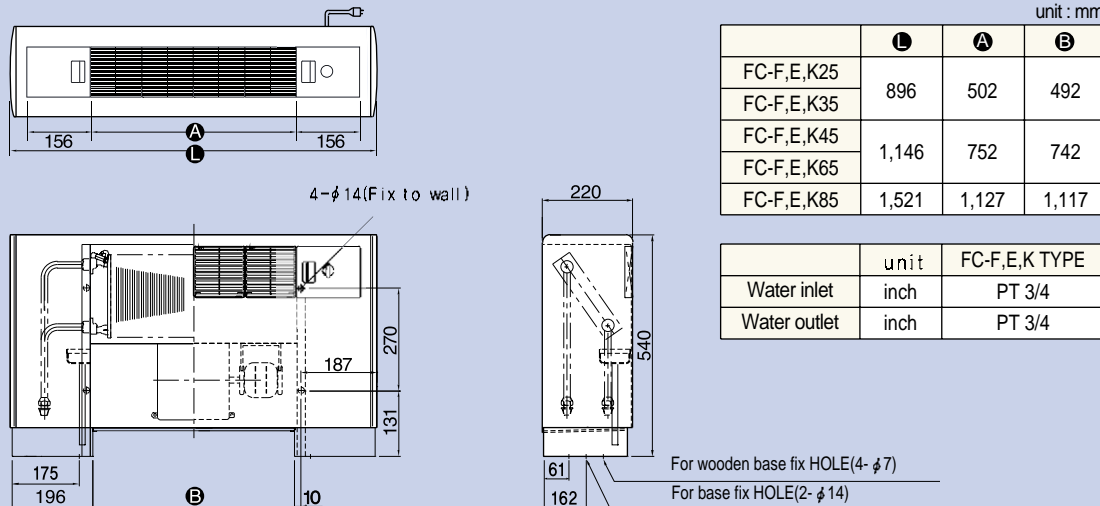
unit : mm



	A	B	C	D
FC-D25	1020	980	586	411
FC-D35	1,360	1,320	926	581
FC-D45				
FC-D65	1,790	1,750	1,356	796

Floor Stand (FC-F25/35/45/65/85), (FC-E25/35/45/65/85), (FC-K25/35/45/65/85)

unit : mm



	L	A	B
FC-F,E,K25	896	502	492
FC-F,E,K35			
FC-F,E,K45	1,146	752	742
FC-F,E,K65			
FC-F,E,K85	1,521	1,127	1,117

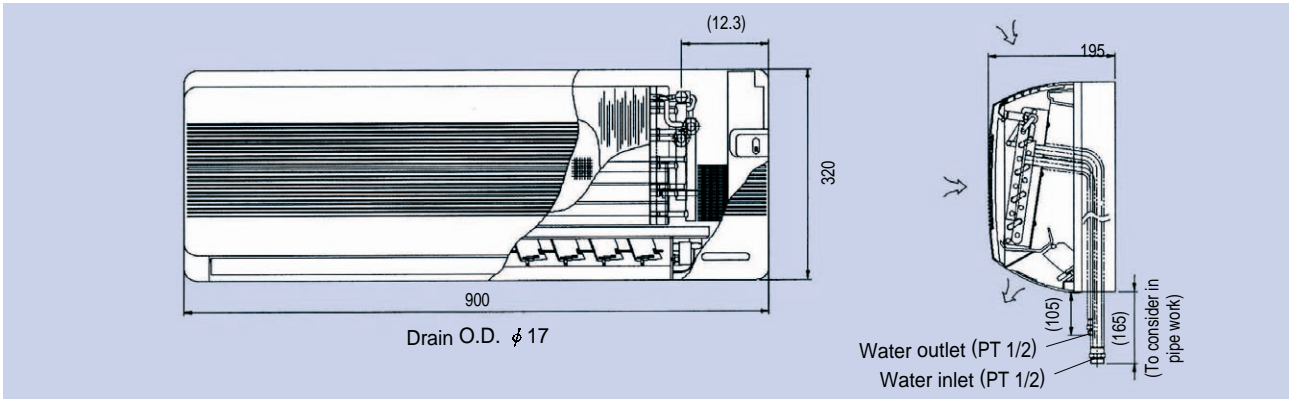
	unit	FC-F,E,K TYPE
Water inlet	inch	PT 3/4
Water outlet	inch	PT 3/4

For wooden base fix HOLE(4- φ 7)

For base fix HOLE(2- φ 14)

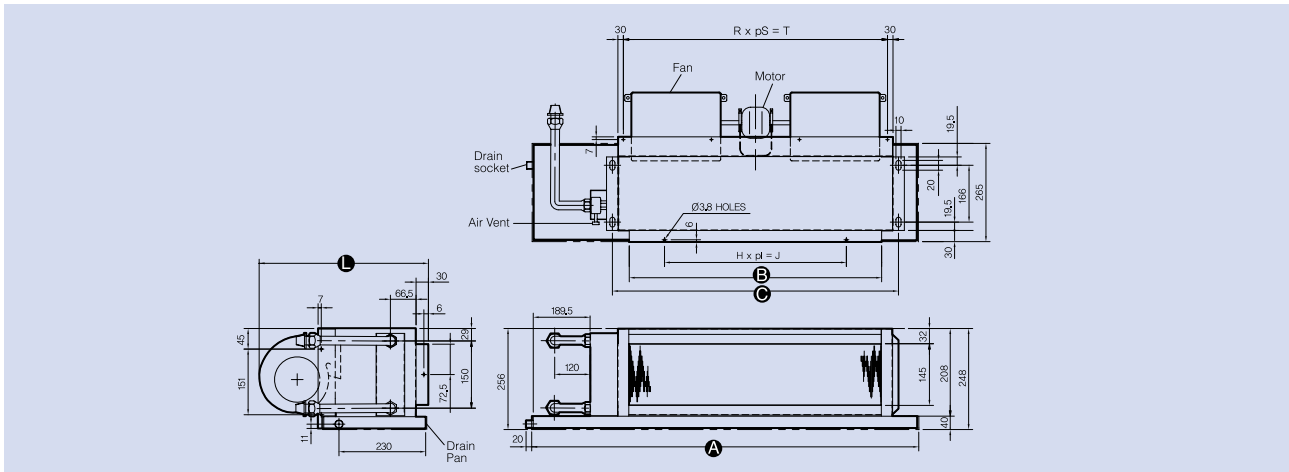
Dimension

Wall mount type (FC-W32/42)

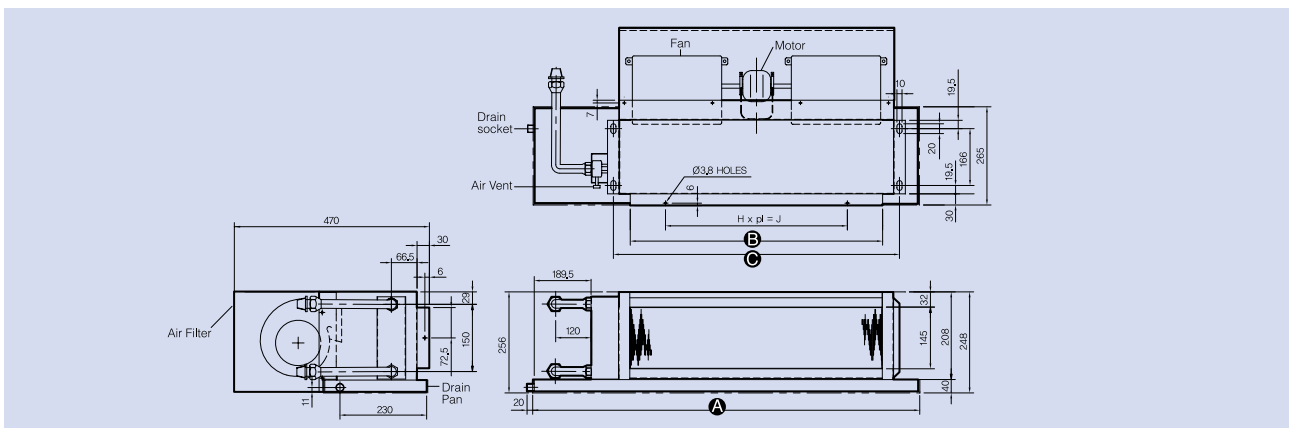


Ceiling ducted type (FC-B25/35/45/65/85)

STANDARD



OPTION (Intake chamber installation)



(unit : mm)

MODEL	SIZE	A	B	C	L	H x pl = J	R x pS = T
FC-B25		930	524	610	443	2 x p200=400	2 x p261=522
FC-B35		960	554	640	443	2 x p200=400	2 x p184=552
FC-B45		1120	714	800	443	3 x p200=600	4 x p178=712
FC-B65		1340	934	1020	443	4 x p200=800	4 x p233=932
FC-B85		1680	1274	1360	443	6 x p200=1200	4 x p318=1272

ZEPHYRUS Series

Mini Absorption Chiller/Heater



●Products :
GAA-H3G1(9,072/11000 kcal/h)
GAA-H3.4G2(10,300/16,000 kcal/h)
GAA-C3.4G1(10,300/16,000 kcal/h)

EHP



●Products : 5~30 HP

GHP



●Products : 8~20 HP

Cooling & Heating PAC



●Products : SHC-72CH1~250CH1(Oil),
SHC-72CG1~125CG1(Gas),
SHC-64E1~125E1(Electric),
Package A/C

Screw Chiller



●Products :
For Air conditioning, Low temperature &
Ice storage system: 40~450RT
Water Cooling & Air Cooling: 30~120RT

Constant Temperature/Humidity Chamber



●Products : (Water/Air cooling)
For High precision room 8,100~54,000kcal/h
For IT room 8,100~56,000kcal/h

Marine Dehumidifier



●Products :
USD-8,000/15,000/23,000/30,000 : D/H only
USPD-8,000/15,000 : P/C + D/H operation,
USPD-8,000A/15,000A : P/C + D/H + A/C
operation

Dry Type Dehumidifier



●Products : 5,400~20,250 kcal/h

AHU



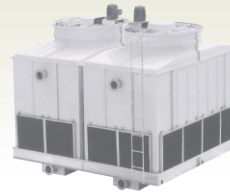
●Products : 60~1,400 CMM

Fan Coil Unit



●Products :
Floor Standing, Ceiling Duct, Ceiling
Cassette, Wall mount, Slim package

Cooling Tower



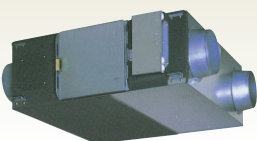
●Products : Counter Flow 5~1,000 R/T
Cross Flow 100~1,000R/T

Ice Storage System



●Product (Ice Storage) :
1098A (115 TON - HRS)
1190A (190 TON - HRS)
1290A (290 TON - HRS)
1500A (570 TON - HRS)

Ventilation System



●Products : 80~1,000 m³/h

GMP System



●Products :
Fan Filter Unit, Air Shower,
Clean Bench, Clean Booth,
Air Clean Unit, Hepa Filter Unit,
Pass Box, Relief Damper,
Clean Locker, Isolater

Dry room System



●Products : Dehumidifier,
Bypass Cooler

Clean Room System



●Products :
Fan Filter Unit, Air Shower,
Clean Bench, Clean Booth,
Air Clean Unit, Hepa Filter Unit,
Pass Box, Relief Damper,
Clean Locker

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