



**DUCT TYPE SERIES**

**AHD**

**ALC**

**KAHV (H)**

**Amena** revolutionizes the realm of air conditioning with the design giving flexibility in unit selection. The Amena's units are compact and light presenting the advantages in installation, transportation and moving. The Amena's direct expansion-condensing units are suitable for an office, a residence, a commercial application and a light industrial application. The Amena's units are available in 10 nominal capacities from 6.7 to 20 refrigeration tons.

## Design for Customer

### The Amena's Products are designed to respond to the needs of a user in

#### 1. Reliability

- The units are designed, tested and produce under worldwide acceptable standards.
- All components of the Amena's air conditioners are carefully culled and tested before assembly process to ensure that the Amena's products will last.
- The fully hermetic compressor gives high efficiency and quiet operation.
- The high-pressure control and a low-pressure control provide the full protection to the system.
- The copper tube-aluminum fin in outdoor coil construction lasts with trouble free for years.

#### 2. Flexibility

- This series of Amena's products is designed to be available in plenty of capacities. Only three models of compressors can be applied with the fan coil units up to 10 capacities.

#### 3. Easy to Transport and Move

- This series of the Amena's condensing units is provided with the flexible air discharge structure. The air discharge direction can be converted to horizontal or vertical direction without any major modifications or additional components.
- The compressor is located in the middle of the unit to make the unit compact and balance.
- The Amena's cubic-shape condensing units create the advantage in the weight distribution on the installation space. Only two units are required to share the capacity and weight at the highest capacity.

#### 4. Easy to Maintenance

- The front and top panel structure provides the flexibility of access to the compressor and motor. Only the front and top panel is needed to be taken off.
- The control is put in the metal box to prevent from the moisture from outside.
- The service valve is easy to operate.

#### 5. Easy Installation

- Compact design requiring minimal installation space.
- Light weight and easy to move
- Save installation cost by requiring small accessories.

### Selection Requirement & Power Consumption

Condensing		Fan Coil		Nominal Air Flow	Capacity	Compressor	Condenser	Indoor	Control	Total System
QTY.	MODEL	QTY.	MODEL	Total CFM	Total BTU/HR	Total KW.	Total Fan KW.	Total Fan KW.	KW.	KW.
1	ALC 008C	1	AHD 008	3,200	80,400	6.662	1 x 0.375	2 x 0.56	0.2	8.357
1	ALC 008C	1	AHD 010	3,200	86,000	6.814	1 x 0.375	2 x 0.56	0.2	8.509
1	ALC 010C	1	AHD 010	3,200	107,000	8.367	1 x 0.375	2 x 0.56	0.2	10.062
1	ALC 010C	1	AHD 012	4,000	112,600	8.461	1 x 0.375	2 x 0.56	0.2	10.156
1	ALC 012C	1	AHD 012	4,000	127,000	11.773	1 x 0.375	2 x 0.56	0.2	13.468
2	ALC 008C	1	KAHV 015	5,500	163,000	13.400	2 x 0.375	1 x 2.2	0.35	16.700
2	ALC 008C	1	KAHV 020	6,500	172,600	13.629	2 x 0.375	1 x 2.2	0.35	16.929
2	ALC 010C	1	KAHV 020	6,500	214,000	16.734	2 x 0.375	1 x 2.2	0.35	20.034
2	ALC 010C	1	KAHV 025	9,500	226,000	16.922	2 x 0.375	1 x 3.75	0.35	21.772
2	ALC 012C	1	KAHV 025	9,500	256,000	23.546	2 x 0.375	1 x 3.75	0.35	28.396

RLA = Rate Load Amps,  
LRA = Locked Rotor Amps,  
FLA = Full Load Amps

Air on Evaporator Coil 80 °F DB 67 °F WB  
Air on Condenser 95 °F DB

# SPECIFICATION CONDENSING UNIT

1. Equipped with high EER, highly efficient compact and light scroll compressor, which have been developed with copeland USA.
2. Condenser coil constructed with aluminium plate fins mechanically bonded to seamless copper tubing.
3. High-pressure switch-protect compressor from excession condenser pressures.
4. Low-pressure switch-protect against loss of charge and evaporator freeze-up.
5. Service Valve with a shut-off access port for pressure testing the system.
6. Anti-short cycle timer to protect the compressor.
7. Motor-Protection includes temperature and current sensitive devices to prevent failure from electrical overload.
8. The box control shall be factory wired and located in a separate enclosure.

## General Data-Condensing Unit

			ALC 008C	ALC 010C	ALC 012C
Power Supply			380 V/3 PH/50 Hz		
Compressor	Type		Scroll		
	Qty.		1	1	1
	V/PH/Hz.		380/3/50	380/3/50	380/3/50
	RLA/LRA		16.4/95	19.2/125	19.6/125
Motor	Type		Permanent Split Capacitor Type		
	Qty.		1	1	1
	V/PH/Hz.		220/1/50	220/1/50	220/1/50
	HP/RPM		1/2 /900 RPM.	1/2 /900 RPM.	1/2 /900 RPM.
	FLA		3.18	3.18	3.18
Fan	Type		Propeller Direct Drive, Vertical Discharge		
	Qty.		1	1	1
	Size	Inch	AL/24	AL/24	AL/24
	Nominal CFM		7,000	7,000	8,000
Coil	Face Area Ft. <sup>2</sup>		17.11	17.11	23.52
	Row/Fin Per	Inch	2/14	2/14	2/14
	Tube Dia	Inch	3/8 Smooth	3/8 Grooved	3/8 Grooved
Connection					
Liquid		Inch	1/2	1/2	5/8
Suction		Inch	1 1/8	1 1/8	1 1/8
Dimension	H	mm.	838	838	1143
	W	mm.	858	858	858
	D	mm.	915	915	915
Weight		Kg.	193	209	212
Safety Devices			High & low Pressure Switches, Thermal Overload Relay with Contactor, Timer		

## Performance Data of Condensing Unit

Model	Condenser Air Entering (°F)															
	SST (°F)	85			90			95			100			105		
		CAP.	SCT.	KW.	CAP.	SCT.	KW.	CAP.	SCT.	KW.	CAP.	SCT.	KW.	CAP.	SCT.	KW.
ALC 008C	30	65.1	110	5.5	63.3	115	5.8	61.3	119	6.2	59.2	124	6.5	57.1	129	6.9
	35	71.5	112	5.7	69.5	117	6.0	67.4	121	6.3	65.2	126	6.7	63.0	131	7.1
	40	78.1	114	5.8	76.0	119	6.1	73.8	123	6.5	71.6	128	6.8	69.2	133	7.2
	45	85.1	116	6.0	82.9	121	6.3	80.6	126	6.7	78.2	130	7.0	75.8	135	7.4
	50	92.4	119	6.2	90.1	123	6.5	87.7	128	6.9	85.2	132	7.2	82.6	137	7.6
ALC 010C	30	87.7	108	7.0	85.5	112	7.4	83.2	117	7.8	80.7	122	8.2	78.2	127	8.7
	35	96.1	109	7.1	93.6	114	7.5	91.1	119	8.0	88.5	124	8.4	85.8	129	8.9
	40	104.9	111	7.3	102.2	116	7.7	99.5	121	8.1	96.7	126	8.6	93.8	130	9.1
	45	114.1	113	7.5	111.3	118	7.9	108.4	123	8.4	105.4	125	8.8	102.3	132	9.3
	50	123.9	116	7.8	120.9	120	8.2	117.8	125	8.6	114.6	130	9.1	111.3	134	9.6
ALC 012C	30	105.0	106	9.7	100.9	110	9.8	96.8	115	10.0	92.6	119	10.2	88.4	123	10.4
	35	116.2	108	10.2	111.8	112	10.4	107.3	117	10.6	102.9	121	10.9	98.4	125	11.1
	40	127.6	110	10.7	123.0	115	11.0	118.3	119	11.3	113.6	123	11.5	108.9	127	11.8
	45	139.5	113	11.3	134.6	117	11.6	129.7	121	11.9	124.7	125	12.2	119.8	129	12.5
	50	151.7	115	11.9	146.6	119	12.3	141.5	123	12.6	136.3	127	12.9	131.2	132	13.3
ALC 008C x2	30	130.3	110	11.1	126.5	115	11.7	122.6	119	12.3	118.5	124	13.1	114.2	129	13.6
	35	143.0	112	11.3	138.9	117	12.0	134.8	121	12.6	130.5	126	13.4	126.0	131	14.1
	40	156.3	114	11.7	152.0	119	12.3	147.7	123	13.0	143.2	128	13.7	138.5	133	14.5
	45	170.2	116	12.0	165.8	121	12.6	161.2	126	13.3	156.5	130	14.0	151.6	135	14.8
	50	184.9	119	12.4	180.2	123	13.0	175.3	128	13.7	170.3	132	14.4	165.2	137	15.2
ALC 010C x2	30	175.4	108	13.9	170.9	112	14.7	166.3	117	15.6	161.5	122	16.5	156.4	127	17.4
	35	192.2	109	14.3	187.3	114	15.1	182.2	119	15.9	176.9	124	16.8	171.6	129	17.8
	40	209.8	111	14.6	204.5	116	15.4	199.0	121	16.3	193.4	126	17.2	187.7	130	18.2
	45	228.3	113	15.1	222.6	118	15.9	216.8	123	16.7	210.8	128	17.7	204.7	132	18.6
	50	247.7	116	15.5	241.7	120	16.3	235.5	125	17.2	229.1	130	18.1	222.5	134	19.1
ALC 012C x2	30	200.4	108	15.9	194.7	113	16.7	188.7	118	17.7	182.6	123	18.6	176.2	127	19.7
	35	219.2	110	16.3	213.1	115	17.1	206.8	120	18.1	200.2	124	19.0	193.5	129	20.1
	40	238.7	112	16.7	232.3	117	17.6	225.6	122	18.5	218.6	126	19.5	211.4	131	20.6
	45	259.0	114	17.3	252.2	119	18.1	245.2	123	19.0	237.8	128	20.0	230.2	133	21.1
	50	280.1	116	17.8	273.0	121	18.7	265.5	126	19.6	257.7	130	20.5	249.7	135	21.6

CAP = Capacity BTU/HR x 1,000

SST = Saturated Suction Temp.

SCT = Saturated Condensing Temp.

KW = Compressor Power Input KW.

Note

1. Assume 15 °F Subcooling when select TXV

2. Interpolation is Permissible. Do not Extrapolate



# FAN COIL UNIT

1. Electro-Galvanized steel, insulated cabinet with a DX. Coil.
2. Thermostatic Expansion Valve equipped already.
3. Double inlet, double width forward curve, centrifugal type blower wheel with adjustable belt drive for KAHV (H) model and direct drive for AHD model.
4. Thermal overload protection for fan motor.
5. Evap coil is pressurized with nitrogen to 150 psig for testing while installation.
6. The unit can be arranged in vertical or horizontal position with either front, rear, upward or downward supply air discharge.
7. 7/8" Aluminium filters, oversized fan motor for high static pressure applications (option)

## General Data-Air Handling Unit

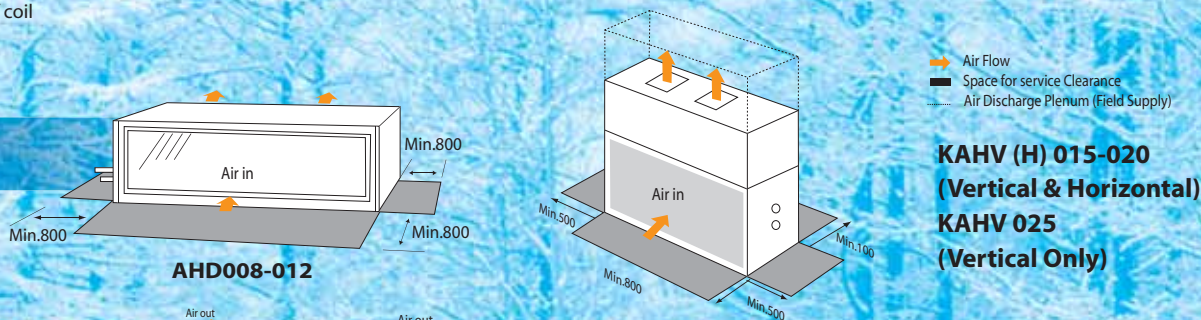
			AHD 008	AHD 010	AHD 012	KAHV (H) 015	KAHV (H) 020	KAHV 025
Power Supply			220 V. 1 PH/50 Hz			380 V. 3 PH/50 Hz.		
Blower	Type		Double Inlet Centrifugal, Direct Drive			Double Inlet Centrifugal, Belt Drive		
	Size	Inch	ø10 x 10	ø10 x 10	ø10 x 10	ø12 x 12	ø12 x 12	ø15 x 15
	Qty		2	2	2	2	2	2
	Normal	CFM	3,200	3,200	4,000	5,500	6,500	9,500
Mortor	V/PH/Hz.		220/1/50	220/1/50	220/1/50	380/3/50	380/3/50	380/3/50
	HP.		3/4	3/4	3/4	3	3	5
	Qty./RPM		2/900	2/1200	2/1200	1/600	1/725	1/700
	FLA		3.23	9.0	9.0	5.2	5.2	8.2
CoilFace Area	Ft <sup>2</sup>		5.55	5.55	6.4	11	11	20
	Row/FinPer	Inch	3/14	4/12	4/12	4/12	4/12	3/12
	Tube Dia	Inch	3/8 Smooth	3/8 grooved	3/8 grooved	3/8 Smooth	3/8 grooved	3/8 Smooth
No. Of Refrigerant Circuit			1			2		
Refrigerant Control			Thermostatic Expansion Valve					
Filter Type			Washable PP Net.			Washable Aluminium		
	(Qty.)-Size	Inch	(1) 14 <sup>3</sup> / <sub>4</sub> x 55	(1) 14 <sup>3</sup> / <sub>4</sub> x 55	(1) 14 <sup>3</sup> / <sub>4</sub> x 62	(3) 24 <sup>3</sup> / <sub>4</sub> x 20	(3) 24 <sup>3</sup> / <sub>4</sub> x 20	(12) 14 <sup>3</sup> / <sub>4</sub> X 15
	Thickness	Inch	1/4			7/8		
Connection	Liquid	Inch	1/2	1/2	5/8	2 x 1/2	2 x 1/2	2 x 5/8
	Suction	Inch	1 1/8	1 1/8	1 1/8	2 x 1 1/8	2 x 1 1/8	2 x 1 1/8
Dimension	H	mm.	460	460	460	1,650	1,650	1,785
	W	mm.	1,445	1,445	1,665	1,520	1,520	2,310
	D	mm.	585	585	648	810	810	870
	A	mm.	995	995	1,055	1,105	1,105	1,378
	B	mm.	295	295	295	413	413	477
Weight		kg.	83	87	93	360	370	390

# Performance Data of Fancoil Unit

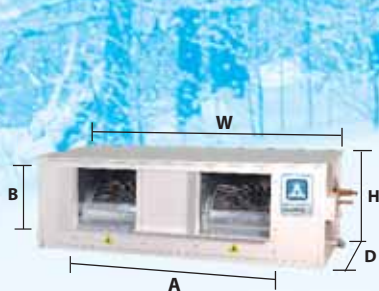
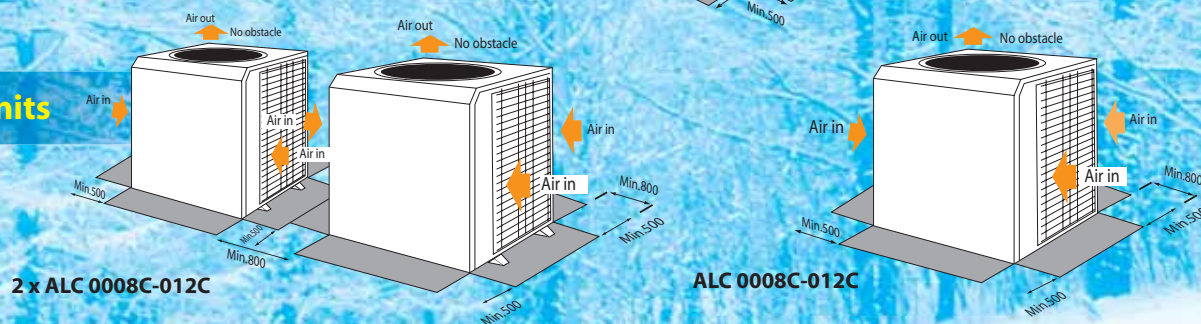
Model	AIR FLOW CFM BF	EWB °F	Evaporating Temp. °F							
			35		40		45		50	
			TC	SHC	TC	SHC	TC	SHC	TC	SHC
AHD008	3200 0.20	72	138	65	121	59	104	53	88	48
		67	113	75	97	68	80	62	63	56
		63	94	82	77	75	61	68	44	62
AHD010	3200 0.16	72	177	80	156	72	134	64	113	57
		67	146	89	124	81	103	72	82	65
		63	121	95	100	86	78	80	57	69
AHD012	4000 0.20	72	211	95	186	86	160	76	135	68
		67	174	106	149	96	123	86	98	77
		63	145	113	119	102	93	92	68	83
KAHV (H) 015	5500 0.16	72	288	131	253	119	218	106	183	95
		67	237	148	202	134	168	121	133	108
		63	197	158	162	144	127	131	92	117
KAHV (H) 020	6500 0.18	72	358	161	315	145	271	130	228	115
		67	295	179	252	161	208	145	165	129
		63	245	196	201	172	158	155	115	139
KAHV 025	9500 0.22	72	433	198	381	180	328	163	276	145
		67	357	226	305	207	252	187	200	169
		63	296	246	244	224	191	204	139	184

EVAP. Air Entering 80 °F DB / TC=Total Capacity BTU/HR x 1,000 / SHC=Sensible Capacity BTU/HR x 1,000 / EWB = ENTERING AIR WET BULB  
BF=By Pass factor of coil

## Fancoil Units



## Condensing Units



AHD



ALC



KAHV (H)

บริษัท ลาโก้ มาร์เก็ตติ้ง จำกัด

136, 136/1-4 ถนนพระยาสุเรนทร์ แขวงบางชัน เขตคลองสามวา กรุงเทพฯ 10510 Tel. 0-2517-5727 Fax. 0-2517-5730

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