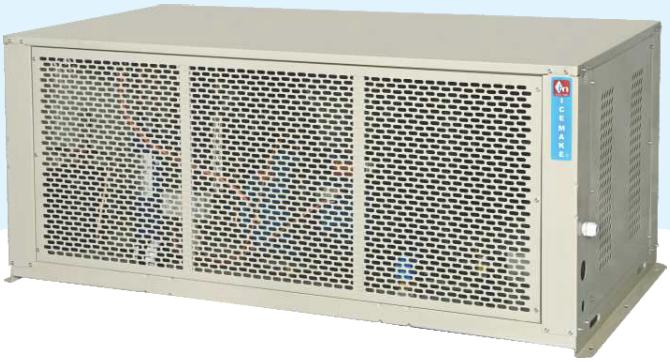
Condensing Unit

Air cooled & Water cooled

Slim Type



Screw Type Condensing Unit

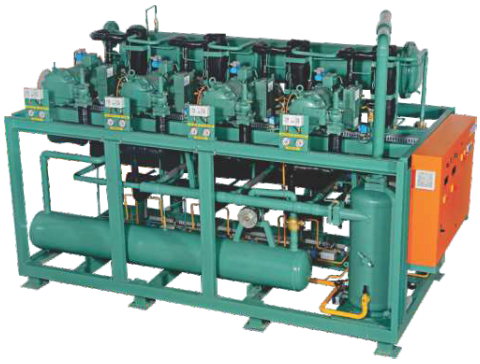
Features

- High cooling with low power consumption
- Designed for high ambient condition up to 55°C
- Condensing coil with inner grooved copper tubes & aluminum fins
- Efficient fans with external motors for single phase and three phase
- High & low pressure cut-out including mounting brackets, wired to terminal strip
- Large size filter drier, moisture indicator, solenoid valve, oil separator and accumulator
- Shell & tube type condenser with high cooling capacity for high ambient conditions

Rack System - An Advance Refrigeration Technology :

- It has advanced power saving system compare to normal refrigeration system
- Rack system will work as per product load variation

Water Cooled



Water Cooled

Air Cooled

Evaporator Unit

FEATURES

- **Fan** - High reliability, low-temperature resistance and low noise external rotor fans.
- **Coil** - High efficiency heat exchange with in-line tube system for minimum loss of air flow between fans and large surface area for better cooling.
- **Defrost** - Use electrical heating stainless steel pipe, high leak proofness at the and anti-electrical leakage and long life.
- **Unit Body** - Aluminium, PU type Powder Coated, Corrosion resistant and nice appearance body.
- **Maintenance** - Compact, adjustable & easily openable side panels for easy installation.

Control Panel

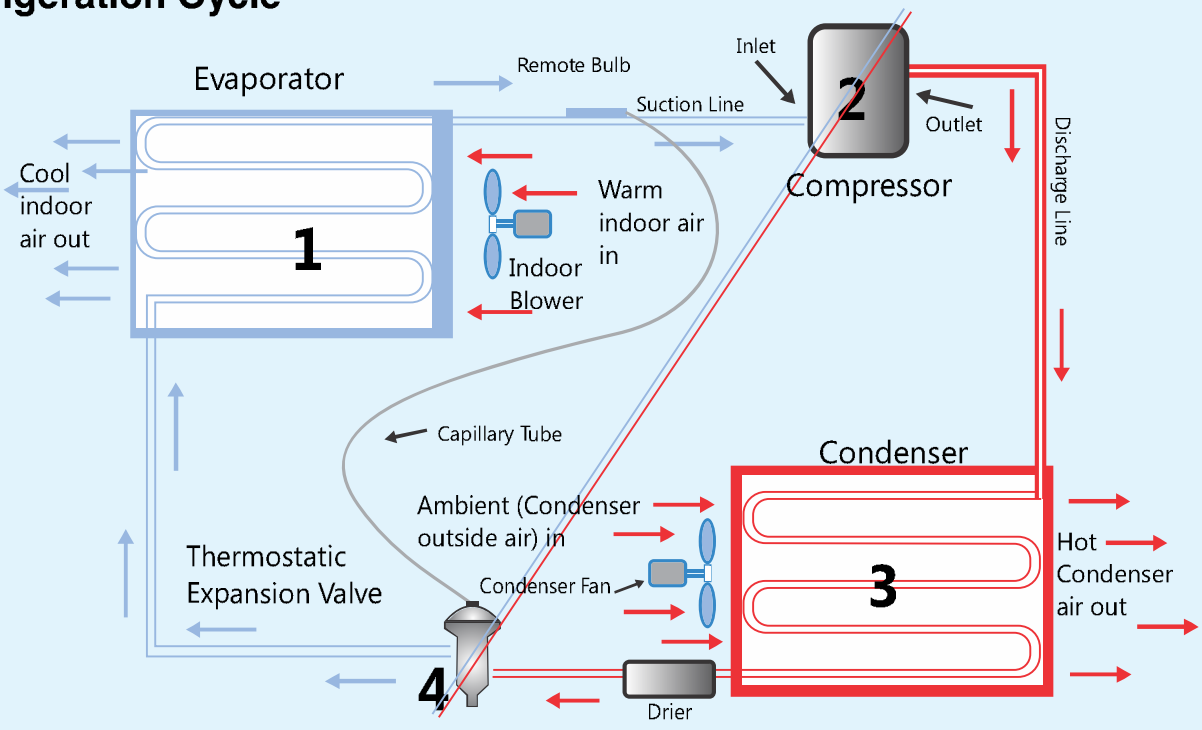
Features

- Temperature Controls
- Phase Preventing
- HP-LP
- Over current protection
- Auto Defrost
- Delay timer

Features

- Phase Preventing
- HP/LP
- Over/Under current protection
- High-Low temperature alarm
- Quick freezing option
- Door alarm
- All type of trip alarm & Record date
- Available in Air & Water cooled system

Refrigeration Cycle



REFRIGERATION SYSTEM

Model Code Logic

IC H 8

- 8 → Capacity BTU / Hr.
- H → Temperature
  HH- High Temperature with humidity (2°C to 18°C)
  L- Low Temperature (-18°C to -28°C), M-Medium Temperature (-2°C to -8°C),
  H-High Temperature (2°C to 8°C), LL- Ultra Low Temperature (-30°C to -40°C)
- IC → ICEMAKE

REFRIGERATION TECHNICAL DATA

Sr. No	Model	Cold Room Volume		Suggested Cooling Capacity					Connected Load	Power Supply	Condensor		Refrigerant		Compressor Type		
		CFT	CMT	Watts	H.P.	Cal.	BTU	TR			Air Cooled	Water Cooled	R-404	R-22	Reci procating	Scroll	Semi Sealed
FOR HIGH TEMPERATURE @ 2°C TO 8°C																	
1	ICH-8	300	8	2198	2.95	1890	7500	0.62	1.8	1 PH	Yes	No	No	Yes	Yes	No	No
2	ICH-12	500	14	3443	4.62	2961	11748	0.98	2.6/1.93	1/3 PH	Yes	Optional	Yes	Yes	Yes	No	YES
3	ICH-17	650	18	4899	6.57	4213	16715	1.39	3.1/2.63	1/3 PH	Yes	Optional	Yes	Yes	Yes	Yes	YES
4	ICH-20	900	25	5634	7.55	4845	19223	1.60	3.08	3 PH	Yes	Optional	Yes	Yes	Yes	Yes	YES
5	ICH-23	1100	31	7630	10.23	6562	26034	2.17	4.03	3 PH	Yes	Optional	Yes	Yes	Yes	Yes	YES
6	ICH-40	1900	54	12146	16.28	10446	41442	3.45	6.11	3 PH	Yes	Optional	Yes	Yes	Yes	Yes	YES
7	ICH-53	2400	68	15776	21.15	13567	53828	4.48	7.9	3 PH	Yes	Optional	Yes	Yes	Yes	Yes	YES
8	ICH-71	3200	91	20357	27.29	17507	69458	5.78	10.14	3 PH	Yes	Optional	Yes	Yes	Yes	Yes	YES
9	ICH-85	4000	113	25420	34.08	21861	86733	7.22	12.51	3 PH	Yes	Optional	Yes	Yes	Yes	Yes	YES
10	ICH-100	5200	147	29886	40.06	25702	101971	8.49	14.89	3 PH	Yes	Optional	Yes	Yes	No	Yes	YES
11	ICH-145	7000	198	42391	56.82	36456	144638	12.04	21.91	3 PH	Yes	Optional	Yes	Yes	No	Yes	YES
12	ICH-175	9000	255	51390	68.89	44195	175343	14.60	25.61	3 PH	Yes	Optional	Yes	Yes	No	Yes	YES
13	ICH-210	11000	311	62586	83.90	53824	213543	17.78	32.86	3 PH	Yes	Optional	Yes	Yes	No	Yes	YES
FOR MEDIUM TEMPERATURE @ -2°C TO -8°C																	
14	ICM-4	250	7	1250	1.68	1075	4265	0.36	1.31	1 PH	Yes	No	No	Yes	Yes	No	No
15	ICM-9	450	13	2751	3.69	2366	9386	0.78	2.4/1.8	1/3 PH	Yes	Optional	Yes	Yes	Yes	No	YES
16	ICM-12	600	17	3813	5.11	3279	13010	1.08	2.8/2.51	1/3 PH	Yes	Optional	Yes	Yes	Yes	Yes	YES
17	ICM-15	800	23	4620	6.19	3973	15763	1.31	3	3 PH	Yes	Optional	Yes	Yes	Yes	Yes	YES
18	ICM-17	1000	28	4778	6.40	4109	16303	1.36	3.92	3 PH	Yes	Optional	Yes	Yes	Yes	Yes	YES
19	ICM-28	1700	48	7875	10.56	6773	26870	2.24	4.88	3 PH	Yes	Optional	Yes	Yes	Yes	Yes	YES
20	ICM-40	2200	62	11722	15.71	10081	39995	3.33	7.48	3 PH	Yes	Optional	Yes	Yes	Yes	Yes	YES
21	ICM-53	2900	82	15739	21.10	13536	53701	4.47	9.79	3 PH	Yes	Optional	Yes	Yes	Yes	Yes	YES
22	ICM-65	3750	106	20153	27.01	17332	68762	5.73	11.83	3 PH	Yes	Optional	Yes	Yes	Yes	Yes	YES
23	ICM-80	4700	133	23950	32.10	20597	81717	6.80	14.24	3 PH	Yes	Optional	Yes	Yes	No	Yes	YES
24	ICM-112	6400	181	33530	44.95	28836	114404	9.53	21.16	3 PH	Yes	Optional	Yes	Yes	No	Yes	YES
25	ICM-135	8100	229	39750	53.28	34185	135627	11.29	24.55	3 PH	Yes	Optional	Yes	Yes	No	Yes	YES
26	ICM-210	9000	255	46600	62.47	40076	158999	13.24	31.68	3 PH	Yes	Optional	Yes	Yes	No	Yes	YES

Sr. No	Model	Cold Room Volume		Suggested Cooling Capacity					Connected Load	Power Supply	Condensor		Refrigerant		Compressor Type		
		CFT	CMT	Watts	H.P.	Cal.	BTU	TR			Air Cooled	Water Cooled	R-404	R-22	Reci procating	Scroll	Semi Sealed
FOR LOW TEMPERATURE @ -18°C TO -28°C																	
27	ICL-3	300	8	550	0.74	473	1877	0.16	2.5	1 PH	Yes	No	Yes	No	Yes	No	No
28	ICL-4	350	10	1145	1.53	985	3907	0.33	1.98	3 PH	Yes	No	Yes	No	Yes	YES	No
29	ICL-6	550	16	1788	2.40	1538	6101	0.51	3	3 PH	Yes	Yes	Yes	No	Yes	YES	Yes
30	ICL-9	850	24	2743	3.68	2359	9359	0.78	4.1	3 PH	Yes	Yes	Yes	No	Yes	YES	Yes
31	ICL-13	1200	34	3328	4.46	2862	11355	0.95	5.4	3 PH	Yes	Yes	Yes	No	Yes	YES	Yes
32	ICL-18	1700	48	4743	6.36	4079	16183	1.35	6.9	3 PH	Yes	Yes	Yes	No	Yes	YES	Yes
33	ICL-26	2500	71	7960	10.67	6846	27160	2.26	8.6	3 PH	Yes	Yes	Yes	No	Yes	YES	Yes
34	ICL-38	3400	96	11355	15.22	9765	38743	3.23	10.6	3 PH	Yes	Yes	Yes	No	No	YES	Yes
35	ICL-42	3800	107	10870	14.57	9348	37088	3.09	11.5	3 PH	Yes	Yes	Yes	No	No	YES	Yes
36	ICL-45	4000	113	12745	17.08	10961	43486	3.62	13.5	3 PH	Yes	Yes	Yes	No	No	No	Yes
37	ICL-50	5000	141	15390	20.63	13235	52511	4.37	15.18	3 PH	Yes	Yes	Yes	No	No	No	Yes
38	ICL-65	6500	184	18690	25.05	16073	63770	5.31	20.29	3 PH	Yes	Yes	Yes	No	No	No	Yes
30	ICL-80	8000	226	21875	29.32	18813	74638	6.21	23.65	3 PH	Yes	Yes	Yes	No	No	No	Yes
40	ICL-105	10500	297	27810	37.28	23917	94888	7.90	32.4	3 PH	Yes	Yes	Yes	No	No	No	Yes
FOR HIGH TEMPERATURE @ 2°C TO 18°C WITH HUMIDITY FOR RIPENING / PRE - COOLING																	
41	ICHH-12	1200	34	5107	6.85	4392	17425	1.45	2.03	1/3 PH	Yes	No	Yes	Yes	Yes	Yes	YES
42	ICHH-17	1500	42	5033	6.75	4328	17173	1.43	2.53	3 PH	Yes	Yes	Yes	Yes	Yes	Yes	YES
43	ICHH-20	1700	48	8125	10.89	6988	27723	2.31	3.27	3 PH	Yes	Yes	Yes	Yes	Yes	Yes	YES
44	ICHH-23	2200	62	10930	14.65	9400	37293	3.11	4.02	3 PH	Yes	Yes	Yes	Yes	Yes	Yes	YES
45	ICHH-40	3500	99	17648	23.66	15177	60215	5.01	6.15	3 PH	Yes	Yes	Yes	Yes	Yes	Yes	YES
46	ICHH-53	4500	127	22869	30.66	19667	78029	6.50	8.13	3 PH	Yes	Yes	Yes	Yes	Yes	Yes	YES
47	ICHH-71	7000	198	29769	39.90	25601	101572	8.46	10.45	3 PH	Yes	Yes	Yes	Yes	Yes	Yes	YES
48	ICHH-85	8000	226	38056	51.01	32728	129847	10.81	12.97	3 PH	Yes	Yes	Yes	Yes	Yes	Yes	YES
FOR ULTRA LOW TEMPERATURE -30°C TO -40°C																	
49	ICLL-17	as per heat load		5100	6.84	4386	17401	1.45	5.82	3 PH	Yes	Yes	Yes	No	semi sealed two stage		Yes
50	ICLL-24			7673	10.29	6599	26180	2.18	7.63	3 PH	Yes	Yes	Yes	No			Yes
51	ICLL-39			12025	16.12	10342	41029	3.42	12.26	3 PH	Yes	Yes	Yes	No			Yes
52	ICLL-55			16185	21.70	13919	55223	4.60	15.57	3 PH	Yes	Yes	Yes	No			Yes
53	ICLL-64			19215	25.76	16525	65562	5.46	18.43	3 PH	Yes	Yes	Yes	No			Yes
54	ICLL-72			22315	29.91	19191	76139	6.34	21.05	3 PH	Yes	Yes	Yes	No			Yes
55	ICLL-86			27135	36.37	23336	92585	7.71	25.5	3 PH	Yes	Yes	Yes	No			Yes

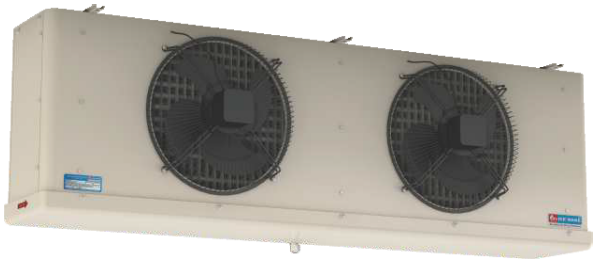
* Connected load will be different in different compressor

A4007-301H, A7012-301A

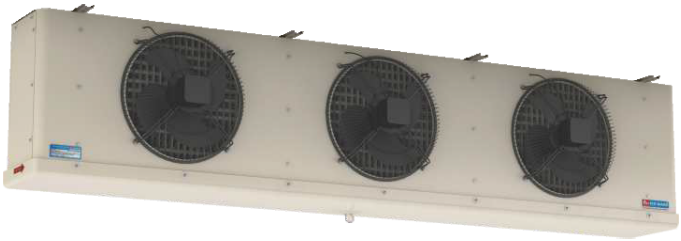
A4012-302H, A7021-302A

A4018-303H, A7032-303A

A4024-353H, A4034-353H
A7043-353A, A7060-353A



A4039-452H, A7062-452A



A4058-453H, A7090-453A

A3088-562H

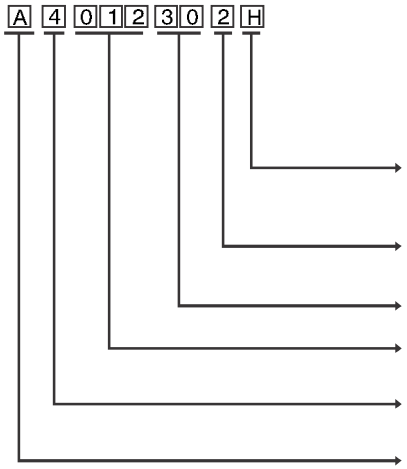
A3132-563H

CLS709-252A

CLD713-252A, CLD719-252A

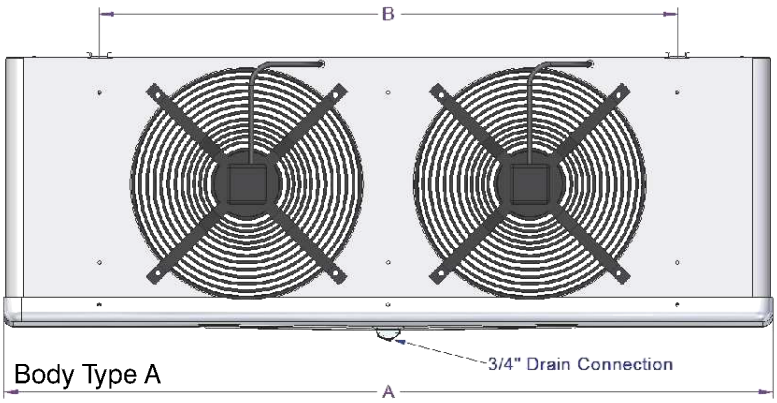
CLD724-253A, CLD729-253A

Model Code Logic

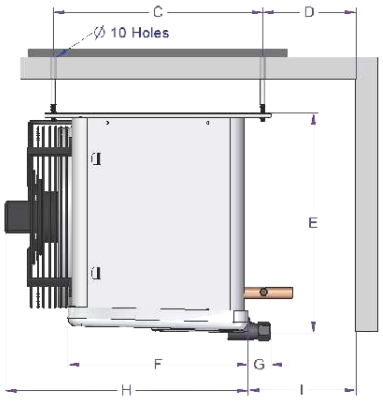


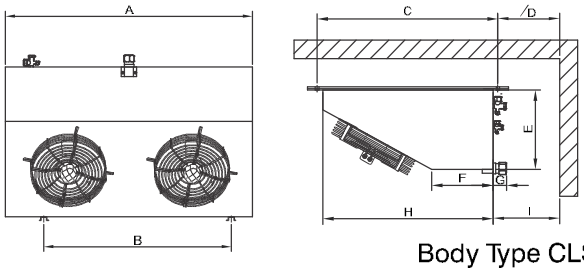
- H → Defrost Cycle (A-Air Defrost, H-Heater Defrost)
- 2 → No. of Fan
- 30 → Fan Diameter (in mm) (for e.g. if 300mm→30 / if 250mm→25 like wise....)
- 12 → Surface Area (in sq.mtr)
- 4 → Fins per inch
- A → Body Type (A-Regular, CLS - Ceiling Type Single Side Flow, CLD - Ceiling Type Dual Side Flow)

Physical Dimensions

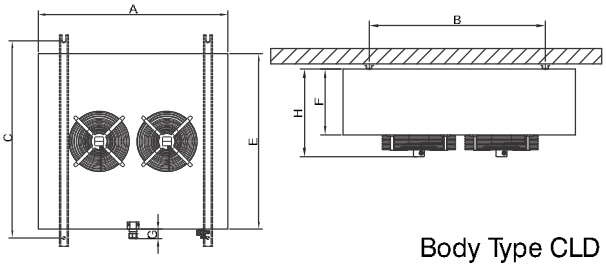


Body Type A





Body Type CLS

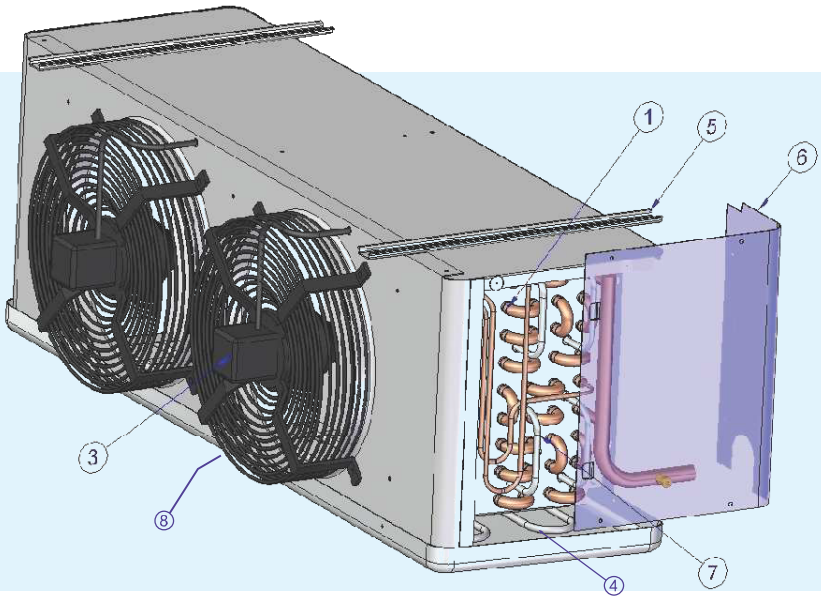


Body Type CLD

Physical Perameters	Dimensions (mm) for Model											
	A4007-301H	A4012-302H	A4018-303H	A4024-353H	A4034-353H	A4039-452H	A4058-453H	A3088-562H	A3132-563H	CLS709-252A	CLD713-252A	CLD724-253A
	A7012-301A	A7021-302A	A7032-303A	A7043-353A	A7060-353A	A7062-452A	A7090-453A				CLD719-252A	CLD729-253A
A	765	1095	1490	1575	1880	1880	2660	2424	3427	825	820	1150
B	485	815	1210	1300	1605	1595	2380	2034	3033	685	680	1010
B1	NA	NA	NA	430	535	800	800	1017	1012	NA	NA	NA
C	375	375	375	375	375	375	375	476	476	530	750	750
D	350	350	350	350	350	400	400	550	550	300	NA	NA
E	410	410	410	480	550	635	635	877	877	220	720	720
F	325	325	325	325	325	325	325	435	435	190	220	220
G	40	40	40	40	40	40	40	40	40	40	40	40
H	435	435	435	435	435	460	460	620	620	500	315	315
I	375	375	375	375	375	425	425	575	575	375	0	0
Unit Weight (kg)	17	26	35	46	57	75	115	250	325	15	24	36

Features

1) High efficiency heat exchanger with in-line tube system for minimum loss of air flow between fins and with large surface area for long cooling time.
2) Fan Motor and Heater wires are connected in terminal box mounted inside the unit.
3) Fan motors are of leading brand. Insulation Class F, thermally protected against overload and can be used on 230V/50 Hz supplies.
4) Provision given for installing tray heater later.
5) Stainless steel mounting rail.
6) Compact, adjustable & easily openable side panels for easy installation.
7) Heater rods are arranged for better heat distribution in coil. Electric heater rods are inserted into special aluminium sleeve tubes to avoid steam formation.
8) Drainage Connection



Unit Body :

1.2mm thick Aluminium, pu type white powder coated, corrosion resistant and nice appearing body.
Round corner Drain tray and also provided intermediate sheet to avoid condensation.
Aluminium Die cast, threaded, 3/4" diameter drainage connection.

Finned coil block:

Aluminium fin, thickness 0.30 mm
Shedder Valve provided for gas charging.
Coils are degreased, cleaned and tested with 25 bar air pressure and leak test under water according to standard.

Fan Motor:

Axial fans with external rotor motor, single phase - 230 V, 50/60 Hz with internally wired thermal contact and wired with internal terminal box.
Electrical design according to standard.
Protection class: IP-54, Insulation Class F
Application range : -35°C to +40°C

Defrost Heating:

Electric heater rods 230 V sleeve tube with 7-8 mm diameter

Technical Specifications

EVAPORATOR UNIT (Evap. Temp. -8°C to -35°C)										
Sr.	PARAMETERS/MODEL	A4007-301H	A4012-302H	A4018-303H	A4024-353H	A4034-353H	A4039-452H	A4058-453H	A3088-562H	A3132-563H
1	Capacity (KW) (at -25°C, DT1 = 7 K)	1.25	2.5	3.8	5.0	6.8	8.27	11.7	17	27
2	Heat Transfer Area (Sq. Mtr)	6.9	12.15	18.23	24.3	34	39.12	58.12	88	132
3	Tube Volume (In Ltr)	2.5	3.4	5	7	10.21	10.5	15.5	24	36
4	Fin Spacing-mm/FPI(Fin Per Inch)	4/6	4/6	4/6	4/6	4/6	4/6	4/6	3.6/7	3.6/7
5	Fan Diameter & No. of Fans / Ph	300/1/1ph	300/2/1ph	300/3/1ph	350/3/1ph	350/3/1ph	450/2/3ph	450/3/3ph	560/2/3ph	560/3/3ph
6	Air Flow (m^3/h) / Throw(Mtr)	1560/9	3120/9	4680/10	8200/12	8200/12	8600/14	12900/14	19600/18	29400/18
7	Motor - Input Value (watts)	87 x 1	87 x 2	87 x 3	150 x 3	150 x 3	320 x 2	320 x 3	570 x 2	570 x 3
8	Motor - Current (Amp.)	0.42 x 1	0.42 x 2	0.42 x 3	0.65 x 3	0.65 x 3	0.74 x 2	0.74 x 3	1.10 x 2	1.10 x 3
9	Coil & Tray Heater Total (watts)	2750	4000	4600	5500	5500	6550	9450	12600	19800
10	Pipe Inlet & Outlet	1/2 & 7/8	1/2 & 7/8	1/2 & 7/8	5/8 & 1.1/8	5/8 & 1.1/8	5/8 & 1.1/8	5/8 & 1.3/8	5/8 & 1.5/8	7/8 & 2.1/8

EVAPORATOR UNIT (Evap. Temp. 10°C to -8°C)								
Sr. NO	Parameters/Model	A7012-301A	A7021-302A	A7032-303A	A7043-353A	A7060-353A	A7062-452A	A7090-453A
1	Capacity (KW) (at -8°C, DT1 = 8 K)	1.75	3.5	5.25	7	9.5	13.5	19
2	Heat Transfer Area (Sq. Mtr)	12.3	21.3	32.1	42.6	59.5	62.45	90.75
3	Tube Volume (In Ltr)	2.5	3.4	5	7	10.21	10.5	15.5
4	Fin Spacing-mm/FPI(Fin Per Inch)	3.6/7	3.6/7	3.6/7	3.6/7	3.6/7	3.6 / 7	3.6 / 7
5	Fan Diameter & No. of Fans / Ph	300/1/1ph	300/2/1ph	300/3/1ph	350/3/1ph	350/3/1ph	450/2/3ph	450/3/3ph
6	Air Flow (m^3/h) / Throw(Mtr)	1560/9	3120/9	4680/10	8200/12	8200/12	8600/14	12900/14
7	Motor - Input Value (watts)	87 x 1	87 x 2	87 x 3	150 x 3	150 x 3	320 x 2	320 x 3
8	Motor - Current (Amp.)	0.42 x 1	0.42 x 2	0.42 x 3	0.65 x 3	0.65 x 3	0.74 x 2	0.74 x 3
9	Pipe Inlet & Outlet	1/2 & 7/8	1/2 & 7/8	1/2 & 7/8	5/8 & 1.7/8	5/8 & 1.1/8	5/8 & 1.1/8	5/8 & 1.3/8

EVAPORATOR UNIT (Evap. Temp. 10°C to -4°C)						
Sr. NO	Parameters/Model	CLS709-252A	CLD713-252A	CLD719-252A	CLD724-253A	CLD729-253A
1	Capacity (KW) (at -2°C, DT1 = 8 K)	1.45	2.35	3.2	5.2	6.1
2	Heat Transfer Area (Sq. Mtr)	9.76	13.02	19.52	24.4	29.3
3	Tube Volume (In Ltr)	1.92	2.56	3.84	4.7	5.64
4	Fin Spacing-mm/FPI(Fin Per Inch)	3.6/7	3.6/7	3.6/7	3.6/7	3.6/7
5	Fan Diameter & No. of Fans	250/2	250/2	250/2	250/3	250/3
6	Air Flow (m^3/h) / Throw(Mtr)	2000/4	2000/4	2000/4	3000/4	3000/4
7	Motor - Input Value (watts)	50 x 2	50 x 2	50 x 2	50 x 3	50 x 3
8	Motor - Current (Amp.)	0.25 x 2	0.25 x 2	0.25 x 2	0.25 x 3	0.25 x 3
9	Pipe Inlet & Outlet	3/8 & 1/2	3/8 & 1/2	3/8 & 5/8	3/8 & 3/4	3/8 & 3/4

Air flow (m^3/h) :- The air flow is determined on a suction side chamber testing stand according to ISO 5801 with dry cooler surface.

Air throw(m) :- The air throw gives the distance from the outlet area of the air cooler at which the average of the air velocity taken at 0.5 m, 0.75 m and 1 m from the ceiling at 20°C equals 0.5 m/s.

Capacity (kw) :- The capacity data are based upon measurement according to standard at the following conditions:

- Refrigerant R404A,
- Liquid temperature 30°C resp. 20°C (for evaporating temperatures below -20°C)
- The superheat of refrigerant between outlet and inlet is considered 65%

The selection diagram and the capacity table are already considering the influence of the air humidity and specify the actual capacity of the cooler under operating conditions (wet or frosty cooler surface).