

Bulletin 3100

ICL - Industrial Coolers, Low Profile



ICL - INDUSTRIAL COOLERS, LOW PROFILE

216 MODELS

Ammonia, Halocarbon, and Glycol Refrigerants
1 to 19 Tons Refrigeration (3.5 to 67 kW)
2,500 to 37,980 CFM (1,179 to 17,923 L/s)



Air Defrost • Hot Gas Defrost • Water Defrost
• Medium and High Temperature

“The Heat Transfer Experts”

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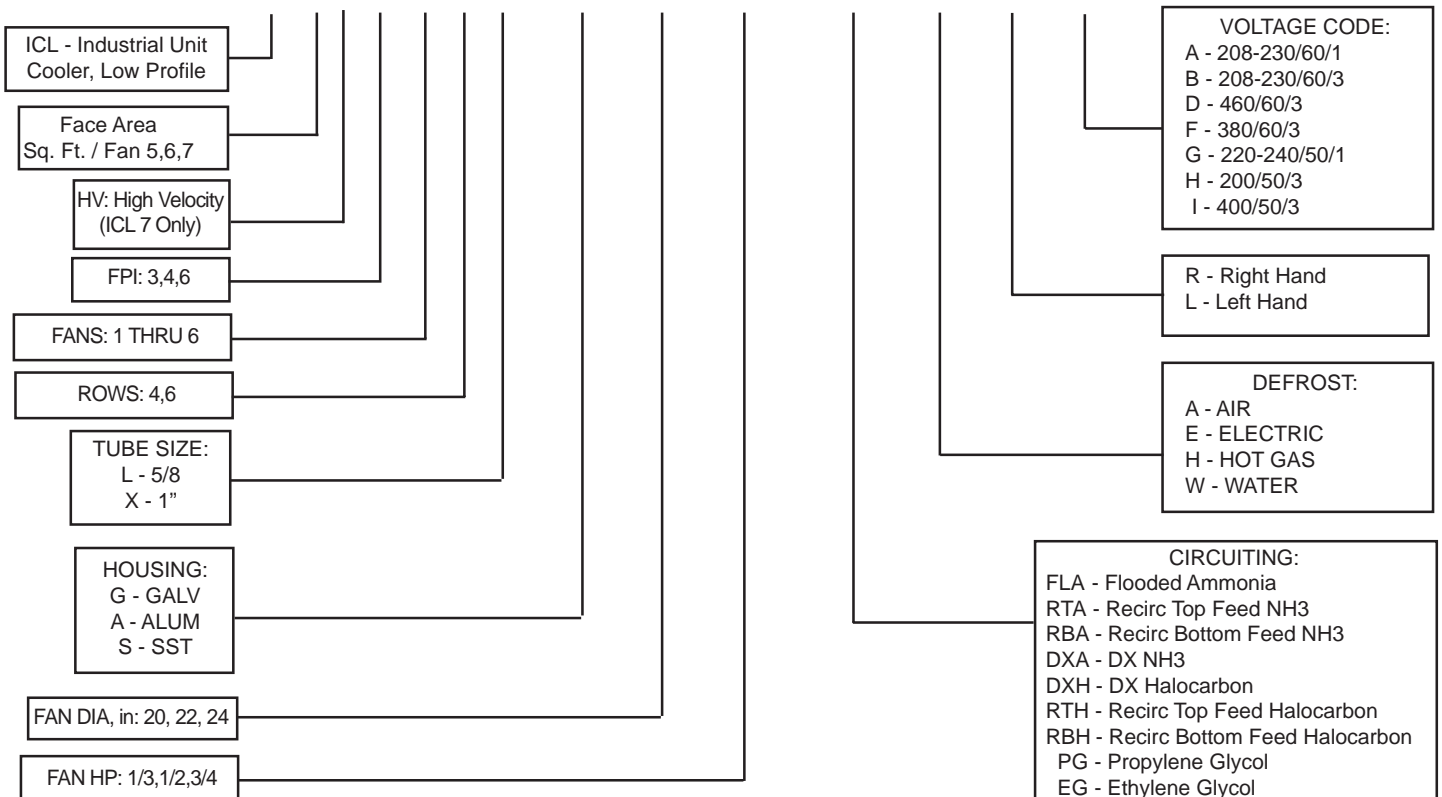
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MODEL NOMENCLATURE

ICL 7 – 4 2 4 X – G – 22 – 1/2 – FLA – H – R – B



ENGINEERING SPECIFICATIONS

I. EVAPORATORS — GENERAL

Coil - <u>Ammonia - FL and RB:</u>	To be constructed with 1" OD x .065" wall seamless drawn Aluminum tubing.
<u>Ammonia - RT and DX:</u>	To be constructed with 5/8" OD x .049" seamless drawn Aluminum tubing.
<u>Halocarbon - FL and RB:</u>	To be constructed of 1" x .035" wall seamless, Copper tubing.
<u>Halocarbon - RT and DX:</u>	To be constructed with 5/8" x .018" seamless, Copper tubing.
<u>**Glycol:</u>	To be constructed with 5/8" x .018" seamless, Copper tubing.

****Consult Factory for Performance Ratings.**

- **Fins** - Shall be aluminum 1100 alloy. Fins shall be continuous flat plate type with full length, self-spacing collars. Tubes to be staggered in direction of airflow, expanded into fin collars to form a tight mechanical bond between tube and fin.
- **Headers - Ammonia:** Shall be made of schedule 40 (minimum) Aluminum pipe. All joints TIG welded.
Halocarbon: Shall be made of Type "L" Copper. All joints brazed with 5% Silver Solder.
- **Coil Connections - Ammonia** - Shall be aluminum flange unions. (Dielectric bushing and washers which will electrically isolate aluminum coil flanges from the supplied mating steel socket weld flanges, are optional.) **Halocarbon** - Copper "sweat."
- **Ammonia Coils** Shall be tested for leaks after welding at 500 psig (35 bar) with dry air under water.
Halocarbon coils - Shall be tested for leaks after welding at 350 psig (25 bar) with dry air under water.
- **Fans & Motors** - Propeller fans constructed of Aluminum blades on steel spiders. 20" (508mm), 22" (559mm) and 24" (610mm) diameter fans driven at 1140/950 RPM @ 60/50 Hz. Fan motors to be TEAO, with ball bearings and internal thermal protection, Single Phase and Three Phase.
- **Cabinet** - Standard construction is of 16 Ga. Galvanized Steel. (Special materials are also available. See "Optional Features"). Removable Water Distribution pans (Water Defrost) and Air Baffles (Air & Hot-Gas Defrost), are made of 0.050 Aluminum.
- **Drainpans** - Shall be made of welded Aluminum. Insulated Drainpan and galvanized steel cover may also be specified. (Standard for Hot-Gas defrost with pan loop).

Note: **Insulated Drain Pans** are required by the USDA for meat processing.

II. CIRCUITING

- **Liquid Overfeed Circuiting** - RB (Recirc. Bottom Feed) and RT (Recirc. Top Feed) coils are circuited parallel-flow to optimize circuit feeding and coil performance at all load conditions. Liquid overfeed orifices shall be used at each circuit entrance, sized for 5 psi pressure drop to insure good liquid distribution.
- **Flooded Circuiting** — FL (Gravity Flooded) coils are circuited parallel-flow to optimize circuit feeding and coil performance at all load conditions.
- **Direct Expansion Circuiting** — DX coils are circuited counterflow to produce superheated refrigerant on last pass. (Required for expansion valve operation).

III. DEFROST

- **Hot Gas (HG) Defrost** — Optional HG drainpan defrost shall be a serpentine circuit of round tubing placed in good thermal contact with “hot plate”. Hot Gas pan circuit connections are made within the boundaries of the drainpan to provide full containment of condensate. Hot-Gas circuit shall be mounted inside the drainpan, insulated and protected by a galvanized steel cover.
- **Water (W) Defrost** — Coil to be arranged for water defrosting. Water shall be distributed evenly over the entire coil surface (excluding return bends and headers) by removable, Aluminum pans mounted above the fins.
- **Electric Defrost** — Coil to be arranged for electric defrosting. Heater elements are placed in good thermal contact with “hot plate”. Additional heater elements are placed across the bottom of the fins, and interspersed through the coil. (Also inside an insulated area surrounding the liquid distributor, DX only). Electrical connections are made via terminal blocks in a non-condensing location.

IV. APPROVED VENDOR

Approved Vendor — Colmac Coil Manufacturing, Inc. **Model: ICL** _____

V. ORDERING INFORMATION

Please Specify

1. Complete model number.
2. Saturated suction temperature.
3. Room temperature.
4. Overfeed ratio (if pump recirculated).
5. Options or special features.

OPTIONAL FEATURES

- ¹Dual circuiting for capacity control.
- ¹Corrosion resistant fin coatings.
- ¹Variable fin spacing for heavy frost conditions. First row on 4 row coils and first 2 rows on 6 row coils are 2 FPI, remaining rows of coil are 4 FPI.
- Stainless steel or all Aluminum cabinet.
- Dielectric steel flanges & bolts.
- ¹Electric Defrost.
- Heated and Insulated Drainpan, Hot Gas Defrost.
- Insulated Drainpan, (Air and Water Defrost, Coil Only Hot-Gas Defrost)
- ¹Fan Speed Controls, Single and three phase

(¹Consult Factory for more information)

APPLICATION GUIDELINES

ICL Unit Coolers - Are suitable for most refrigerated storage areas. Standard units may be operated with wet fins, since their air velocities do not permit moisture carry-over. High Velocity Units (available on ICL7 models) should only be used in spaces well below freezing, or where moisture carry-over can be tolerated.

Fan Motor Heat - Is not included in the ratings and should be added to the room cooling load as follows:

HP	English	SI	
	Btu / (HP*hr)	kW	Watts / kW
1/8 to 1/2	4250	0.1 to 0.4	1670
3/4 to 3	3700	0.6 to 2.2	1454
5 to 20	2950	3.7 to 14.9	1159

Low TD's - Approx. 10°F (6°C) - are recommended for high humidity applications such as Carcass Chillers and Wet Produce storage.

- Carcass Chilling requires a higher initial refrigeration capacity; removing body heat raises initial TD during pull-down. Size liquid lines for anticipated maximum load.

Recommended Coil Circuiting

RB - Pump Recirculated, Bottom Feed, Parallel Flow - Is recommended when using hot gas defrost systems. The coil should always have hot gas fed at the top (suction) to ensure good liquid and oil drainage during defrost.

RT - Pump Recirculated, Top Feed, Parallel Flow - Is recommended for air and water defrost systems. Although not recommended, top Feed can also be used in hot gas defrost systems provided hot gas is fed into the liquid header at the top of the coil. Gas flowing through the liquid feed orifices will experience some pressure drop, which will penalize defrost performance.

Note: Liquid Overfeed Systems - Must provide liquid at 5 psi (35 kPa) above suction pressure and at a temperature not exceeding 30°F (17°C) above saturated suction temperature.

FL - Gravity Flooded, Bottom Feed, Parallel Flow - Is typically cost-effective for small systems (4 evaporators or less), and is recommended when a variable load exists. May be used with Hot Gas Defrost, provided the coil has hot gas fed into the suction header to ensure good liquid and oil drainage during defrost.

Recommended Circuiting / Defrost Combinations

DX - Direct Expansion Feed, Counter Flow - Should not be used on Ammonia systems when saturated suction temperature is 0°F (-18°C) or less. For best results, DX coils should be used with a minimum TD of 12 to 15°F (7 to 9°C) for Ammonia, and a minimum TD of 6 to 10°F (4 to 6°C) for Halocarbon

Circuiting	Defrost Configuration			
	Hot Gas	Water	Air	Electric
FLA / FLH	✓	✓	✓	N/R
RBA / RBH	✓	✓	✓	N/R
RTA / RTH	N/R	✓	✓	✓
DXA / DXH	✓	✓	✓	✓

AMMONIA & R-22 RATINGS, FL / RB CIRCUITING, ENGLISH UNITS

English Capacities of Colmac ICL Series Refrigeration Equipment
(Generated at 30°F EADB, 0.90 Sens. Heat Ratio)

Model	Fans	Rows	Fan Dia.	Horsepower		Face Area (ft ²)	3 FPI - FL / RB				4 FPI - FL / RB				6 FPI - FL / RB			
							Air Flow		Btuh / °F		Air Flow		Btuh / °F		Air Flow		Btuh / °F	
							CFM	FPM	Wet	Frosted	CFM	FPM	Wet	Frosted	CFM	FPM	Wet	Frosted
ICL5	1	4	20"	1/3	1/2	5	3000	600	1439	1308	2950	590	1516	1378	2800	560	1770	1609
	1	6	20"	1/3	1/2	5	2850	570	1885	1713	2750	550	1968	1789	2550	510	2117	1924
ICL6	1	4	22"	1/2	3/4	6.25	3900	624	1854	1685	3800	608	1938	1761	3700	592	2305	2095
	1	6	22"	1/2	3/4	6.25	3750	600	2450	2227	3650	584	2574	2340	3350	536	2747	2497
ICL7	1	4	22"	1/2	3/4	7.5	4650	620	2214	2012	4600	613	2340	2127	4400	587	2747	2497
	1	6	22"	1/2	3/4	7.5	4500	600	2940	2673	4400	587	3010	2818	4100	547	3345	3041
ICL5	2	4	20"	1/3	1/2	10	6000	600	2878	2616	5900	590	3033	2757	5600	560	3539	3217
	2	6	20"	1/3	1/2	10	5700	570	3770	3427	5500	550	3936	3578	5100	510	4233	3848
ICL6	2	4	22"	1/2	3/4	12.5	7800	624	3708	3370	7600	608	3876	3523	7400	592	4610	4190
	2	6	22"	1/2	3/4	12.5	7500	600	4901	4455	7300	584	5149	4680	6700	536	5493	4993
ICL7	2	4	22"	1/2	3/4	15	9300	620	4427	4025	9200	613	4681	4255	8800	587	5495	4995
	2	6	22"	1/2	3/4	15	9000	600	5881	5346	8800	587	6200	5636	8200	547	6690	6081
ICL5	3	4	20"	1/3	1/2	15	9000	600	4317	3924	8850	590	4549	4135	8400	560	5309	4826
	3	6	20"	1/3	1/2	15	8550	570	5654	5140	8250	550	5904	5367	7650	510	6350	5772
ICL6	3	4	22"	1/2	3/4	18.75	11700	624	5562	5056	11400	608	5813	5284	11100	592	6914	6285
	3	6	22"	1/2	3/4	18.75	11250	600	7351	6682	10950	584	7723	7020	10050	536	8240	7490
ICL7	3	4	22"	1/2	3/4	22.5	13950	620	6641	6037	13800	613	7021	6382	13200	587	8242	7492
	3	6	22"	1/2	3/4	22.5	13500	600	8821	8019	13200	587	9300	8453	12300	547	10035	9122
ICL5	4	4	20"	1/3	1/2	20	12000	600	5756	5232	11800	590	6065	5513	11200	560	7078	6434
	4	6	20"	1/3	1/2	20	11400	570	7539	6853	11000	550	7872	7156	10200	510	8467	7696
ICL6	4	4	22"	1/2	3/4	25	15600	624	7416	6741	15200	608	7751	7046	14800	592	9219	8380
	4	6	22"	1/2	3/4	25	15000	600	9801	8910	14600	584	10297	9360	13400	536	10986	9986
ICL7	4	4	22"	1/2	3/4	30	18600	620	8855	8049	18400	613	9362	8510	17600	587	10989	9989
	4	6	22"	1/2	3/4	30	18000	600	11762	10691	17600	587	12399	11271	16400	547	13380	12162
ICL5	5	4	20"	1/3	1/2	25	15000	600	7194	6540	14750	590	7581	6892	14000	560	8848	8043
	5	6	20"	1/3	1/2	25	14250	570	9424	8566	13750	550	9841	8945	12750	510	10583	9620
ICL6	5	4	22"	1/2	3/4	31.25	19500	624	9270	8426	19000	608	9689	8807	18500	592	11524	10475
	5	6	22"	1/2	3/4	31.25	18750	600	12252	11137	18250	584	12872	11700	16750	536	13733	12483
ICL7	5	4	22"	1/2	3/4	37.5	23250	620	11069	10061	23000	613	11702	10637	22000	587	13737	12487
	5	6	22"	1/2	3/4	37.5	22500	600	14702	13364	22000	587	15499	14089	20500	547	16725	15203
ICL5	6	4	20"	1/3	1/2	30	18000	600	8633	7848	17700	590	9098	8270	16800	560	10618	9652
	6	6	20"	1/3	1/2	30	17100	570	11309	10280	16500	550	11809	10734	15300	510	12700	11544
ICL6	6	4	22"	1/2	3/4	37.5	23400	624	11124	10111	22800	608	11627	10569	22200	592	13829	12570
	6	6	22"	1/2	3/4	37.5	22500	600	14702	13364	21900	584	15446	14040	20100	536	16479	14980
ICL7	6	4	22"	1/2	3/4	45	27900	620	13282	12074	27600	613	14042	12765	26400	587	16484	14984
	6	6	22"	1/2	3/4	45	27000	600	17643	16037	26400	587	18599	16907	24600	547	20070	18244

HIGH VELOCITY - AMMONIA & R-22 RATINGS, FL / RB CIRCUITING, ENGLISH UNITS

ICL7 Models only						3 FPI - FL / RB				4 FPI - FL / RB			
Fans	Rows	Fan Dia.	Horsepower		Face Area (ft ²)	Air Flow		Btuh / °F		Air Flow		Btuh / °F	
			60 Hz	50 Hz		CFM	FPM	Dry	Frosted	CFM	FPM	Dry	Frosted
1	4	24"	3/4	1	7.5	6330	844	2693	2550	6290	839	2832	2682
1	6	24"	3/4	1	7.5	6100	813	3559	3371	6020	803	3770	3571
2	4	24"	3/4	1	15	12660	844	5386	5100	12580	839	5664	5364
2	6	24"	3/4	1	15	12200	813	7119	6741	12040	803	7541	7141
3	4	24"	3/4	1	22.5	18990	844	8078	7650	18870	839	8496	8046
3	6	24"	3/4	1	22.5	18300	813	10678	10112	18060	803	11311	10712
4	4	24"	3/4	1	30	25320	844	10771	10200	25160	839	11328	10728
4	6	24"	3/4	1	30	24400	813	14237	13483	24080	803	15082	14282
5	4	24"	3/4	1	37.5	31650	844	13464	12751	31450	839	14160	1350
5	6	24"	3/4	1	37.5	30500	813	17797	16853	30100	803	18852	17853
6	4	24"	3/4	1	45	37980	844	16157	15301	37740	839	16992	16092
6	6	24"	3/4	1	45	36600	813	21356	20224	36120	803	22622	21423

Note:
Dry Btuh = 0.96 x Wet Btuh

AMMONIA & R-22 RATINGS, FL / RB CIRCUITING, SI UNITS

SI Capacities of Colmac ICL Series Refrigeration Equipment (Generated at -1°C EADB, 0.90 Sens. Heat Ratio)

Model	Fans	Rows	Fan Dia.	kW		Face Area, m ²	3 FPI - FL / RB				4 FPI - FL / RB				6 FPI - FL / RB			
							Air Flow		Watts / °C		Air Flow		Watts / °C		Air Flow		Watts / °C	
							L/s	m/s	Wet	Frosted	L/s	m/s	Wet	Frosted	L/s	m/s	Wet	Frosted
ICL5	1	4	508	0.25	0.37	0.46	1416	3.05	759	690	1392	3.0	800	727	1321	2.84	933	849
	1	6	508	0.25	0.37	0.46	1345	2.90	994	904	1298	2.79	1038	944	1203	2.59	1117	1015
ICL6	1	4	559	0.37	0.56	0.58	1840	3.17	978	889	1793	3.09	1022	929	1746	3.01	1216	1105
	1	6	559	0.37	0.56	0.58	1770	3.05	1293	1175	1722	2.97	1358	1234	1581	2.72	1449	1317
ICL7	1	4	559	0.37	0.56	0.70	2194	3.15	1168	1061	2171	3.12	1235	1122	2076	2.98	1449	1317
	1	6	559	0.37	0.56	0.70	2124	3.05	1551	1410	2076	2.98	1635	1486	1935	2.78	1764	1604
ICL5	2	4	508	0.25	0.37	0.93	2831	3.05	1518	1380	2784	3.00	1600	1454	2643	2.84	1867	1697
	2	6	508	0.25	0.37	0.93	2690	2.90	1988	1808	2595	2.79	2076	1887	2407	2.59	2233	2030
ICL6	2	4	559	0.37	0.56	1.16	3681	3.17	1956	1778	3586	3.09	2044	1858	3492	3.01	2432	2210
	2	6	559	0.37	0.56	1.16	3539	3.05	2585	2350	3445	2.97	2716	2469	3162	2.72	2898	2634
ICL7	2	4	559	0.37	0.56	1.39	4389	3.15	2335	2123	4341	3.12	2469	2244	4153	2.98	2898	2635
	2	6	559	0.37	0.56	1.39	4247	3.05	3102	2820	4153	2.98	3270	2973	3870	2.78	3529	3208
ICL5	3	4	508	0.25	0.37	1.39	4247	3.05	2277	2070	4176	3.00	2400	2181	3964	2.84	2800	2546
	3	6	508	0.25	0.37	1.39	4035	2.90	2983	2711	3893	2.79	3115	2831	3610	2.59	3350	3045
ICL6	3	4	559	0.37	0.56	1.74	5521	3.17	2934	2667	5380	3.09	3067	2788	5238	3.01	3647	3315
	3	6	559	0.37	0.56	1.74	5309	3.05	3878	3525	5167	2.97	4074	3703	4743	2.72	4346	3951
ICL7	3	4	559	0.37	0.56	2.09	6583	3.15	3503	3184	6512	3.12	3704	3367	6229	2.98	4348	3952
	3	6	559	0.37	0.56	2.09	6371	3.05	4653	4230	6229	2.98	4906	4459	5804	2.78	5293	4812
ICL5	4	4	508	0.25	0.37	1.86	5663	3.05	3036	2760	5568	3.00	3199	2908	5285	2.84	3734	3394
	4	6	508	0.25	0.37	1.86	5380	2.90	3977	3615	5191	2.79	4153	3775	4813	2.59	4466	4060
ICL6	4	4	559	0.37	0.56	2.32	7362	3.17	3912	3556	7173	3.09	4089	3717	6984	3.01	4863	4421
	4	6	559	0.37	0.56	2.32	7079	3.05	5170	4700	6890	2.97	5432	4938	6323	2.72	5795	5268
ICL7	4	4	559	0.37	0.56	2.79	8777	3.15	4671	4246	8683	3.12	4938	4489	8305	2.98	5797	5269
	4	6	559	0.37	0.56	2.79	8494	3.05	6204	5640	8305	2.98	6541	5945	7739	2.78	7058	6416
ICL5	5	4	508	0.25	0.37	2.32	7079	3.05	3795	3450	6961	3.00	3999	3635	6607	2.84	4667	4243
	5	6	508	0.25	0.37	2.32	6725	2.90	4971	4519	6489	2.79	5191	4719	6017	2.59	5583	5075
ICL6	5	4	559	0.37	0.56	2.90	9202	3.17	4890	4445	8966	3.09	5111	4646	8730	3.01	6079	5526
	5	6	559	0.37	0.56	2.90	8848	3.05	6463	5875	8612	2.97	6790	6172	7904	2.72	7244	6585
ICL7	5	4	559	0.37	0.56	3.48	10972	3.15	5839	5307	10854	3.12	6173	5611	10382	2.98	7246	6587
	5	6	559	0.37	0.56	3.48	10618	3.05	7755	7050	10382	2.98	8176	7432	9674	2.78	8822	8020
ICL5	6	4	508	0.25	0.37	2.79	8494	3.05	4554	4140	8353	3.00	4799	4362	7928	2.84	5601	5091
	6	6	508	0.25	0.37	2.79	8069	2.90	5965	5423	7786	2.79	6229	5662	7220	2.59	6699	6090
ICL6	6	4	559	0.37	0.56	3.48	11042	3.17	5868	5334	10759	3.09	6133	5575	10476	3.01	7295	6631
	6	6	559	0.37	0.56	3.48	10618	3.05	7755	7050	10335	2.97	8148	7406	9485	2.72	8693	7902
ICL7	6	4	559	0.37	0.56	4.18	13166	3.15	7006	6369	13024	3.12	7407	6733	12458	2.98	8695	7904
	6	6	559	0.37	0.56	4.18	12741	3.05	9306	8460	12458	2.98	9811	8918	11609	2.78	10587	9624

AMMONIA & R-22 RATINGS, FL / RB / RT CIRCUITING, SI UNITS

ICL7 Models only						3 FPI - FL / RB				4 FPI - FL / RB			
Fans	Rows	Fan Dia. (mm)	kWatts		Face Area, m ²	Air Flow		Watts / °C		Air Flow		Watts / °C	
			60 Hz	50 Hz		L/s	m/s	Dry	Frosted	L/s	m/s	Dry	Frosted
1	4	610	0.56	0.75	0.70	2987	4.29	1420	1345	2968	4.26	1494	1415
1	6	610	0.56	0.75	0.70	2879	4.13	1878	1778	2841	4.08	1989	1883
2	4	610	0.56	0.75	1.39	5974	4.29	2841	2690	5937	4.26	2988	2829
2	6	610	0.56	0.75	1.39	5757	4.13	3755	3556	5682	4.08	3978	3767
3	4	610	0.56	0.75	2.09	8961	4.29	4261	4036	8905	4.26	4482	4244
3	6	610	0.56	0.75	2.09	8636	4.13	5633	5334	8523	4.08	5967	5650
4	4	610	0.56	0.75	2.79	11949	4.29	5682	5381	11873	4.26	5976	5659
4	6	610	0.56	0.75	2.79	11514	4.13	7510	7112	11363	4.08	7955	7534
5	4	610	0.56	0.75	3.48	14936	4.29	7102	6726	14841	4.26	7470	7074
5	6	610	0.56	0.75	3.48	14393	4.13	9388	8890	14204	4.08	9944	9417
6	4	610	0.56	0.75	4.18	17923	4.29	8523	8071	17810	4.26	8963	8488
6	6	610	0.56	0.75	4.18	17272	4.13	11265	10668	17045	4.08	11933	11301

Note:
Dry Watts = 0.96 x Wet Watts

AMMONIA & R-22 RATINGS, DX / RT CIRCUITING, ENGLISH UNITS

English Capacities of Colmac ICL Series Refrigeration Equipment
(Generated at 30°F EADB, 0.90 Sens. Heat Ratio)

Model	Fans	Rows	Fan Dia.	Horsepower		AFace (ft ²)	4 Fins Per Inch						6 Fins Per Inch					
							Air Flow		DX		RT		Air Flow		DX		RT	
									Wet	Frosted	Wet	Frosted			Wet	Frosted	Wet	Frosted
60 Hz	50 Hz	CFM	FPM	Wet	Frosted	Wet	Frosted	Wet	Frosted	CFM	FPM	Wet	Frosted	Wet	Frosted			
ICL5	1	4	20"	1/3	1/2	5	2850	570	1315	1195	1478	1344	2750	550	1552	1410	1746	1587
	1	6	20"	1/3	1/2	5	2650	530	1576	1433	1914	1740	2500	500	1714	1558	2085	1896
ICL6	1	4	22"	1/2	3/4	6.25	3850	616	1744	1586	1957	1779	3650	584	2031	1846	2282	2074
	1	6	22"	1/2	3/4	6.25	3450	552	2034	1849	2467	2242	3300	528	2236	2033	2716	2469
ICL7	1	4	22"	1/2	3/4	7.5	4550	607	2069	1881	2322	2110	4350	580	2424	2204	2724	2476
	1	6	22"	1/2	3/4	7.5	4200	560	2469	2245	2993	2720	4050	540	2731	2483	3314	3013
ICL5	2	4	20"	1/3	1/2	10	5700	570	2630	2391	2957	2688	5500	550	3103	2821	3492	3175
	2	6	20"	1/3	1/2	10	5300	530	3152	2865	3827	3479	5000	500	3427	3115	4171	3791
ICL6	2	4	22"	1/2	3/4	12.5	7700	616	3489	3171	3913	3557	7300	584	4062	3693	4563	4148
	2	6	22"	1/2	3/4	12.5	6900	552	4069	3699	4934	4485	6600	528	4472	4065	5431	4937
ICL7	2	4	22"	1/2	3/4	15	9100	607	4138	3761	4643	4221	8700	580	4849	4408	5448	4953
	2	6	22"	1/2	3/4	15	8400	560	4939	4489	5985	5441	8100	540	5463	4966	6629	6025
ICL5	3	4	20"	1/3	1/2	15	8550	570	3945	3586	4435	4031	8250	550	4655	4231	5239	4762
	3	6	20"	1/3	1/2	15	7950	530	4728	4298	5741	5219	7500	500	5141	4673	6256	5687
ICL6	3	4	22"	1/2	3/4	18.75	11550	616	5233	4757	5870	5336	10950	584	6093	5539	6845	6222
	3	6	22"	1/2	3/4	18.75	10350	552	6103	5548	7401	6727	9900	528	6709	6098	8147	7406
ICL7	3	4	22"	1/2	3/4	22.5	13650	607	6207	5642	6965	6331	13050	580	7273	6612	8173	7429
	3	6	22"	1/2	3/4	22.5	12600	560	7408	6734	8978	8161	12150	540	8194	7448	9943	9038
ICL5	4	4	20"	1/3	1/2	20	11400	570	5260	4781	5913	5375	11000	550	6206	5641	6985	6349
	4	6	20"	1/3	1/2	20	10600	530	6304	5730	7655	6958	10000	500	6855	6231	8341	7582
ICL6	4	4	22"	1/2	3/4	25	15400	616	6977	6342	7826	7114	14600	584	8124	7385	9127	8296
	4	6	22"	1/2	3/4	25	13800	552	8138	7397	9868	8970	13200	528	8945	8131	10863	9874
ICL7	4	4	22"	1/2	3/4	30	18200	607	8276	7523	9286	8441	17400	580	9698	8815	10897	9905
	4	6	22"	1/2	3/4	30	16800	560	9877	8978	11971	10881	16200	540	10925	9931	13257	12051
ICL5	5	4	20"	1/3	1/2	25	14250	570	6575	5976	7391	6719	13750	550	7758	7052	8731	7937
	5	6	20"	1/3	1/2	25	13250	530	7880	7163	9568	8698	12500	500	8568	7789	10427	9478
ICL6	5	4	22"	1/2	3/4	31.25	19250	616	8722	7928	9783	8893	18250	584	10156	9231	11409	10370
	5	6	22"	1/2	3/4	31.25	17250	552	10172	9247	12334	11212	16500	528	11181	10164	13578	12343
ICL7	5	4	22"	1/2	3/4	37.5	22750	607	10345	9403	11608	10552	21750	580	12122	11019	13621	12381
	5	6	22"	1/2	3/4	37.5	21000	560	12346	11223	14963	13602	20250	540	13657	12414	16572	15064
ICL5	6	4	20"	1/3	1/2	30	17100	570	7890	7172	8870	8063	16500	550	9309	8462	10477	9524
	6	6	20"	1/3	1/2	30	15900	530	9456	8596	11482	10437	15000	500	10282	9346	12512	11374
ICL6	6	4	22"	1/2	3/4	37.5	23100	616	10466	9514	11739	10671	21900	584	12187	11078	13690	12445
	6	6	22"	1/2	3/4	37.5	20700	552	12207	11096	14801	13454	19800	528	13417	12196	16294	14811
ICL7	6	4	22"	1/2	3/4	45	27300	607	12414	11284	13930	12662	26100	580	14547	13223	16345	14858
	6	6	22"	1/2	3/4	45	25200	560	14816	13468	17956	16322	24300	540	16388	14897	19886	18076

HIGH VELOCITY - AMMONIA & R-22 RATINGS, DX / RT CIRCUITING, ENGLISH UNITS

ICL7 Models only						4 Fins Per Inch							
Fans	Rows	Fan Dia.	Horsepower		AFace (ft ²)	DX		RT		DX		RT	
						Air Flow		Btuh / °F		Btuh / °F		Btuh / °F	
						CFM	FPM	Wet	Frosted	Wet	Frosted	Wet	Frosted
1	4	24"	3/4	1	7.5	6150	820	2499	2367	2901	2637		
1	6	24"	3/4	1	7.5	5810	775	3054	2892	3824	3476		
2	4	24"	3/4	1	15	12300	820	4998	4733	5802	5274		
2	6	24"	3/4	1	15	11620	775	6108	5784	7647	6952		
3	4	24"	3/4	1	22.5	18450	820	7497	7100	8704	7912		
3	6	24"	3/4	1	22.5	17430	775	9162	8677	11471	10427		
4	4	24"	3/4	1	30	24600	820	9996	9466	11605	10549		
4	6	24"	3/4	1	30	23240	775	12216	11569	15295	13903		
5	4	24"	3/4	1	37.5	30750	820	12495	11833	14506	13186		
5	6	24"	3/4	1	37.5	29050	775	15271	14461	19119	17379		
6	4	24"	3/4	1	45	36900	820	14994	14200	17407	15823		
6	6	24"	3/4	1	45	34860	775	18325	17353	22942	20855		

Note:
Dry Btuh = 0.96 x Wet Btuh

AMMONIA & R-22 RATINGS, DX / RT CIRCUITING, SI UNITS

SI Capacities of Colmac ICL Series Refrigeration Equipment
(Generated at -1°C EADB, 0.90 Sens. Heat Ratio)

Model	Fans	Rows	Fan Dia. (mm)	kWatts		AFace (m ²)	4 Fins Per Inch						6 Fins Per Inch					
							DX		RT		DX		RT					
							Air Flow		Watts / °C		Watts / °C		Air Flow		Watts / °C		Watts / °C	
L/s	m/s	Wet	Frosted	Wet	Frosted	L/s	m/s	Wet	Frosted	Wet	Frosted	L/s	m/s	Wet	Frosted	Wet	Frosted	
ICL5	1	4	508	0.25	0.37	0.46	1345	2.90	694	631	780	709	1298	2.79	818	744	921	837
	1	6	508	0.25	0.37	0.46	1251	2.69	831	756	1009	918	1180	2.54	904	822	1100	1000
ICL6	1	4	559	0.37	0.56	0.58	1817	3.13	920	836	1032	938	1722	2.97	1071	974	1204	1094
	1	6	559	0.37	0.56	0.58	1628	2.80	1073	976	1301	1183	1557	2.68	1180	1072	1433	1302
ICL7	1	4	559	0.37	0.56	0.70	2147	3.08	1091	992	1225	1113	2053	2.95	1279	1163	1437	1306
	1	6	559	0.37	0.56	0.70	1982	2.84	1303	1184	1579	1435	1911	2.74	1441	1310	1748	1589
ICL5	2	4	508	0.25	0.37	0.93	2690	2.90	1387	1261	1560	1418	2595	2.79	1637	1488	1842	1675
	2	6	508	0.25	0.37	0.93	2501	2.69	1663	1511	2019	1835	2360	2.54	1808	1643	2200	2000
ICL6	2	4	559	0.37	0.56	1.16	3634	3.13	1840	1673	2064	1876	3445	2.97	2143	1948	2407	2188
	2	6	559	0.37	0.56	1.16	3256	2.80	2146	1951	2603	2366	3115	2.68	2359	2145	2865	2604
ICL7	2	4	559	0.37	0.56	1.39	4294	3.08	2183	1984	2449	2226	4106	2.95	2558	2325	2874	2612
	2	6	559	0.37	0.56	1.39	3964	2.84	2605	2368	3157	2870	3822	2.74	2882	2619	3497	3178
ICL5	3	4	508	0.25	0.37	1.39	4035	2.90	2081	1892	2339	2127	3893	2.79	2455	2232	2763	2512
	3	6	508	0.25	0.37	1.39	3752	2.69	2494	2267	3028	2753	3539	2.54	2712	2465	3300	3000
ICL6	3	4	559	0.37	0.56	1.74	5450	3.13	2760	2509	3096	2815	5167	2.97	3214	2922	3611	3282
	3	6	559	0.37	0.56	1.74	4884	2.80	3220	2927	3904	3549	4672	2.68	3539	3217	4298	3906
ICL7	3	4	559	0.37	0.56	2.09	6441	3.08	3274	2976	3674	3340	6158	2.95	3837	3488	4311	3919
	3	6	559	0.37	0.56	2.09	5946	2.84	3908	3552	4736	4305	5734	2.74	4322	3929	5245	4768
ICL5	4	4	508	0.25	0.37	1.86	5380	2.90	2775	2522	3119	2835	5191	2.79	3274	2976	3685	3349
	4	6	508	0.25	0.37	1.86	5002	2.69	3325	3023	4038	3670	4719	2.54	3616	3287	4400	4000
ICL6	4	4	559	0.37	0.56	2.32	7267	3.13	3681	3346	4128	3753	6890	2.97	4286	3896	4814	4376
	4	6	559	0.37	0.56	2.32	6512	2.80	4293	3902	5205	4731	6229	2.68	4718	4289	5730	5209
ICL7	4	4	559	0.37	0.56	2.79	8589	3.08	4365	3968	4899	4453	8211	2.95	5116	4650	5748	5225
	4	6	559	0.37	0.56	2.79	7928	2.84	5210	4736	6315	5740	7645	2.74	5763	5239	6993	6357
ICL5	5	4	508	0.25	0.37	2.32	6725	2.90	3468	3153	3899	3544	6489	2.79	4092	3720	4606	4187
	5	6	508	0.25	0.37	2.32	6253	2.69	4157	3779	5047	4588	5899	2.54	4520	4109	5500	5000
ICL6	5	4	559	0.37	0.56	2.90	9084	3.13	4601	4182	5160	4691	8612	2.97	5357	4870	6018	5470
	5	6	559	0.37	0.56	2.90	8140	2.80	5366	4878	6506	5914	7786	2.68	5898	5361	7163	6511
ICL7	5	4	559	0.37	0.56	3.48	10736	3.08	5457	4960	6123	5566	10264	2.95	6395	5813	7185	6531
	5	6	559	0.37	0.56	3.48	9910	2.84	6513	5920	7893	7175	9556	2.74	7204	6548	8741	7946
ICL5	6	4	508	0.25	0.37	2.79	8069	2.90	4162	3783	4679	4253	7786	2.79	4911	4464	5527	5024
	6	6	508	0.25	0.37	2.79	7503	2.69	4988	4534	6057	5506	7079	2.54	5424	4930	6600	6000
ICL6	6	4	559	0.37	0.56	3.48	10901	3.13	5521	5018	6193	5629	10335	2.97	6429	5844	7222	6564
	6	6	559	0.37	0.56	3.48	9768	2.80	6439	5853	7808	7097	9344	2.68	7078	6434	8595	7813
ICL7	6	4	559	0.37	0.56	4.18	12883	3.08	6548	5952	7348	6679	12317	2.95	7674	6975	8622	7837
	6	6	559	0.37	0.56	4.18	11892	2.84	7815	7104	9472	8610	11467	2.74	8645	7858	10490	9535

HIGH VELOCITY - AMMONIA & R-22 RATINGS, DX / RT CIRCUITING, SI UNITS

ICL7 Models only						4 Fins Per Inch					
		DX		RT				DX		RT	
Fans	Rows	FanDia. (mm)	kWatts		AFace m ²	Air Flow		Watts / °C		Watts / °C	
			60 Hz	50 Hz		L/s	m/s	Dry	Frosted	Dry	Frosted
1	4	610	0.56	0.75	0.70	2902	4.17	1318	1198	1530	1391
1	6	610	0.56	0.75	0.70	2742	3.94	1611	1464	2017	1833
2	4	610	0.56	0.75	1.39	5804	4.17	2636	2397	3061	2782
2	6	610	0.56	0.75	1.39	5483	3.94	3222	2929	4034	3667
3	4	610	0.56	0.75	2.09	8707	4.17	3955	3595	4591	4173
3	6	610	0.56	0.75	2.09	8225	3.94	4833	4393	6051	5500
4	4	610	0.56	0.75	2.79	11609	4.17	5273	4793	6122	5564
4	6	610	0.56	0.75	2.79	10967	3.94	6444	5858	8068	7334
5	4	610	0.56	0.75	3.48	14511	4.17	6591	5991	7652	6956
5	6	610	0.56	0.75	3.48	13709	3.94	8055	7322	10085	9167
6	4	610	0.56	0.75	4.18	17413	4.17	7909	7190	9182	8347
6	6	610	0.56	0.75	4.18	16450	3.94	9666	8787	12102	11001

Note:
Dry Btuh = 0.96 x Wet Watts

Refrigerant Connection Sizes (IPS, inches)

Ammonia		Liquid Line Sizes			Suction Sizes - Flooded and Liquid Overfeed						Suction Sizes - DX		
Capacity Tons	Lb/min, 4:1 (Note 1 & 2)	4:1 Recirc.	Flooded	DX	Saturated Suction Temp, °F (°C)						SST, °F / °C		
(kW)					30° (-1°)	20° (-7°)	0° (-18°)	-20° (-29°)	-30° (-34°)	-40° (-40°)	30° (-1°)	20° (-7°)	0° (-18°)
1 (3.5)	1.76	1/2	1	Note 3	1 1/4	1 1/4	1 1/4	1 1/4	1 1/2	1 1/2	1	1	1
2 (7)	3.52	1/2	1	"	1 1/4	1 1/4	1 1/4	1 1/2	2	2	1	1	1
5 (17.6)	8.8	3/4	1 1/2	"	1 1/2	1 1/2	1 1/2	2	2 1/2	2 1/2	1	1 1/4	1 1/4
7 (24.6)	12.32	3/4	1 1/2	"	1 1/2	1 1/2	2	2 1/2	2 1/2	3	1 1/4	1 1/4	1 1/2
10 (35.2)	17.6	3/4	2	"	2	2	2 1/2	2 1/2	3	3	1 1/4	1 1/2	2
15 (52.8)	26.4	3/4	2 1/2	"	2 1/2	2 1/2	2 1/2	3	4	4	1 1/2	2	2
20 (70.3)	35.2	1	3	"	3	3	3	4	4	5	2	2	2 1/2
25 (87.9)	44	1	3	"	3	3	3	4	5	5	2	2	2 1/2
30 (105.5)	52.8	1	3	"	3	3	4	4	5	5	2	2 1/2	3
40 (140.7)	70.4	1 1/4	4	"	4	4	4	5	5	6	2 1/2	2 1/2	3
50 (175.9)	88	1 1/4	4	"	4	4	5	5	5	6	2 1/2	3	4
60 (211)	105.6	1 1/4	4	"	4	4	5	5	6	6	3	3	4
70 (246.2)	123.2	1 1/4	4	"	4	4	5	6	6	8	3	3	4
80 (281.4)	140.8	1 1/2	4	"	4	5	5	6	6	8	3	4	4
90 (316.5)	158.4	1 1/2	4	"	4	5	5	6	6	8	3	4	4
100 (351.7)	176	1 1/2	5	"	5	5	5	6	8	8	4	4	4

Refrigerant Connection Sizes (ODS, inches)

R-22		3:1 Liquid Overfeed								Direct Expansion					
Capacity Tons	Lb/min, 3:1 (Note 1 & 2)	Liquid	Suction Size, Type 'L' Cu @ SST (°F/°C)						Liquid	Suction Size, Type 'L' Cu @ SST (°F/°C)					
(kW)			30° (-1°)	20° (-7°)	0° (-18°)	-20° (-29°)	-30° (-34°)	-40° (-40°)		30° (-1°)	20° (-7°)	0° (-18°)	-20° (-29°)	-30° (-34°)	-40° (-40°)
1 (3.5)	9.4	1/2	1 1/8	1 3/8	1 3/8	1 5/8	1 5/8	2 1/8	1/2	7/8	1 1/8	1 1/8	1 3/8	1 3/8	1 5/8
2 (7)	18.8	5/8	1 3/8	1 5/8	1 5/8	2 1/8	2 5/8	2 5/8	1/2	1 1/8	1 3/8	1 3/8	1 5/8	2 1/8	2 1/8
5 (17.6)	47.1	7/8	2 5/8	2 1/8	2 5/8	3 1/8	3 1/8	3 1/8	5/8	1 5/8	1 5/8	2 1/8	2 5/8	2 5/8	2 5/8
7 (24.6)	65.9	1 1/8	2 5/8	2 5/8	2 5/8	3 1/8	3 5/8	3 5/8	7/8	2 1/8	2 1/8	2 1/8	2 5/8	3 1/8	3 1/8
10 (35.2)	94.2	1 1/8	2 5/8	2 5/8	3 1/8	3 5/8	3 5/8	4 1/8	7/8	2 1/8	2 1/8	2 5/8	3 1/8	3 1/8	3 5/8
15 (52.8)	141.3	1 3/8	3 1/8	3 1/8	3 5/8	4 1/8	4 1/8	**5	7/8	2 5/8	2 5/8	3 1/8	3 5/8	3 5/8	4 1/8
20 (70.3)	188.4	1 3/8	3 1/8	3 1/8	3 5/8	4 1/8	**5	**6	1 1/8	2 5/8	2 5/8	3 1/8	3 5/8	4 1/8	**5
25 (87.9)	235.5	1 5/8	3 5/8	4 1/8	4 1/8	**5	**6	**6	1 1/8	3 1/8	3 1/8	3 5/8	4 1/8	**5	**5
30 (105.5)	282.6	1 5/8	3 5/8	4 1/8	4 1/8	**6	**6	**8	1 1/8	3 1/8	3 1/8	3 5/8	**5	**5	**6
40 (140.7)	376.8	2 1/8	4 1/8	4 1/8	**5	**6	**8	**8	1 1/8	3 5/8	3 5/8	4 1/8	**5	**6	**6
50 (175.9)	471	2 1/8	4 1/8	**5	**6	**8	**8	**10	1 3/8	3 5/8	4 1/8	**5	**6	**6	**8
60 (211)	565.2	2 1/8	**5	**5	**6	**8	**8	**10	1 3/8	4 1/8	4 1/8	**5	**6	**6	**8
70 (246.2)	659.4	2 1/8	**5	**6	**6	**8	**10	**10	1 3/8	4 1/8	**5	**5	**6	**8	**8
80 (281.4)	753.6	2 1/8	**5	**6	**8	**10	**10	**10	1 5/8	4 1/8	**5	**6	**8	**8	**8

- Notes:
1. Lb/min x .00756 = kg/s
 2. At 95°F (35°C) Liquid Temp, -30°F (-34°C) Suction Temp.
 3. DX Liquid size to be determined at Factory.
 4. Suction Sizes based on .5°F / 100ft (0.9°C / 100m)
 5. Tons Refrigeration x 3.517 = kW.
 6. ** Use Steel, SCH 40, IPS inches.

Table 3 Defrost and Drainpan Connections

Fans	Defrost Supply Connections								Drainpan Connections	
	(Quantity) IPS, inches		(Quantity) ODS, inches			(Quantity) ODS, inches			(Quantity) IPS, inches	
	Water Defrost	NH3 Hot Gas Defrost ICL5	ICL6	ICL7	R-22 Hot Gas Defrost ICL5	ICL6	ICL7	Air & HG Defrost	Water Defrost	
1	(1) 1 1/4	(1) 3/4	(1) 3/4	(1) 3/4	(1) 3/4	(1) 3/4	(1) 3/4	(1) 1 1/4	3	
2	(2) 1 1/4	(1) 3/4	(1) 3/4	(1) 1 1/4	(1) 3/4	(1) 3/4	(1) 1 1/4	(1) 1 1/4	3	
3	(3) 1 1/4	(1) 1"	(1) 1 1/4	(1) 1 1/4	(1) 1"	(1) 1 1/4	(1) 1 1/4	(2) 1 1/4	3	
4	(4) 1 1/4	(1) 1 1/4	(1) 1 1/4	(1) 1 1/4	(1) 1 1/4	(1) 1 1/4	(1) 1 1/4	(2) 1 1/4	3	
5	(5) 1 1/4	(1) 1 1/4	(1) 1 1/2	(1) 1 1/2	(1) 1 1/4	(1) 1 1/2	(1) 1 1/2	(2) 1 1/4	3	
6	(6) 1 1/4	(1) 1 1/4	(1) 1 1/2	(1) 1 1/2	(1) 1 1/4	(1) 1 1/2	(1) 1 1/2	(2) 1 1/4	3	

Specifications, English & SI Units ICL5 Flooded & Recirc. Bottom Feed

Model	Total Face Area		Total Surface Area		Water Defrost		Dry Weight				Internal Volume			
	ft ²	m ²	ft ²	m ²	GPM@ 5psi	L/s@ 34kPa	R-22		NH3		R-22		NH3	
314	5	0.46	298.4	27.72	8.7	0.55	259	117	236	107	0.41	11.47	0.38	10.71
316	5	0.46	447.6	41.58	13.0	0.82	314	142	280	127	0.61	17.18	0.57	16.05
324	10	0.93	596.8	55.44	17.3	1.09	439	199	396	180	0.81	22.94	0.76	21.43
326	10	0.93	895.1	83.16	26.0	1.64	538	244	478	217	1.21	34.36	1.13	32.10
334	15	1.39	895.2	83.16	26.0	1.64	619	281	557	253	1.22	34.41	1.14	32.14
336	15	1.39	1342.7	124.74	39.0	2.46	763	346	676	307	1.82	51.54	1.70	48.14
344	20	1.86	1193.5	110.88	34.7	2.19	798	362	717	325	1.62	45.88	1.51	42.86
346	20	1.86	1790.3	166.32	52.0	3.28	987	448	873	396	2.43	68.72	2.27	64.19
354	25	2.32	1491.9	138.60	43.3	2.73	978	444	878	398	2.03	57.35	1.89	53.57
356	25	2.32	2237.8	207.89	65.0	4.10	1212	550	1071	486	3.03	85.90	2.83	80.24
364	30	2.79	1790.3	166.32	52.0	3.28	1158	525	1038	471	2.43	68.82	2.27	64.29
366	30	2.79	2685.4	249.47	78.0	4.92	1436	651	1269	576	3.64	103.08	3.4	96.29

414	5	0.46	390.5	36.28	8.7	0.55	267	121	244	111	0.41	11.47	0.38	10.71
416	5	0.46	585.7	54.41	13.0	0.82	325	147	292	132	0.61	17.18	0.57	16.05
424	10	0.93	781.0	72.55	17.3	1.09	455	206	416	189	0.81	22.94	0.76	21.43
426	10	0.93	1171.4	108.83	26.0	1.64	557	253	502	228	1.21	34.36	1.13	32.10
434	15	1.39	1171.5	108.83	26.0	1.64	642	291	588	267	1.22	34.41	1.14	32.14
436	15	1.39	1757.2	163.24	39.0	2.46	790	358	711	323	1.82	51.54	1.70	48.14
444	20	1.86	1561.9	145.10	34.7	2.19	830	376	761	345	1.62	45.88	1.51	42.86
446	20	1.86	2342.9	217.65	52.0	3.28	1022	464	921	418	2.43	68.72	2.27	64.19
454	25	2.32	1952.4	181.38	43.3	2.73	1017	461	933	423	2.03	57.35	1.89	53.57
456	25	2.32	2928.6	272.07	65.0	4.10	1255	569	1130	513	3.03	85.90	2.83	80.24
464	30	2.79	2342.9	217.66	52.0	3.28	1205	547	1105	501	2.43	68.82	2.27	64.29
466	30	2.79	3514.3	326.48	78.0	4.92	1487	675	1340	608	3.64	103.08	3.4	96.29

614	5	0.46	575.3	53.45	8.7	0.55	275	125	252	114	0.41	11.47	0.38	10.71
616	5	0.46	863.0	80.17	13.0	0.82	337	153	303	137	0.61	17.18	0.57	16.05
624	10	0.93	1150.6	106.89	17.3	1.09	470	213	432	196	0.81	22.94	0.76	21.43
626	10	0.93	1726.0	160.34	26.0	1.64	581	264	524	238	1.21	34.36	1.13	32.10
634	15	1.39	1726.0	160.34	26.0	1.64	665	302	612	278	1.22	34.41	1.14	32.14
636	15	1.39	2589.0	240.51	39.0	2.46	825	374	745	338	1.82	51.54	1.70	48.14
644	20	1.86	2301.3	213.79	34.7	2.19	861	391	791	359	1.62	45.88	1.51	42.86
646	20	1.86	3451.9	320.68	52.0	3.28	1068	484	967	439	2.43	68.72	2.27	64.19
654	25	2.32	2876.6	267.23	43.3	2.73	1056	479	971	440	2.03	57.35	1.89	53.57
656	25	2.32	4314.9	400.86	65.0	4.10	1312	595	1188	539	3.03	85.90	2.83	80.24
664	30	2.79	3451.9	320.68	52.0	3.28	1241	563	1151	522	2.43	68.82	2.27	64.29
666	30	2.79	5177.9	481.03	78.0	4.92	1556	706	1409	639	3.64	103.08	3.4	96.29

ICL5 Direct Expansion & Recirc. Top Feed

Model	Total Face Area		Total Surface Area		Water Defrost		Dry Weight				Internal Volume			
	ft ²	m ²	ft ²	m ²	GPM@ 5psi	L/s@ 34kPa	R-22		NH3		R-22		NH3	
414	5	0.46	197.6	18.36	4.5	0.28	216	98	208	94	0.33	9.44	0.28	7.93
416	5	0.46	296.2	27.51	6.5	0.41	253	115	242	110	0.50	14.07	0.42	11.89
424	10	0.93	395.2	36.71	9.0	0.57	364	165	351	159	0.67	18.88	0.56	15.86
426	10	0.93	592.3	55.03	13.0	0.82	430	195	412	187	0.99	28.13	0.84	23.79
434	15	1.39	592.8	55.07	13.5	0.85	511	232	494	224	1.00	28.32	0.84	23.79
436	15	1.39	888.5	82.54	19.5	1.23	607	275	582	264	1.49	42.20	1.26	35.68
444	20	1.86	790.3	73.42	18.0	1.14	659	299	637	289	1.33	37.76	1.12	31.72
446	20	1.86	1184.7	110.06	26.0	1.64	783	355	752	341	1.99	56.26	1.68	47.58
454	25	2.32	987.9	91.78	22.5	1.42	806	366	780	354	1.67	47.20	1.40	39.65
456	25	2.32	1480.8	137.57	32.5	2.05	960	435	922	418	2.48	70.33	2.10	59.47
464	30	2.79	1185.5	110.13	27.0	1.70	954	433	923	419	2	56.64	1.68	47.58
466	30	2.79	1777	165.08	39.0	2.46	1137	516	1092	495	2.98	84.39	2.52	71.37

614	5	0.46	282.1	26.21	4.5	0.28	219	99	211	96	0.33	9.44	0.28	7.93
616	5	0.46	423.2	39.32	6.5	0.41	258	117	247	112	0.50	14.07	0.42	11.89
624	10	0.93	564.3	52.42	9.0	0.57	370	168	358	162	0.67	18.88	0.56	15.86
626	10	0.93	846.4	78.63	13.0	0.82	440	200	423	192	0.99	28.13	0.84	23.79
634	15	1.39	846.4	78.63	13.5	0.85	521	236	505	229	1.00	28.32	0.84	23.79
636	15	1.39	1269.6	117.95	19.5	1.23	623	283	598	271	1.49	42.20	1.26	35.68
644	20	1.86	1128.5	104.84	18.0	1.14	673	305	651	295	1.33	37.76	1.12	31.72
646	20	1.86	1692.8	157.26	26.0	1.64	805	365	774	351	1.99	56.26	1.68	47.58
654	25	2.32	1410.7	131.05	22.5	1.42	824	374	798	362	1.67	47.20	1.40	39.65
656	25	2.32	2116.0	196.58	32.5	2.05	988	448	949	430	2.48	70.33	2.10	59.47
664	30	2.79	1692.8	157.26	27.0	1.70	975	442	945	429	2	56.64	1.68	47.58
666	30	2.79	2539.2	235.89	39.0	2.46	1170	531	1125	510	2.98	84.39	2.52	71.37

ICL6 Flooded & Recirc. Bottom Feed

Model	Total Face Area		Total Surface Area		Water Defrost		Dry Weight				Internal Volume			
	ft2 m2		ft2 m2		GPM@	L/s@	R-22		NH3		R-22		NH3	
	ft2	m2	ft2	m2	5psi	34kPa	lb	kg	lb	kg	ft3	L	ft3	L
314	6.2	0.58	373.0	34.65	8.7	0.55	290	132	261	118	0.51	14.35	0.47	13.40
316	6.2	0.58	559.5	51.97	13.0	0.82	356	161	313	142	0.76	21.48	0.71	20.06
324	12.5	1.16	746.0	69.30	17.4	1.10	486	220	438	199	1.01	28.70	0.95	26.81
326	12.5	1.16	1118.9	103.95	26.0	1.64	601	273	530	240	1.52	42.95	1.42	40.12
334	18.7	1.74	1119.0	103.95	26.1	1.65	683	310	616	279	1.52	43.05	1.42	40.21
336	18.7	1.74	1678.4	155.92	39.0	2.46	846	384	746	338	2.28	64.43	2.13	60.18
344	25	2.32	1491.9	138.60	34.8	2.20	879	399	793	360	2.03	57.40	1.89	53.62
346	25	2.32	2237.9	207.90	52.0	3.28	1091	495	963	437	3.03	85.90	2.83	80.24
354	31.2	2.90	1864.9	173.25	43.5	2.74	1076	488	971	440	2.53	71.74	2.37	67.02
356	31.2	2.90	2797.3	259.87	65.0	4.10	1336	606	1179	535	3.79	107.38	3.54	100.30
364	37.5	3.48	2237.9	207.90	52.2	3.29	1272	577	1148	521	3.04	86.09	2.84	80.43
366	37.5	3.48	3356.8	311.85	78.0	4.92	1581	717	1396	633	4.55	128.86	4.25	120.36

414	6.2	0.58	488.1	45.34	8.7	0.55	300	136	271	123	0.51	14.35	0.47	13.40
416	6.2	0.58	732.2	68.02	13.0	0.82	370	168	327	148	0.76	21.48	0.71	20.06
424	12.5	1.16	976.2	90.69	17.4	1.10	506	230	458	208	1.01	28.70	0.95	26.81
426	12.5	1.16	1464.3	136.03	26.0	1.64	630	286	559	254	1.52	42.95	1.42	40.12
434	18.7	1.74	1464.3	136.03	26.1	1.65	713	323	645	293	1.52	43.05	1.42	40.21
436	18.7	1.74	2196.5	204.05	39.0	2.46	890	404	791	359	2.28	64.43	2.13	60.18
444	25	2.32	1952.4	181.38	34.8	2.20	919	417	833	378	2.03	57.40	1.89	53.62
446	25	2.32	2928.6	272.07	52.0	3.28	1150	522	1022	464	3.03	85.90	2.83	80.24
454	31.2	2.90	2440.5	226.72	43.5	2.74	1126	511	1020	463	2.53	71.74	2.37	67.02
456	31.2	2.90	3660.8	340.08	65.0	4.10	1410	640	1253	568	3.79	107.38	3.54	100.30
464	37.5	3.48	2928.6	272.07	52.2	3.29	1332	604	1207	547	3.04	86.09	2.84	80.43
466	37.5	3.48	4392.9	408.10	78.0	4.92	1670	758	1485	674	4.55	128.86	4.25	120.36

614	6.2	0.58	719.2	66.81	8.7	0.55	310	141	280	127	0.51	14.35	0.47	13.40
616	6.2	0.58	1078.7	100.21	13.0	0.82	385	175	342	155	0.76	21.48	0.71	20.06
624	12.5	1.16	1438.3	133.62	17.4	1.10	526	239	477	216	1.01	28.70	0.95	26.81
626	12.5	1.16	2157.5	200.43	26.0	1.64	659	299	588	267	1.52	42.95	1.42	40.12
634	18.7	1.74	2157.5	200.43	26.1	1.65	742	337	674	306	1.52	43.05	1.42	40.21
636	18.7	1.74	3236.2	300.64	39.0	2.46	933	423	834	378	2.28	64.43	2.13	60.18
644	25	2.32	2876.6	267.24	34.8	2.20	957	434	870	395	2.03	57.40	1.89	53.62
646	25	2.32	4314.9	400.86	52.0	3.28	1208	548	1079	489	3.03	85.90	2.83	80.24
654	31.2	2.90	3595.8	334.05	43.5	2.74	1173	532	1067	484	2.53	71.74	2.37	67.02
656	31.2	2.90	5393.7	501.07	65.0	4.10	1482	672	1325	601	3.79	107.38	3.54	100.30
664	37.5	3.48	4314.9	400.85	52.2	3.29	1389	630	1264	573	3.04	86.09	2.84	80.43
666	37.5	3.48	6472.4	601.29	78.0	4.92	1756	797	1571	713	4.55	128.86	4.25	120.36

ICL6 Direct Expansion & Recirc. Top Feed

Model	Total Face Area		Total Surface Area		Water Defrost		Dry Weight				Internal Volume			
	ft2 m2		ft2 m2		GPM@	L/s@	R-22		NH3		R-22		NH3	
	ft2	m2	ft2	m2	5psi	34kPa	lb	kg	lb	kg	ft3	L	ft3	L
414	6.2	0.58	247.0	22.94	4.5	0.28	238	108	227	103	0.42	11.75	0.35	9.91
416	6.2	0.58	370.2	34.39	6.5	0.41	282	128	267	121	0.62	17.61	0.53	14.87
424	12.5	1.16	494.0	45.89	9.0	0.57	397	180	380	172	0.83	23.51	0.70	19.82
426	12.5	1.16	740.4	68.79	13.0	0.82	475	215	452	205	1.24	35.21	1.05	29.74
434	18.7	1.74	741.0	68.83	13.5	0.85	556	252	534	242	1.25	35.26	1.05	29.74
436	18.7	1.74	1110.7	103.18	19.5	1.23	669	303	637	289	1.87	52.82	1.58	44.60
444	25	2.32	987.9	91.78	18.0	1.14	716	325	687	312	1.66	47.01	1.40	39.65
446	25	2.32	1480.9	137.57	26.0	1.64	862	391	821	372	2.49	70.42	2.10	59.47
454	31.2	2.90	1234.9	114.72	22.5	1.42	875	397	841	381	2.08	58.76	1.75	49.56
456	31.2	2.90	1851.1	171.97	32.5	2.05	1056	479	1006	456	3.11	88.03	2.63	74.34
464	37.5	3.48	1481.9	137.67	27.0	1.70	1034	469	994	451	2.49	70.52	2.1	59.47
466	37.5	3.48	2221.3	206.36	39.0	2.46	1249	567	1191	540	3.73	105.63	3.15	89.21

614	6.2	0.58	352.7	32.76	4.5	0.28	243	110	232	105	0.42	11.75	0.35	9.91
616	6.2	0.58	529.0	49.14	6.5	0.41	289	131	274	124	0.62	17.61	0.53	14.87
624	12.5	1.16	705.3	65.53	9.0	0.57	407	185	390	177	0.83	23.51	0.70	19.82
626	12.5	1.16	1058.0	98.29	13.0	0.82	489	222	465	211	1.24	35.21	1.05	29.74
634	18.7	1.74	1058.0	98.29	13.5	0.85	570	259	548	249	1.25	35.26	1.05	29.74
636	18.7	1.74	1587.0	147.43	19.5	1.23	689	313	657	298	1.87	52.82	1.58	44.60
644	25	2.32	1410.7	131.05	18.0	1.14	734	333	705	320	1.66	47.01	1.40	39.65
646	25	2.32	2116.0	196.58	26.0	1.64	889	403	848	385	2.49	70.42	2.10	59.47
654	31.2	2.90	1763.3	163.81	22.5	1.42	897	407	863	391	2.08	58.76	1.75	49.56
656	31.2	2.90	2645.0	245.72	32.5	2.05	1089	494	1040	472	3.11	88.03	2.63	74.34
664	37.5	3.48	2116.0	196.58	27.0	1.70	1061	481	1021	463	2.49	70.52	2.1	59.47
666	37.5	3.48	3174.0	294.86	39.0	2.46	1289	585	1231	558	3.73	105.63	3.15	89.21

ICL7 Flooded & Recirc. Bottom Feed

Model	Total Face Area		Total Surface Area		Water Defrost		Dry Weight				Internal Volume			
					GPM@	L/s@	R-22		NH3		R-22		NH3	
	ft2	m2	ft2	m2	5psi	34kPa	lb	kg	lb	kg	ft3	L	ft3	L
314	7.5	0.70	447.6	41.58	10.40	0.66	314	142	280	127	0.60	17.09	0.56	15.95
316	7.5	0.70	671.4	62.37	15.60	0.98	389	176	340	154	0.91	25.63	0.85	23.93
324	15	1.39	895.1	83.16	20.80	1.31	534	242	477	216	1.21	34.17	1.13	31.91
326	15	1.39	1342.7	124.74	31.20	1.97	667	303	584	265	1.81	51.26	1.69	47.86
334	22.5	2.09	1342.7	124.74	31.20	1.97	754	342	674	306	1.81	51.26	1.69	47.86
336	22.5	2.09	2014.1	187.11	46.80	2.95	944	428	827	375	2.72	76.89	2.54	71.79
344	30	2.79	1790.3	166.32	41.60	2.62	973	441	872	396	2.41	68.35	2.25	63.81
346	30	2.79	2685.4	249.47	62.40	3.94	1222	554	1071	486	3.62	102.52	3.38	95.72
354	37.5	3.48	2237.8	207.89	52.00	3.28	1193	541	1069	485	3.02	85.43	2.82	79.77
356	37.5	3.48	3356.8	311.84	78.00	4.92	1499	680	1314	596	4.53	128.15	4.23	119.65
364	45	4.18	2685.4	249.47	62.40	3.94	1413	641	1266	574	3.62	102.52	3.38	95.72
366	45	4.18	4028.1	374.21	93.60	5.91	1777	806	1558	707	5.43	153.78	5.07	143.58
414	7.5	0.70	585.7	54.41	10.40	0.66	326	148	292	132	0.60	17.09	0.56	15.95
416	7.5	0.70	878.6	81.62	15.60	0.98	406	184	357	162	0.91	25.63	0.85	23.93
424	15	1.39	1171.4	108.83	20.80	1.31	558	253	501	227	1.21	34.17	1.13	31.91
426	15	1.39	1757.2	163.24	31.20	1.97	702	318	619	281	1.81	51.26	1.69	47.86
434	22.5	2.09	1757.2	163.24	31.20	1.97	789	358	710	322	1.81	51.26	1.69	47.86
436	22.5	2.09	2635.8	244.86	46.80	2.95	997	452	880	399	2.72	76.89	2.54	71.79
444	30	2.79	2342.9	217.65	41.60	2.62	1021	463	919	417	2.41	68.35	2.25	63.81
446	30	2.79	3514.3	326.48	62.40	3.94	1293	587	1142	518	3.62	102.52	3.38	95.72
454	37.5	3.48	2928.6	272.07	52.00	3.28	1252	568	1128	512	3.02	85.43	2.82	79.77
456	37.5	3.48	4392.9	408.10	78.00	4.92	1588	720	1403	636	4.53	128.15	4.23	119.65
464	45	4.18	3514.3	326.48	62.40	3.94	1484	673	1337	606	3.62	102.52	3.38	95.72
466	45	4.18	5271.5	489.72	93.60	5.91	1884	855	1665	755	5.43	153.78	5.07	143.58
614	7.5	0.70	863.0	80.17	10.40	0.66	337	153	304	138	0.60	17.09	0.56	15.95
616	7.5	0.70	1294.5	120.26	15.60	0.98	424	192	375	170	0.91	25.63	0.85	23.93
624	15	1.39	1726.0	160.34	20.80	1.31	580	263	524	238	1.21	34.17	1.13	31.91
626	15	1.39	2589.0	240.52	31.20	1.97	737	334	654	297	1.81	51.26	1.69	47.86
634	22.5	2.09	2589.0	240.51	31.20	1.97	823	373	745	338	1.81	51.26	1.69	47.86
636	22.5	2.09	3883.5	360.77	46.80	2.95	1049	476	932	423	2.72	76.89	2.54	71.79
644	30	2.79	3451.9	320.68	41.60	2.62	1067	484	965	438	2.41	68.35	2.25	63.81
646	30	2.79	5177.9	481.03	62.40	3.94	1362	618	1211	549	3.62	102.52	3.38	95.72
654	37.5	3.48	4314.9	400.86	52.00	3.28	1310	594	1186	538	3.02	85.43	2.82	79.77
656	37.5	3.48	6472.4	601.29	78.00	4.92	1674	759	1489	675	4.53	128.15	4.23	119.65
664	45	4.18	5177.9	481.03	62.40	3.94	1553	704	1406	638	3.62	102.52	3.38	95.72
666	45	4.18	7766.9	721.55	93.60	5.91	1987	901	1768	802	5.43	153.78	5.07	143.58

ICL7 Direct Expansion & Recirc. Top Feed

Model	Total Face Area		Total Surface Area		Water Defrost		Dry Weight				Internal Volume			
					GPM@	L/s@	R-22		NH3		R-22		NH3	
	ft2	m2	ft2	m2	5psi	34kPa	lb	kg	lb	kg	ft3	L	ft3	L
414	7.5	0.70	296.4	27.53	5.20	0.33	255	116	243	110	0.50	14.02	0.42	11.80
416	7.5	0.70	444.3	41.27	7.80	0.49	305	138	288	131	0.74	21.00	0.63	17.75
424	15	1.39	592.8	55.07	10.40	0.66	430	195	412	187	0.99	28.04	0.83	23.60
426	15	1.39	888.5	82.54	15.60	0.98	521	236	494	224	1.48	42.01	1.25	35.49
434	22.5	2.09	889.2	82.60	15.60	0.98	606	275	580	263	1.49	42.06	1.25	35.40
436	22.5	2.09	1332.8	123.81	23.40	1.48	737	334	700	318	2.23	63.01	1.88	53.24
444	30	2.79	1185.5	110.14	20.80	1.31	781	354	749	340	1.98	56.07	1.67	47.20
446	30	2.79	1777.0	165.08	31.20	1.97	954	433	906	411	2.97	84.02	2.51	70.99
454	37.5	3.48	1481.9	137.67	26.00	1.64	957	434	917	416	2.48	70.09	2.08	59.00
456	37.5	3.48	2221.3	206.35	39.00	2.46	1170	531	1112	504	3.71	105.02	3.13	88.74
464	45	4.18	1778.3	165.20	31.20	1.97	1132	513	1086	493	2.97	84.11	2.5	70.80
466	45	4.18	2665.5	247.62	46.80	2.95	1386	629	1318	598	4.45	126.02	3.76	106.48
614	7.5	0.70	423.2	39.32	5.20	0.33	261	118	248	112	0.50	14.02	0.42	11.80
616	7.5	0.70	634.8	58.97	7.80	0.49	313	142	296	134	0.74	21.00	0.63	17.75
624	15	1.39	846.4	78.63	10.40	0.66	442	200	422	191	0.99	28.04	0.83	23.60
626	15	1.39	1269.6	117.95	15.60	0.98	537	244	510	231	1.48	42.01	1.25	35.49
634	22.5	2.09	1269.6	117.95	15.60	0.98	623	283	596	270	1.49	42.06	1.25	35.40
636	22.5	2.09	1904.4	176.92	23.40	1.48	761	345	724	328	2.23	63.01	1.88	53.24
644	30	2.79	1692.8	157.26	20.80	1.31	803	364	771	350	1.98	56.07	1.67	47.20
646	30	2.79	2539.2	235.89	31.20	1.97	986	447	939	426	2.97	84.02	2.51	70.99
654	37.5	3.48	2116.0	196.58	26.00	1.64	984	446	945	429	2.48	70.09	2.08	59.00
656	37.5	3.48	3174.0	294.86	39.00	2.46	1210	549	1153	523	3.71	105.02	3.13	88.74
664	45	4.18	2539.2	235.89	31.20	1.97	1165	528	1119	508	2.97	84.11	2.5	70.80
666	45	4.18	3808.8	353.84	46.80	2.95	1434	650	1397	634	4.45	126.02	3.76	106.48

Dimensions, Inches (mm)

Model		A	B	C	D
ICL5	1 Fan	1 @ 30(762)	52(1321)	26 (660)	— —
	& 2 Fan	2 30(762)	82(2083)	38 (965)	— —
ICL6	3 Fan	3 30(762)	112(2845)	29 (737)	54 (1372)
	4 Fan	4 30(762)	142(3607)	56 (1422)	42 (1067)
	5 Fan	5 30(762)	172(4369)	56 (1422)	60 (1524)
	6 Fan	6 30(762)	202(5131)	56 (1422)	90 (2286)
ICL7	1 Fan	1 36(914)	58(1473)	29 (737)	— —
	2 Fan	2 36(914)	94(2388)	44 (1118)	— —
	3 Fan	3 36(914)	130(3302)	34 (864)	62 (1575)
	4 Fan	4 36(914)	166(4216)	56 (1422)	54 (1372)
	5 Fan	5 36(914)	202(5131)	56 (1422)	90 (2286)
	6 Fan	6 36(914)	238(6045)	56 (1422)	126 (3200)

Recirc Bottom & Gravity Flooded Circuiting, All Models				
Rows	W1	W2	W3	W4 (Note 1)
4	21 7/8 (556)	20 3/8 (518)	29 7/8 (759)	36 7/8 (937)
6	26 7/16 (672)	24 15/16 (633)	34 7/16 (875)	41 7/16(1053)
Direct Expansion & Recirc Top Circuiting, All Models				
Rows	W1	W2	W3	W4 (Note 1)
4&6	21 7/8 (556)	20 3/8 (518)	29 7/8 (759)	36 7/8 (937)

Model	H
ICL5	31 7/8 (810)
ICL6	37 7/8 (962)
ICL7	37 7/8 (962)

- Notes: 1. Water Defrost Only.
 2. Ammonia Header Connections are Aluminum Flange.
 Halocarbon Header Connections are Copper ODS "sweat".

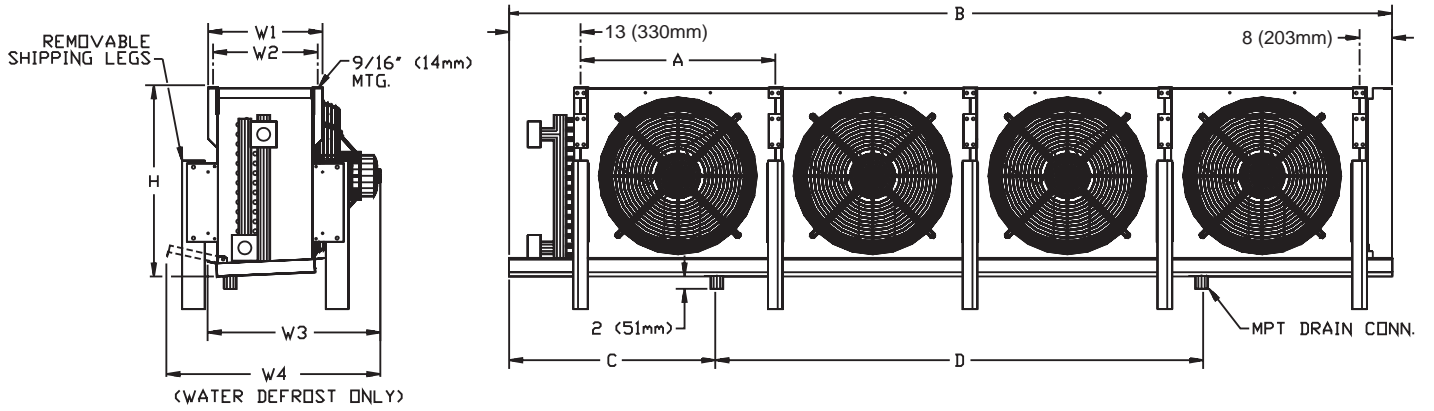
Table 9 Electrical Specifications

60 Hz			Single Phase 208 - 230V		Three Phase 208-230/460V	
Model	HP	RPM	FLA	LRA	FLA	LRA
ICL5	1/3	1140	2.0 - 1.8	7.4	1.7 - 1.6 / 0.8	7.0
ICL6	1/2	1140	2.5 - 2.3	7.5	2.2 - 2.0 / 1.0	7.5/5
ICL7	1/2	1140	2.5 - 2.3	7.5	2.2 - 2.0 / 1.0	7.5
ICL7-HV	3/4	1140	3.6 - 3.4	12.7	2.8 - 3.0 / 1.5	9.0

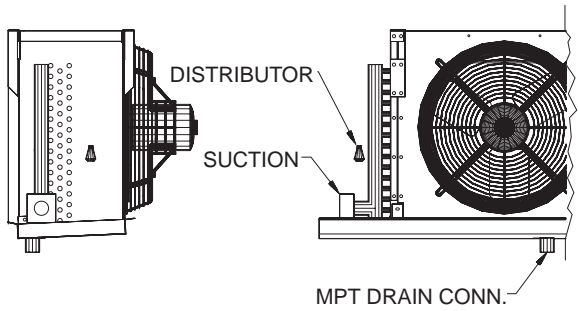
50 Hz			Single Phase 220 - 240V		Three Phase 200 / 400V	
Model	HP (Watts)	RPM	FLA	LRA	FLA	LRA
ICL5	1/2 (373)	950	2.8 - 2.7	8.0	2.2 / 1.1	8.1 / 4.0
ICL6	3/4 (559)	950	3.5 - 3.6	12.7	3.2 / 1.6	12.8 / 6.4
ICL7	3/4 (559)	950	3.5 - 3.6	12.7	3.2 / 1.6	12.8 / 6.4
ICL7-HV	1.0 (746)	950	—	—	4.3 / 2.1	17.2 / 8.4

- Notes: 1. Totally Enclosed, Air-Over (TEAO) Motors
 2. Motors supplied with internal thermal overload protection.

Figure 4 Unit Dimensions

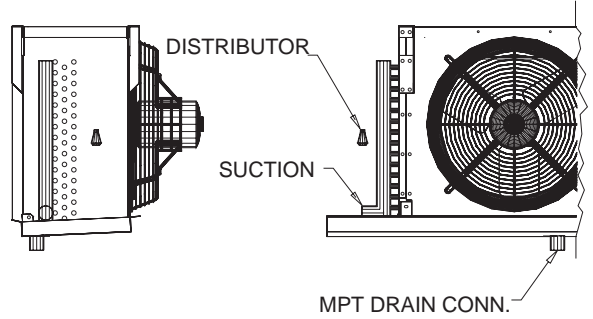


AMMONIA

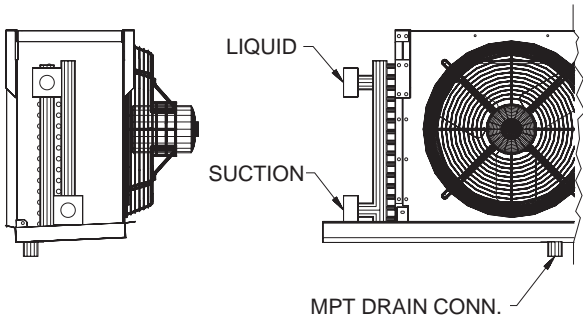


HEADER END, DX CIRCUITING

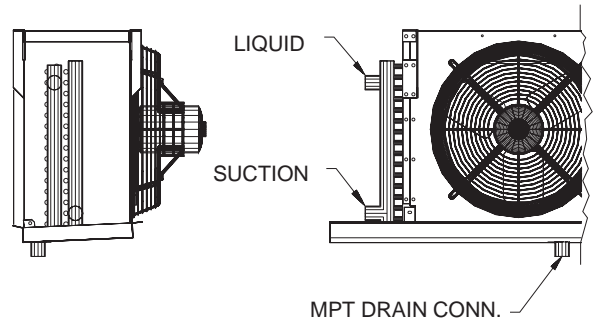
HALOCARBON



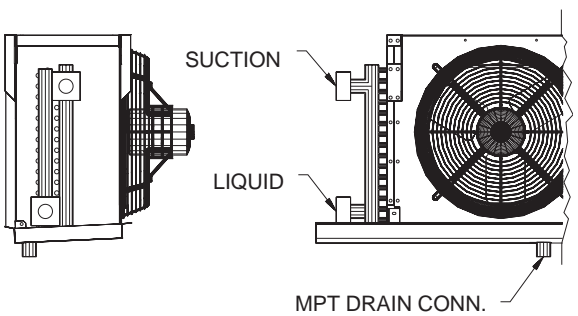
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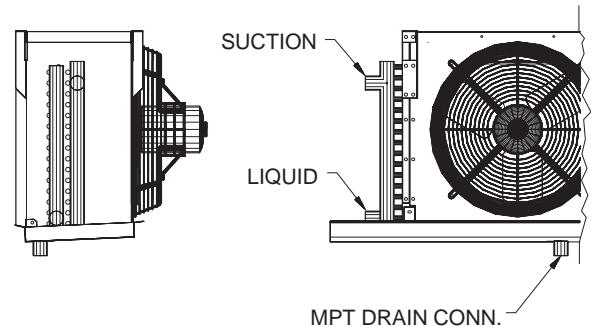
HEADER END, RT CIRCUITING



HEADER END, RT CIRCUITING



HEADER END, RB AND FL CIRCUITING



HEADER END, RB AND FL CIRCUITING



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Colmac Coil Manufacturing, Inc.
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