ICL - technologies

Heat Transfer - Coils

Air Conditioning, Refrigeration & Industrial Applications

➢Dedicated to - Quality - Engineering
➢Committed to - Product - Excellence

India's No. I

1. Coils - Chilled Water	:	Air Conditioning
2. Coils - Hot Water	:	Air Heating
3. Coils - Evaporator	:	Ammonia, Freon, etc.
4. Coils - Condensing	:	Ammonia, Steam, Gases, etc.
5. Coils - Steam	:	Air Heating or Heat-recovery
6. Coils - Misc. Fluids	:	Cooling or Heating

International Coil Ltd

Leader in Heat-transfer Technology

ICL - Stepping in 21st Century

ICL - technologies : ICL has comprehensive plan entering into 21st century by using most-advance computer aided programs and most modern technology manufacturing plant to produce high-tech equipment of heat-transfer applications. Our organization has Four Divisions based on Engineering, Manufacturing and Product Marketing.

Sucha Singh - President

In the past 40 years we got pleasure from working with our most valuable customers, users, committed venders, suppliers. We have highly dedicated team of our engineers, manufacturing and marketing staff. For future we earnestly believe in the basic fundamental principles of our business ethics, which are continuous improvements and our moral obligations towards the growth of our national & international operations.

Our experience

1. Past	:	Very Good
2. Present	:	Much Better
3. Future	:	Excellent

A long Journey - but very Exciting

International Coil - - is Born at 40 : Today International Coil Ltd is very young and mature enough with full of its rich and vast experience of engineering, manufacturing, inventions, innovations of the past 40 years. Our future of the **21st century** is very bright and promising to achieve our goals. Our pledge for development, growth is based on fundamental principals of untiring and relentless efforts, committed with **Dedication, Sincerity and Honesty.**

Just Born - at 40

International Coil Limited

* Universal Refrigeration Industry - 1965
* Uniaire Private Limited- 1971 - 1971
* Coil Company Private Limited - 1984
* International Coil Ltd. - 2004

Our - Mission of 21st Century : We have definite objective to provide our ' High-tech ' equipment to very-much developed countries in Europe, USA, Japan & in Asia. Needless to mention but it requires untiring, relentless efforts, with vast knowledge and rigorous labor for which our organization is fully committed. We have very clear vision of **21st Century** and fully geared to develop our National-pride of **Made in India** in the world market.

We design and supply our Heat-transfer equipment to Wartsila-Finland, Caterpillar-USA, Rolls Royce-U.K, USA,-B&M MAN-Germany, Cummins-USA, Nestle and many more on the list. These international organizations have stopped importing Heat-transfer equipment from their countries and now use our products in India and its adjoining countries.

Your Partner - The Energy Saving Expert

CoilCo - Heat Transfer Coils

View of ICL-technologies Engineering Center





- **ICL-technologies** has most advanced engineering center and is ready to solve your Cooling Air, Heating, Dehumidification through its advance-technology of design, selections and manufacturing process of (finned surface) Heat-transfer coils. We are always ready, update with modern-technology application of heat-transfer coils for Air Conditioning, Process Cooling and heating.

Largest Range of Coils available in India

1. Applications - (+200 to -40 deg. C)

1. **Coils - Chilled Water : Air Conditioning**
2. **Coils - Hot Water : Air Heating**
3. **Coils - Evaporator : Ammonia, Freon, etc.**
4. **Coils - Condensing : Ammonia, Steam, Gases, etc.**
5. **Coils - Steam : Air Heating or Heat-recovery**
6. **Coils - Misc. Fluids : Cooling or Heating**

2. Unlimited Combinations - the Largest Range of Coils

- **Face Area : Smallest to Largest (1.0 to 200 sq. ft)**
- **Row Deep : 1, 2, 3, 4, 6, 8, 10, 12**
- **Fins Material : Aluminum, Copper**
- **Fins/inch : 3, 4, 5, 6, 8, 10, 12**
- **Tube Material : Copper, Steel, Cupro-nickel, Stainless Steel**

3. Guaranteed Performance

- **CAD selections - through Computer Program Design**
- **Performance - Certified Ratings**
- **Dedicated to - Quality-Engineering**
- **Committed to - Product-Excellence**

ICL-technologies Heat Transfer - Coils

an American-technology Product

Be sure when you Buy ?

Finned-surface Heat-transfer - Coils

for your Air Conditioning & Cooling / Heating systems

Important Note : It may be New Project or Replacement

- **Cooling / Heating / Condensing / Evaporation - Coil is the most Important-Component of your Heat-transfer system - which must be verified :-**

1.	Coil Material	- Specifications
2.	Tube Material and its	- Treatment
3.	Fin Material and its	- Processing
4.	Assembly of and its	- Mechanical Expansion
5.	Coil Circuiting and its	- Welding Procedure
6.	Pneumatic Pressure	- Leak Testing
7.	Manufacturing	- Procedures & Records
8.	Life Expectancy	- in Terms of Years

Process of American-technology
Coil Co manufacturing Plant in India

Hidaka (Japan) Fin-press

Six station Fin Progression

Fin-tube Block after Expansion

Coil Fin Processing Machine (without this Cooling Coils are of No-use)

- Quality is not an Accident
it needs ' Technology & Will-Power ' to achieve

ICL - technologies CoilCo - India

Manufacturing and Assembly plant









CoilCo - Manufacturing & Assembly-section plant in India

Plant-I in New Delhi & Plant-II in Gurgaon - Haryana

CoilCo - Chilled Water - Coils

Cooling & Dehumidification (for Air Conditioning Systems)

Table - 1 **Chilled Water Coils - Capacity TR/Sq.Ft**

Water in : 45 deg.F **Water TD deg.F 8**

Air Vel. FPM	4 - Row Deep			6 - Row Deep			8 - Row Deep		
	8 - FPI	10 - FPI	12 - FPI	8 - FPI	10 - FPI	12 - FPI	8 - FPI	10 - FPI	12 - FPI
400	1.15	1.25	1.33	1.46	1.55	1.63	1.66	1.74	1.80
500	1.28	1.40	1.49	1.66	1.78	1.88	1.93	2.04	2.12
600	1.38	1.52	1.63	1.83	1.97	2.08	2.15	2.29	2.39

Note : 1. Entering Air temperature WB : 67 deg.F (19.4 deg. C)
2. For Further information, please write to ICL technologies - New Delhi

Table - 2 **Chilled Water Coils - Capacity TR/Sq.Ft**

Water in : 45 deg.F **Water TD deg.F 10**

Air Vel. FPM	4 - Row Deep			6 - Row Deep			8 - Row Deep		
	8 - FPI	10 - FPI	12 - FPI	8 - FPI	10 - FPI	12 - FPI	8 - FPI	10 - FPI	12 - FPI
400	1.10	1.19	1.27	1.40	1.49	1.57	1.60	1.68	1.75
500	1.22	1.33	1.42	1.57	1.70	1.80	1.85	2.97	2.05
600	1.32	1.44	1.54	1.74	1.88	2.99	2.07	2.20	2.31

Note : 1. Entering Air temperature WB : 67 deg.F (19.4 deg. C)
2. For Further information, please write to ICL technologies - New Delhi

Table - 3 **Capacity - Factors**
Chilled Water Coils

Entering Water °F	Entering Air Wet Bulb (WB) temp. deg. F						
	65	67	70	75	80	85	90
42	1.05	1.15	1.30	1.55	1.80	2.05	- - -
44	0.95	1.05	1.20	1.45	1.70	1.95	2.20
45	0.90	1.00	1.15	1.40	1.65	1.90	2.20
46	0.85	1.95	1.10	1.35	1.60	1.85	2.10
48	0.75	0.85	1.00	1.25	1.50	1.75	2.00
50	0.56	0.75	0.90	1.15	1.40	1.65	1.90

For Further information, please write to ICL technologies - New Delhi

Table - 4 **Air Pressure Drop (wet coil) - Inches of Water**
Pressure Drop (WG) 8 - Fins / Inch Coils

Air Vel. FPM	Entering Air Wet Bulb (WB) temp. deg. F						
	1	2	3	4	5	6	8
200	0.03	0.07	0.19	0.12	0.16	0.20	0.29
300	0.07	0.12	0.18	0.25	0.30	0.30	0.43
400	0.11	0.20	0.30	0.40	0.49	0.49	0.68
500	0.14	0.29	0.43	0.58	0.70	0.70	0.99
600	0.20	0.40	0.58	0.78	0.96	0.16	1.34

For Further information, please write to ICL technologies - New Delhi

Quick selection Chilled Water Coils
Cooling Air & Dehumidification

1. Chilled Water Coils can be selected TR/hr based on per Sq. Ft of coil Face Area at different Air Velocity, Fin spacing (FPI) and Row deep.

2. Chart 1 & chart 2 are for 8 & 10 deg. F water temperature difference.

3. For change in Air inlet WB and Inlet water temperature deg. F -- use chart 4 for capacity correction factors.

4. Chart 4 & 5 are for selection of Air Pressure Drop inches of water gauge.

- **For any further information, please write to - - ICL-technologies - India**

Air Pressure Drop
Table - 5

Correction Factors		
Fins Per Inch	Fins Per C.M.	Multi-Plier
4	1.6	0.63
6	2.4	0.81
8	3.1	1.00
10	3.9	1.18
12	4.7	1.36
14	5.5	1.55

CoilCo - Chilled Water - Coils

Quick selection of - Standard size Coil

Applications - in Central Air Conditioning & Industrial Cooling Air and Dehumidification Systems

1. Air Conditioning

- Airports, Banks, Hotels
- Hospitals, Technology Centers
- Auditoriums, Convention Halls
- Shopping Centers
- District-Cooling
- Commercial Buildings
- International Trade Centers

2. Industrial Systems

- Power Plants, Chemical Plants
- Fertilizer Plants, Cement Plants
- Pharmaceutical Plants
- Textile Industry
- Defence Installations
- Engineering Centers
- Manufacturing Plants
- Air Inlet Cooling System for Gas Turbines in Power Plants

Quick Selection - Standard-size Coils

1 - Small Size Coils (35 size - face area)

	Fin High	Coil - Fin Length (Inch) FL						Fin High	
		24	30	36	48	60	72		
	inch	610	762	914	1219	1524	1829	mm	
1	12	2.0	2.5	3.0	4.0	5.0	6.0	305	1
2	18	3.0	3.8	4.5	6.0	7.5	9.0	457	2
3	24	4.0	5.0	6.0	8.0	10.0	12.0	610	3
4	30		6.3	7.5	10.0	12.5	15.0	762	4
5	36			9.0	12.0	15.0	18.0	914	5
6	42				14.0	17.5	21.0	1067	6
7	48				16.0	20.0	24.0	1219	7
8	60					25.0	30.0	1524	8

2 - Medium Size Coils (48 size - face area)

	Fin High	Coil - Fin Length (Inch) FL						Fin High	
		34	96	120	144	180	192		
	inch	2134	2438	3048	3658	4572	4877	mm	
9	13	10.5	12.0	15.0	18.0	22.5	24.0	457	9
10	24	14.0	16.0	20.0	24.0	30.0	32.0	610	10
11	36	21.0	24.0	30.0	36.0	45.0	48.0	914	11
12	42	24.5	28.0	35.0	42.0	52.5	56.0	1067	12
13	48	28.0	32.0	40.0	48.0	60.0	64.0	1219	13
14	54	32.5	36.0	45.0	54.0	67.5	72.0	1372	14
15	60	35.0	40.0	50.0	60.0	75.0	80.0	1524	15
16	72	42.0	48.0	60.0	72.0	90.0	96.0	1829	16

FL = Fin High FH = Fin High

Quick Selection - Standard-size Coils

3 - Large Size Coils (48 size - face area)

	Fin High	Coil - Fin Length (Inch) FL						Fin High	
		300	320	340	360	380	400		
	inch	7620	8128	8636	9144	9652	10160	mm	
17	36	75	80	85	90	95	100	914	17
18	42	88	93	99	105	11	127	1067	18
19	48	100	107	443	120	127	133	1219	19
20	54	113	120	128	135	143	150	1372	20
21	60	125	133	142	150	158	167	1524	21
22	72	150	160	170	180	190	200	1829	22
23	78	163	173	184	195	206	217	1981	23
24	84	175	187	198	210	222	233	2134	24

FL = Fin High FH = Fin High

➢ **Thousands of CoilCo** Chilled Water Coils are in use for the last **20 years**

India's No.1 - Manufacturer of Industrial (finned surface) Coils

Available - Chilled Water & Glycol Coils - for applications

- **Air Conditioning** (Cooling Air & Dehumidification)
- **Industrial** (Process - Cooling Air & Dehumidification)

CoilCo - Hot Water - Coils

Air Heating - or - Heat Recovery Systems

Hot Water - Thermal Fluid - and Heat Recovery Coils

CoilCo - Hot Water Coils : We have more coil sizes, configurations and circuiting patterns than any other manufacturer. But if a regular size won't do, we'll build a finned surface coil in any intermediate size in serpentine or other circuiting patterns. The industry's most complete product line and the industry's fastest service- good reasons to telephone call or send email or fax. Our engineering divisions are always ready to serve you.

CoilCo - Thermal Fluid (Hot Oil) Coils.

For liquid phase applications, fin and bare tube surfaces are available for a wide range of heat transfer fluids and bulk temperature ranges. Fluid characteristics should be carefully selected for optimum heat transfer. Compatibility with tube materials should be ascertained according to temperature, pressure and anti-corrosion requirements.

Carbon and stainless steel surfaces are recommended for low-pressure systems operating at 200 F to 700 F bulk temperatures. Flanged liquid supply and return connections are recommended for all row depths and surface configurations.

A full range of capacities for easy coil selection

Coil capacity tables in this catalog include air velocities from 300 to 1200 FPM, with through-the-tube water velocities ranging from 1.0 FPS to 6.0 FPS at 600 F entering air and 200 CFM of air per gallon of water.

Performances are provided for coils with row depths ranging from 1 to 8 row depths, and multiple fin spacing of 8 to 14 per inch. Face areas for standard hot water heating coils are available in fin surface height increments of 1.5 inches from 12 to 72 inches at all tube lengths.

Optimum selection means highest efficiency.

Our virtually unlimited coil design capabilities allow you to select the right combination of coil characteristics for each job. Face areas, tubes, materials, and circuiting patterns should all be carefully calculated for maximum efficiency over the life of the coil. For the most practical and efficient thermal fluid coil selection, please write or call to Coil Company applications engineers.

Quick selection of - Standard size Coil

Quick Selection - Standard-size Coils

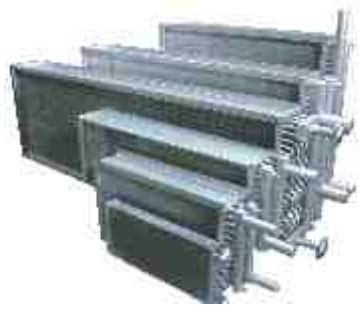
1 - Small Size Coils (35 size - face area)

	Fin High	Coil - Fin Length (Inch) FL						Fin High	
		24	30	36	48	60	72		
	inch	610	762	914	1219	1524	1829	mm	
1	12	2.0	2.5	3.0	4.0	5.0	6.0	305	1
2	18	3.0	3.8	4.5	6.0	7.5	9.0	457	2
3	24	4.0	5.0	6.0	8.0	10.0	12.0	610	3
4	30		6.3	7.5	10.0	12.5	15.0	762	4
5	36			9.0	12.0	15.0	18.0	914	5
6	42				14.0	17.5	21.0	1067	6
7	48				16.0	20.0	24.0	1219	7
8	60					25.0	30.0	1524	8

2 - Medium Size Coils (48 size - face area)

	Fin High	Coil - Fin Length (Inch) FL						Fin High	
		34	96	120	144	180	192		
	inch	2134	2438	3048	3658	4572	4877	mm	
9	13	10.5	12.0	15.0	18.0	22.5	24.0	457	9
10	24	14.0	16.0	20.0	24.0	30.0	32.0	610	10
11	36	21.0	24.0	30.0	36.0	45.0	48.0	914	11
12	42	24.5	28.0	35.0	42.0	52.5	56.0	1067	12
13	48	28.0	32.0	40.0	48.0	60.0	64.0	1219	13
14	54	32.5	36.0	45.0	54.0	67.5	72.0	1372	14
15	60	35.0	40.0	50.0	60.0	75.0	80.0	1524	15
16	72	42.0	48.0	60.0	72.0	90.0	96.0	1829	16

FL = Fin High FH = Fin High



Quick Selection - Standard-size Coils

3 - Large Size Coils (48 size - face area)

	Fin High	Coil - Fin Length (Inch) FL						Fin High	
		300	320	340	360	380	400		
	inch	7620	8128	8636	9144	9652	10160	mm	
17	36	75	80	85	90	95	100	914	17
18	42	88	93	99	105	11	127	1067	18
19	48	100	107	443	120	127	133	1219	19
20	54	113	120	128	135	143	150	1372	20
21	60	125	133	142	150	158	167	1524	21
22	72	150	160	170	180	190	200	1829	22
23	78	163	173	184	195	206	217	1981	23
24	84	175	187	198	210	222	233	2134	24

FL = Fin High FH = Fin High

CoilCo - Hot Water - Coils

Air Heating - or - Heat Recovery Systems

Hot Water Coil Circuiting Patterns

1. **D Circuit.** Double serpentine pattern with first two rows circuited to manifold header offering 50% reduction in tube water velocity as compared to F Circuit at the same GPM flow. D Circuit is especially applicable for larger flow requirements, reduced temperature ranges and reduced pressure drops.

2. **F Circuit**. Single serpentine flow pattern with all first row tubes connected to the manifold header. F Circuit pattern is generally employed for average flow requirements.

3. **H Circuit.** Half-serpentine pattern, with every other first row tube connected to the manifold header. H Circuit is recommended for maximum heat transfer efficiency in applications with tube velocities double the velocity as shown by F Circuit at the same GPM flow. H Circuit is frequently used for low flow, wide temperature range requirements.

Guidelines for Ethylene Glycol Non-freeze Protection

Ethylene glycol/water solutions used to prevent freezing of heat transfer surfaces in low temperature conditions require special consideration. Solution characteristics vary in density, specific heat, etc., requiring a more precise determination of freeze points. In general glycol/water solutions require greater system flows than water. The following table provides approximate index values when applying ethylene glycol to water according to weight ratio:

GPM Add Percentages : are general guidelines for additional flows based on average bulk temperatures of 180°F for heating and 40°F for cooling.

As a double check, a hydrometer similar to those used to verify automotive radiator solution freeze points may be used.

Glycol solutions with water can be overheated by fired heaters or other energy sources : Excessive film and bulk temperatures may bruise the inhibitors in the glycol, resulting in possible acid formation and carbon build-up within the heater source itself, and in other piping and heat transfer surfaces. Generally, ethylene glycol is recommended only for bulk operating temperature ranges from - 40°F to 275°F +.

Note: For applications where freeze points and ethylene glycol/water mixtures are more difficult to determine, contact Coil Company. We're glycol system specialists.

Guidelines for Ethylene Glycol Coils
Non-freeze protection

Bulk Mixture		Freezing Point		GPM Add %	
Water	Glycol	deg. F	deg. C	Heating	Cooling
100%	0%	+ 32.0	0.0	0%	0%
95%	10%	+ 24.8	- 4.0	3%	3%
85%	15%	+ 21.0	- 6.0	4%	4%
80%	20%	+ 15.8	- 9.0	5%	5%
75%	25%	+ 10.4	- 12.0	6%	6%
70%	30%	+ 4.0	- 15.6	7%	7%
65%	35%	- 3.0	- 19.4	9%	11%
60%	40%	- 11.2	- 24.0	10%	14%
55%	45%	- 21.0	- 29.4	12%	17%
50%	50%	- 33.0	- 36.1	14%	20%
45%	55%	- 49.0	- 45.0	16%	23%

CAD/Coil Computer Selection SERVICE

Selection Service : Tough applications demand special solutions. With our computer-assisted design, we'll construct coils to the most exacting set of requirements, right down to the last accessory. No matter what kind of coil you need, regardless of dimensions, materials, type or construction. Even if you have an old coil that's obsolete or unavailable, we can duplicate it. Often we'll receive, computer analyze, and process your application specifications right over the phone, giving you immediate engineering assistance. Your special applications are routine to us.

CoilCo Steam - Coils

Air Heating - or Steam Condensing

The Most Complete Line of Steam Coils in India

CoilCo- Multiple tube patterns, an unlimited variety of construction types. Low pressure commercial or high pressure/ high temperature industrial applications. We can ship within 10 days after we receive your order. At Coil Company, our design and engineering flexibility means you can select performance to match the job efficiently, regardless of air and gas flows, temperature ranges or special application requirements.

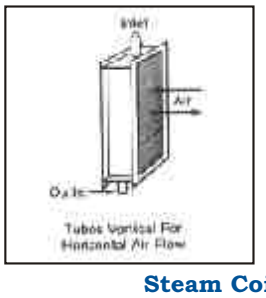
Quality performance you specify part-by-part to meet your requirements : Performance depends on accurate selection of coil characteristics to meet a particular application, rather than over-specifying a coil and adapting it. Factors such as airside friction vs. temperature rise should be carefully calculated to match each coil to the job part-by-part. Over-specification results in inefficient coil performance. A bigger coil with special construction features is not necessarily a better coil for your job.

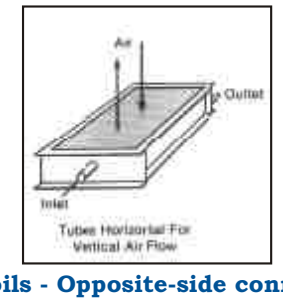
Years of endurance from years of research : For well over 20 years, we've been perfecting coils of all types, constructions, dimensions and materials. We specialize in solving heat transfer problems, and we've devoted years of research to eliminate steam side erosion and stress. In all critical points-headers, tubes, brazing and welds-specially developed techniques are applied to assure rugged construction.

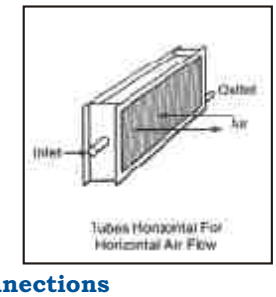
A wider selection of capacities than any manufacturer : You can select from specially designed tube arrangements, all developed to optimize steam flow within the heat exchanger surfaces. In all types of applications, you get a high degree of efficiency possible only through job-matched capacity selection. Our high capacity coils provide rapid and uniform steam distribution under fluctuating load conditions when installed with responsive system venting and condensate removal.

10-day coil duplication - Nobody ships faster : We can duplicate any steam coil regardless of age, model obsolescence, make, materials, construction and dimensions. Just give us your specifications. Usually a phone call is all we need. Our computer-assisted design flexibility means you get exactly what you need in days, not months. But our commitment is not just to speed. We thoroughly analyze your requirements. If we can recommend a better, more efficient coil for you, we will.

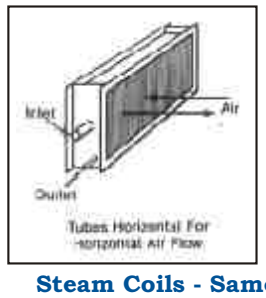
Quick selection of - Standard size Coil

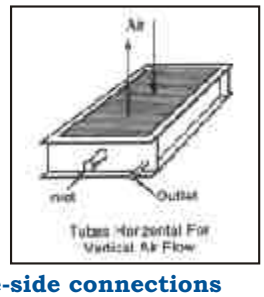






Steam Coils - Opposite-side connections





Steam Coils - Same-side connections

Typical Applications of Steam Coils

Pre-heaters : These are ideal for preheating HVAC, industrial and process supply air or gas handling supply systems. Because many applications are exposed to entering temperatures at or below freezing, uniform steam distribution across surface faces is of primary importance to eliminate condensate air and condensable gases. Thus, the double tube or inner distributing tube design should be considered for most HVAC pre-heater applications.

Re-heaters : Sometimes referred to as Booster or Duct Heaters, these are applicable as zone boosters and re-heaters for specific temperature and humidity HVAC system duties. Re-heaters are also applied extensively for primary source heating in industrial and process recirculating air and gas handling systems.

CoilCo Steam - Coils

Air Heating - or Steam Condensing

Construction Features

CoilCo Steam Coils : are available in extended finned-tube surface of aluminum-fin and copper-fin constructions with steel-tube, and stainless-tube materials. This flexibility in steam coil construction offers a wide range of selections for temperature ranges, steam flow circuiting environmental conditions and space requirements.

Extended surface coils : are available with plate-fin tube or with continuous plate fins for multiple tubes in face and row depth.

We have sixteen different fin-height 12 to 72 inch and twelve different fin-length from 24 to 192 inch with 6, 8, 10 and 12 fins/inch of our standard size coils. These coils can be used in multiple in series or in parallel as per job requirements.

The sine-wave aluminum plate fins are being produced on our CNC machines. Tube-to-fin contact is excellent though our modern tube expansion equipment, which ultimately makes the high-efficiency heat transfer coils. The coils are factory tested at 300 PSIG (20 Kg/sq.cm) pneumatic test pressure under water.

Coil casings are offered in various materials and designs for free standing, ducted, field mounted banks and unitary applications. Materials include carbon steel, mill or hot-dipped galvanized steel, aluminum or stainless steel.

Bare tube surfaces are often selected for severe duty service involving air or gas side exposure to particulates, corrosives and erosives. They are a practical alternative to extended (finned tube) surfaces.

Manifold headers in various materials and designs are standard with one steam supp1y connection and one condensate return connection. Multiple steam supply connection stubs for optimum steam distribution within large tube core configurations and specific user piping designs are available upon request.

Protective coatings If required we can provide phenolic coating to Fin-tube Coil blocks, casing and manifold headers. It all depends upon atmospheric available

Quick Selection - Standard-size Coils

1 - Small Size Coils (35 size - face area)

	Fin High	Coil - Fin Length (Inch) FL						Fin High	
		24	30	36	48	60	72		
	inch	610	762	914	1219	1524	1829	mm	
1	12	2.0	2.5	3.0	4.0	5.0	6.0	305	1
2	18	3.0	3.8	4.5	6.0	7.5	9.0	457	2
3	24	4.0	5.0	6.0	8.0	10.0	12.0	610	3
4	30		6.3	7.5	10.0	12.5	15.0	762	4
5	36			9.0	12.0	15.0	18.0	914	5
6	42				14.0	17.5	21.0	1067	6
7	48				16.0	20.0	24.0	1219	7
8	60					25.0	30.0	1524	8

2 - Medium Size Coils (48 size - face area)

	Fin High	Coil - Fin Length (Inch) FL						Fin High	
		34	96	120	144	180	192		
	inch	2134	2438	3048	3658	4572	4877	mm	
9	13	10.5	12.0	15.0	18.0	22.5	24.0	457	9
10	24	14.0	16.0	20.0	24.0	30.0	32.0	610	10
11	36	21.0	24.0	30.0	36.0	45.0	48.0	914	11
12	42	24.5	28.0	35.0	42.0	52.5	56.0	1067	12
13	48	28.0	32.0	40.0	48.0	60.0	64.0	1219	13
14	54	32.5	36.0	45.0	54.0	67.5	72.0	1372	14
15	60	35.0	40.0	50.0	60.0	75.0	80.0	1524	15
16	72	42.0	48.0	60.0	72.0	90.0	96.0	1829	16

FL = Fin High FH = Fin High

PROPERTIES OF SATURATED STEAM

PRESSURE (GAUGE) PSI	TEMPERATURE °F	TEMPERATURE °C	LATENT HEAT BTU PER POUND	PRESSURE (GAUGE) PSI	TEMPERATURE °F	TEMPERATURE °C	LATENT HEAT BTU PER POUND
0	212	100	970	135	358	181	854
2	218	103	966	140	361	183	862
5	227	108	961	145	363	184	359
6	230	110	959	150	366	186	857
7	232	111	957	155	368	187	854
8	235	113	956	160	371	185	853
9	237	114	954	165	373	189	851
10	239	115	953	170	375	190	849
15	250	121	946	175	377	191	847
20	259	126	840	180	379	192	845
25	267	130	834	185	382	194	843
30	274	134	829	190	384	195	841
35	281	138	824	195	385	196	838
40	287	142	820	200	388	197	838
45	292	144	816	210	392	200	834
50	298	148	812	220	395	201	830
55	303	150	808	230	399	204	827
60	307	153	805	240	403	207	824
65	312	156	901	250	406	207	820
70	316	158	898	260	409	209	817
75	320	160	895	270	413	211	814
81	324	162	892	280	416	213	811
85	328	164	889	290	418	214	808
90	231	166	886	310	422	216	805
95	235	168	883	320	425	218	802
100	238	170	881	330	427	219	799
105	241	172	178	340	430	221	796
110	244	173	176	350	435	222	793
115	347	175	873	350	436	224	790
120	350	177	871	375	442	228	783
125	353	178	868	400	448	231	775
130	355	179	866				

TO DETERMINE CONDENSATE PER HOUR Lbs/hr = $\frac{\text{Coil Load BTU per hour}}{\text{Latent head of steam in BTU per pound}}$

Note :- For any further information, please write of ICL-technologies, New Delhi India

CoilCo (DX Evaporator) Coils

Cooling & Dehumidification (for Air Conditioning Systems)

Quick Selection - Standard-size Coils

1 - Small Size Coils (35 size - face area)

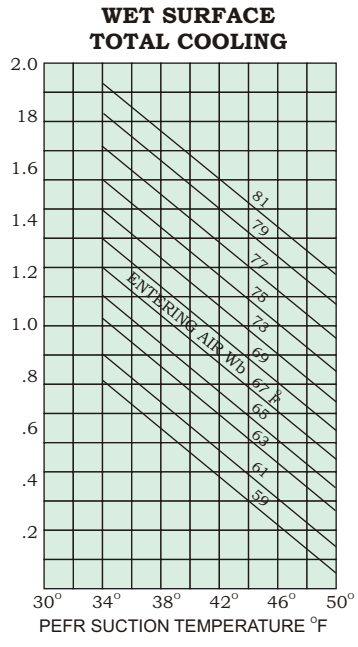
	Fin High	Coil - Fin Length (Inch) FL						Fin High	
		24	30	36	48	60	72		
	inch	610	762	914	1219	1524	1829	mm	
1	12	2.0	2.5	3.0	4.0	5.0	6.0	305	1
2	18	3.0	3.8	4.5	6.0	7.5	9.0	457	2
3	24	4.0	5.0	6.0	8.0	10.0	12.0	610	3
4	30		6.3	7.5	10.0	12.5	15.0	762	4
5	36			9.0	12.0	15.0	18.0	914	5
6	42				14.0	17.5	21.0	1067	6
7	48				16.0	20.0	24.0	1219	7
8	60					25.0	30.0	1524	8

2 - Medium Size Coils (48 size - face area)

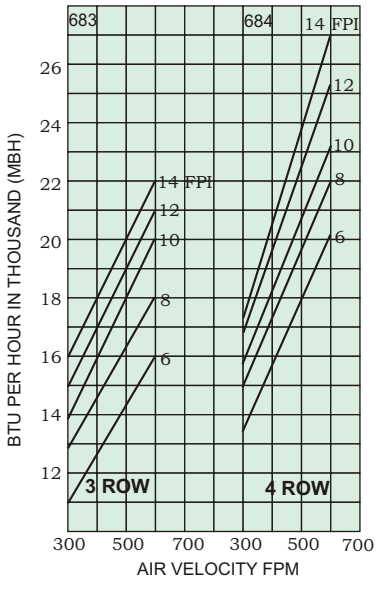
	Fin High	Coil - Fin Length (Inch) FL						Fin High	
		34	96	120	144	180	192		
	inch	2134	2438	3048	3658	4572	4877	mm	
9	13	10.5	12.0	15.0	18.0	22.5	24.0	457	9
10	24	14.0	16.0	20.0	24.0	30.0	32.0	610	10
11	36	21.0	24.0	30.0	36.0	45.0	48.0	914	11
12	42	24.5	28.0	35.0	42.0	52.5	56.0	1067	12
13	48	28.0	32.0	40.0	48.0	60.0	64.0	1219	13
14	54	32.5	36.0	45.0	54.0	67.5	72.0	1372	14
15	60	35.0	40.0	50.0	60.0	75.0	80.0	1524	15
16	72	42.0	48.0	60.0	72.0	90.0	96.0	1829	16

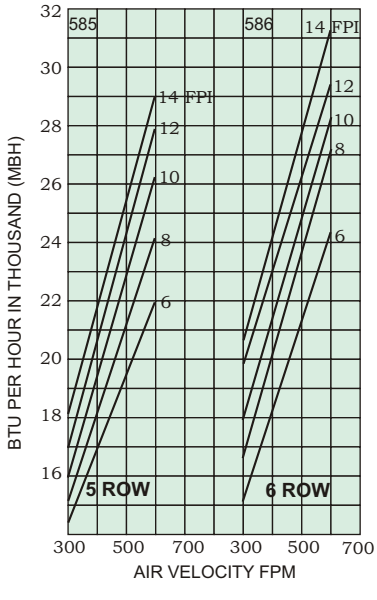
FL = Fin High FH = Fin High

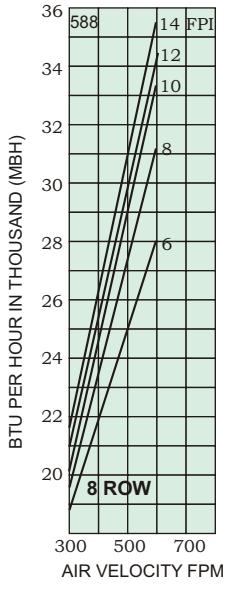
CoilCo DX Coils Capacity Correction Factors



CoilCo DX Evaporator Coils - Quick selection Curves







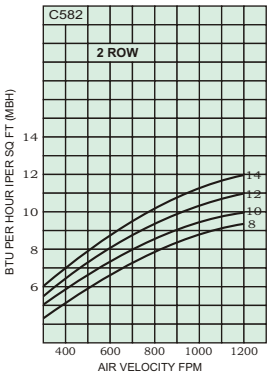
Guide Lines for Ordering Evaporator Coils

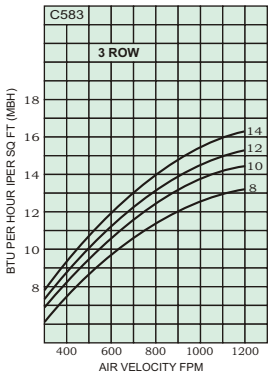
1. Coil Fin Height (FH)
2. Coil Fin Length (FL)
3. Coil Face Area
4. Row deep5.
5. Fins per inch
6. Capacity TR/hr
7. Refrigerant type
8. Suction temperature
9. Liquid temperature

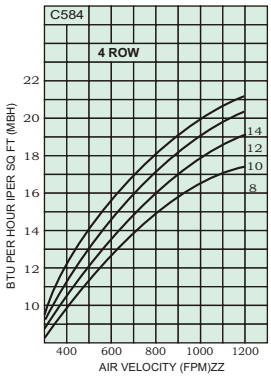
CoilCo (Condenser) Coils

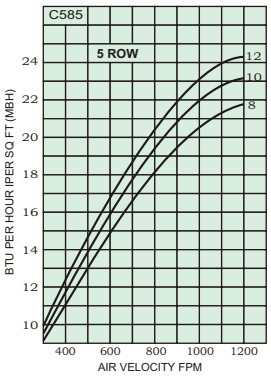
Condensing Halocarbon (Freon etc.) Gases

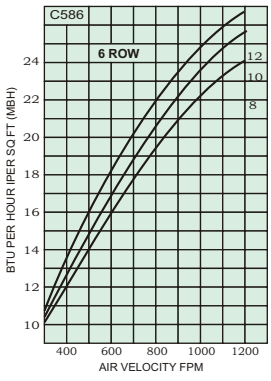
Selection of Refrigerant Condenser Curves (100-130 deg. F)
2, 3, 4, 5, 6, 8 Row Deep Coils (capacity per Sq.ft coil face area)

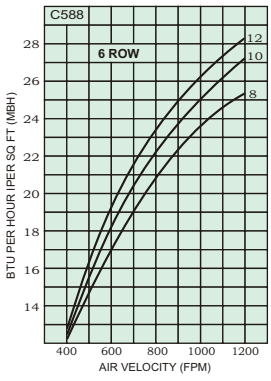




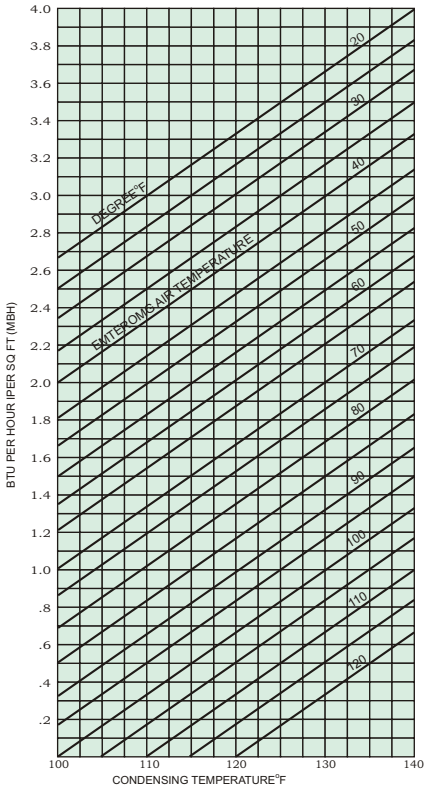








Condensers Capacity Correction Factors



Air Cooled Refrigerant Condensers

In air-cooled condenser coils, we have more than any manufacturer. More of the configurations, circuiting patterns and special constructions you need for optimum system performance.

Because when it comes to meeting all the needs of compressorized system heat transfer, we're concerned about perfect condensing system.

Air-Cooled Refrigerant Condenser Coils :

Condenser coils provide desuperheating and subcooling of refrigerant by circulating cooling air over the outside bare or finned tube heat transfer surfaces. All air-cooled condenser coils are factory tested.

Mounting : Condenser coils can be mounted remotely or incorporated as an integral part of the compressorized refrigeration system.

Air/Refrigerant Side Control : Load fluctuations and lower outside air side temperatures during cool seasons can be controlled by two separate methods.

Air-side control requires one or multiple control sequences of coil face dampers, cycling of multiple fans or variable speed motors. Refrigerant side control employs actuators to modulate refrigerant temperature and pressure.

Construction Features : Condenser coil surfaces in a practically unlimited range of field-proven designs and special constructions offer the selection range needed for today's tough job-matched specifications. Standard tube diameters 5/8 inch, and are available in seamless copper and vertical air flow patterns.

Fin surfaces : Our flat corrugated or tension wound fin configurations give you the widest possible range of spacings, highest operating efficiencies, and optimum refrigerant pressure drops in aluminum, copper and other materials.

Special duties : For severe duty applications requiring air side corrosive and erosive protection, special materials and protective coatings are available on request.

CoilCo Heat-transfer Coils

Technical Specifications

1. Chilled Water Coil- Selections
The selection of our chilled water coils is being done on our most advanced Computer Aided Design (CAD) which is the unique feature of our American technology.

2. Coil Construction
The manufacturing of our coils is through computer aided program (CAM) which is one of the best program for precise manufacturing of coils.

3. Fin Processing & Mechanical
Sine-wave aluminum fins are being produced on our world's most advanced' CNC ' machine. The fin-tube contact is excellent, because of our modern tube expansion equipment, which ultimately makes the high efficiency heat- transfer coils.

4. Coil Fin Spacing (FPI) Row Deep
Coil Company - Chilled Water Coils for cooling and dehumidification are available from 6 to 12 fins per inch (FPI).

Standard Row-deep are of 2, 4, 6, 8, 12 of coils. However if required we can produce the coils any row deep from 1 to 16 row as per customer's requirements

Coil Company produces 5/8" tube diameter up to 12 row single-plate-fin coils, which is one of the best facility available with us.

5. Coil Materials
Material used in manufacturing of our coils is of high standard it may be copper tubes, steel pipes, or aluminum for fins. The aluminum is of very high grade, special alloy that has the capability to produce un-cracked full drawn collars from 3 to 12 fins per inch.

6. Coil Chilled Water - Circuits
Because of our computer aided design (CAD) we have certified selections of coil water circuits for highest possible heat-transfer.

This facility selects the optimum use of the water velocity with certified water pressure drop. Most of the coils in the field get-failed because of the wrong coil circuits.

7. Testing of Coils
All Coil Company' Chilled Water Coils' are tested at 300 PSIG (20Kg / sq. cm) pneumatic test pressure under water.

View of ICL-technologies Engineering Center

CoilCo Engineering Center






ICL-technology Center - New Delhi, India

Why should you buy - ? CoilCo- Coils

Advantages & Benefits 10 - Special reasons

1. The American-technology : Coil Company India established an Indo-American Joint Venture in 1984 with Coil Company Inc USA. We designed, manufactured and supplied thousands of these finned surface coils during this past 20 years.

2. Range of Hi-efficiency Coils : We have most advanced CNC machines which produce Sine-wave plate aluminum and copper fins from 3 to 12 FPI and one to 12 row deep. Coils are available from smallest size to largest size from **1.0 to 200 sq. ft** coil face area.

3. Selection of Coils : coils are selected on (CAD) the most advanced computer aided design and advanced composite program to make sure about performance. The coils can be selected through our computer having specified safety margin to take care at peak load conditions.

4. Energy-efficient Coils : The CoilCo Coils save substantial amount of energy through precise selection of coils. It may be because of fin spacing (FPI), row deep, circuits or coil face velocity, the ultimate aim is to save energy and to achieve the best performance under given conditions.

5. Quality Coils in India : Our coils are available with international standard of manufacturing and all materials pass through rigorous check before use. Ultimately the final quality of our coils is one of the best available in India.

6. Coils for New Projects : In the past 20 years whenever there is a new project most of the End-users or Consultants ask and insist to have CoilCo coils. The reason is very clear because most of the customers have used our coils either for replacement or in new projects.

7. Replacement old inefficient Coils : A very large number of users have replaced their old and inefficient coils. These coils they had purchased from different sources. Once Coil Co coils are installed it gives years after years best performance without any trouble.

8. Proven Performance & Reliability : Thousands of our coils are in operation all over India. Once customers use our coils, they place repeat orders (cooling, dehumidification, heating or condensing) system, it may be replacement or new projects.

9. Quickest Delivery : We have the fastest delivery period of our coils, because we use (CAM) computer aided manufacturing program to produce our coils in the shortest possible period. In some urgent cases we have one-week delivery period.

10. Proven Life Record of our Coils : Our cooling or heating coils have record of life. In many cases they are in use since more than 15 years of period. Once our customers have used our coils, they have never looked to any other suppliers at all.

India's No. 1 - Established in 1984

1. Steam Coils

2. Chilled Water Coils

3. Hot Water Coils

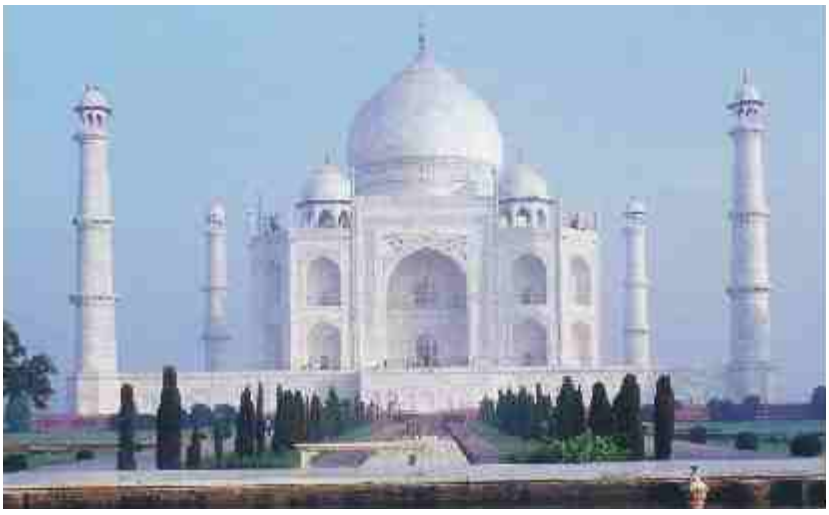
4. Evaporator Coils

5. Condensers Coils

Air Conditioning Coils

Industrial Coils

Keep the - World Atmosphere & Environment
- Clean & Green -



It can only be done with the Knowledge, Innovations, Technology and Will to do it - - -

Knowledge & Technology is the only Solution - - - to keep the Atmosphere clean and it is the responsibility of all the human beings living on the planet. Industrialization does not mean to pollute world's atmosphere we certainly need to breathe the clean air as well as pollution-free world.

Conserve - - Electricity, Energy and Natural Resources : It may be for human-being, irrigation to maintain the green land or for industrialization, the clean atmosphere is must. We cannot afford to pollute the world's atmosphere any more with chemicals or any kind of industrial process, which spoils the nature's wonderful gift.

We should strive hard, must find out the resources, which can be obliged to nature and in harmony with this magnificent and amazing planet, that's it.

International Coil Ltd

Leader in Heat-transfer Technology

Head Office : A-21/24, Naraina Industrial Area Ph. II, New Delhi - 110 028 (India)
Tel.: 91-11-25701967, 25701968, 25891231, 41417720, 41417721 Fax : 91-11-25893126
Website : www.icl-tech.com Email : sales@icl-tech.com