

اصفهان دما

Isfahan Dama Co.



# CHILLER



190-1397-2

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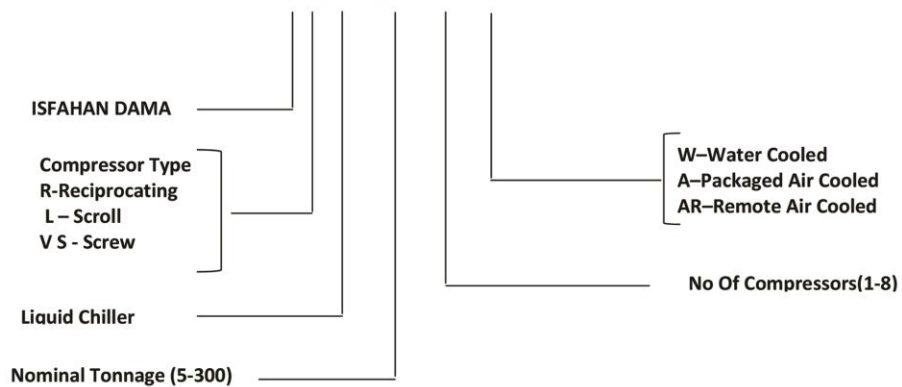
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## NOMENCLATURE

### IRLC 40 - 1 W



### **INTRODUCTION :**

Chillers are used to lower water or brine temperature in air conditioning or industrial applications.

Chillers are generally manufactured in two type:

- 1- Water Cooled Condenser
- 2- Air Cooled Condenser



**Water Cooled Chiller**



**Air Cooled Chiller**

**FEATURES:**

**CONDENSERS:**

In water cooled condenser chillers, condensers are shell and tube types, which are manufactured in accordance to TEMA standards. The condensers have full pump-down capacity and are complete with relief devices and purge valves. The entire unit is designed, constructed and tested to meet ASME code requirements. BPHE (Braze Plate Heat Exchanger) condensers may be used, in some applications.

In air cooled condenser chillers, they consist of coils and fans, which are cooled directly by ambient air. Type and number of coils and fans are given in air cooled condenser catalogue, depending on capacity and installation location.



Air Cooled Condenser



Water Cooled Condenser



(Braze Plate Heat Exchanger)  
BPHE Condenser

**EVAPORATORS:**

Evaporators are shell and tube types, which are manufactured in accordance to TEMA standards. Seamless copper tubes are roller expanded into steel tube sheets, complete with Aluminum notched spiral star inserts, water baffle arrangements, multi pass steel refrigerant heads and 19 mm thick. Closed cell foamed insulation. BPHE Evaporators may be used if requested or depending on applications. In air conditioning applications, specially in packaged units and air handling units and also in refrigeration, DX (Direct Expansion) coils are used.



DX Coil  
(Direct Expansion Evaporator)



Shell & Tube Evaporator



(Braze Plate Heat Exchanger)  
BPHE Evaporator

### REFRIGERANT CIRCUIT:

Each refrigerant circuit is carefully engineered and designed using matched components and is fully assembled and adjusted at the factory. Accessories and control components furnished are thermal or Electronic Expansion valve, solenoid valve, Replaceable cartridge refrigerant filter-dryer ,sight glass and moisture indicator, refrigerant charging and liquid line shut off valve.

### CONTROL DEVICES:

All control devices are from famous ,high quality brands .Expansion valves are thermostatic or Electronically controlled. Other devices, solenoid valve, sight glass, filter drier ,shut off valves... are used in refrigerant line to assist improved operation.



TXV(Thermostatic Expansion Valve)



Solonoid Valve



Electronic Expansion Valve & Drive

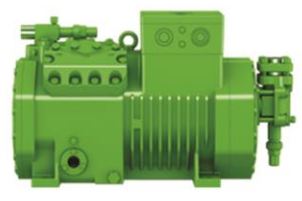
### COMPRESSORS :

Compressors used in ISFAHAN DAMA chillers are generally four types.

- 1- Semi Hermetic Reciprocating Compressor
- 2- Hermetic Reciprocating Compressor
- 3- Hermetic Scroll Compressor
- 4- Semi Hermetic compact screw Compressor

They are installed in chiller units in accordance to capacity and applications. Compressors are Selected from Best quality manufacturers as : BITZER-DANFOSS-COPLAND - CARLYLE – CARRIER – FRASCOLD...

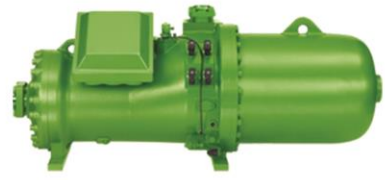
### COMPRESSORS



Semi Hermetic Reciprocating Compressors



Hermetic Scroll Compressors



Screw Compressors



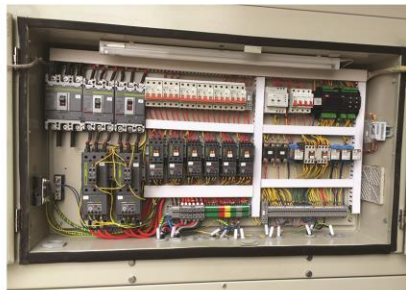


### CONTROL PANEL:

Capacity control and all devices in units operate properly to give the best cycle operation. control panel in addition to supply electrical needs to devices, automatic controls and monitoring parts lines are installed in.

### CONTROL DEVICES USED ARE:

- PLC control from DANFOSS – CARREL...
- HMI – Drives –Sensors are DANFOSS – CARREL...
- Temperature and pressures in refrigerant are monitored and controlled.
- Capable to start up The unit, manually or automatically.



## CORRECTION FACTORS

### FOULING FACTOR:

Fouling factor in condenser (water cooled) and evaporator is considered 0.0005 Ft<sup>2</sup>.h. °F/Btu (0.088 °C/Kw). By increasing fouling factor heat transfer is lowered and chiller capacity is less and the power consumption increases. Use the correction factors for different fouling factors.

**Table 1:**

Fouling Factor	Capacity	Power Factor
0.00025	1.01	1.00
0.0005	1.00	1.00
0.0010	0.97	0.99
0.0020	0.92	0.97

### LOW TEMPERATURE OPERATION:

When liquid temperature is lower than normal, mixture of water and glycol should be used. Freezing point of ethylene glycol and propylene glycol is given in the table:

**Table 2:**

Concentration by weight %	Ethylene Glycol °F	propylene glycol °F
20	15	17
30	2	4
40	-14	-13
50	-37	-28
55	-50	-40



### OPERATION IN MODERATE SEASONS:

In case of low ambient temperature operation, Fan cycling is done .Fans are controlled from high pressure controls. In this case ,condenser fans are controlled to keep condensing temperature in design range.

### TEMPERATURE RANGE:

Capacity rating in tables are based on 10°F (5.5°C) Temperature range in evaporator. If  $\Delta t$  other than listed is required, use the factors bellow.

**Table 3:**

Temperature Range °F	Capacity Factor	Power Consumption Factor
8	.0995	0.985
10	1.000	1.000
12	1.005	1.002
14	1.011	1.004
16	1.015	1.006

## EQUIPMENT SELECTION

### Example (Water Cooled Condenser):

**Given Data :**

Cooling Capacity	63	Ton
Leaving chilled Water Temp	45	°F
Chilled Water Range	10	°F
Entering Condenser Water Temp.	85	°F
Condenser Water Range	10	°F
Fouling Factor :	0.0005	

**Acquire :**

- Chiller Model No.
- Unit Selected Actual Capacity
- Power input
- Evaporator and Condenser Flow Rate
- Evaporator and Condenser Pressure Drop

From Table 1 & 3

Capacity Correction Factor	1.00
Power Consumption Correction Factor	1.00

$$\text{Actual Capacity} = \frac{\text{Cooling Capacity}}{\text{Capacity Correction Factor}} = \frac{63}{1.00} = 63 \text{ Ton}$$

Actual capacity for water cooled chiller can be obtained from table 4. Based on required capacity in specified conditions in this example, unit model IRLC 070-2W is selected.

-Other required information can be obtained from aforementioned table :

$$\text{Power Consumption} = \frac{\text{Power input}}{\text{Power Correction Factor}} = \frac{50.6}{1.00} = 50.6 \text{ Kw}$$

Evaporator Water Flow Rate	155.2	GPM
Condenser Water Flow Rate	194	GPM
Unit selected actual capacity	64.7	TON

Based on the selected chiller model No. and Evaporator and Condenser Flow Rates, we obtain Evaporator and condenser pressure drop from charts No 6 and 8.

Evaporator Pressure drop	19.4	Ft
Condenser Pressure drop	7.0	Ft

### Example: (Air Cooled Condenser)

**Given Data :**

Cooling Capacity	63	Ton
Leaving chilled Water Temp	45	°F
Chilled Water Range	10	°F
Ambient Air Temp.	100	°F
Condensing Temp.	120	°F
Fouling Factor :	0.0005	

**Acquire :**

- Chiller Model No.
- Unit Selected Actual Capacity
- Power input
- Evaporator Flow Rate and Pressure drop
- Heat Rejected from unit

From Table 1 & 3:

- Capacity Correction Factor	1.00
- Power Consumption Correction Factor	1.00

$$\text{Actual Capacity} = \frac{\text{Required Cap.}}{\text{Correction Factor}} = \frac{63}{1.00} = 63 \text{ Ton}$$

From Table 5 : Chiller Model No. IRLC 80 – 2 A is selected. Required data can be obtained from aforementioned table :

-Evaporator Water Flow Rate	156.8	GPM
-Total Heat Rejection From Unit	84.8	Ton
- Power input	68.4	Kw (121.4 Amp)
Unit Selected Actual Capacity	65.3	Ton
Evaporator Pressure Drop	17.3	Ft

**Note :**

All data and information is obtained from BITZER compressor software. Compressor Models and quantity installed in chillers are given in table 6. All models are one or two refrigeration circuits. For more information on all equipment contact us:

info@isfahandama.com  
sales@isfahandama.com

## RECIPROCATING LIQUID CHILLER(WATER COOLED)

**Table 4 : ENGINEERING DATA**

MODEL IRLC	Actual Cap. Ton	Evap. Water Flow Rate GPM	Cond. Water Flow Rate GPM	Dimensions(mm)			Weight kg	Elec.	
				L .	W .	H .		KW.	Amp.
005 – 1 W	4.9	11.8	14.8	1800	750	1800	390	4.0	7.5
008 – 1 W	7.4	17.9	22.3	1800	750	1800	510	6.0	10.8
010 – 1 W	10.0	24.0	30.0	1800	750	1800	600	7.7	13.8
015 – 1 W	13.9	33.3	41.6	2000	750	1800	720	10.8	19.4
020 – 1 W	18.4	44.1	55.1	2000	750	1800	800	14.3	24.5
025 – 1 W	21.5	51.7	64.6	2000	750	1800	840	16.8	29.5
030 – 1 W	24.9	59.8	74.7	2300	750	1800	980	19.2	34.7
035 – 1 W	32.3	77.6	97.0	2300	750	1800	1040	25.3	45.1
040 – 1 W	37.1	89.1	111.4	2300	750	1800	1100	28.9	53.6
050 – 1 W	44.6	107.1	133.8	2300	750	1800	1260	35.0	72.7
020 – 2 W	20.0	48.0	60.0	2300	1200	2050	1150	15.4	27.7
030 – 2 W	27.8	66.6	83.3	2300	1200	2050	1300	21.5	38.8
040 – 2 W	36.7	88.2	110.2	2300	1200	2050	1450	28.5	49.0
050 – 2 W	43.1	103.4	129.3	2300	1200	2050	1500	33.5	59.0
060 – 2 W	49.8	119.6	149.5	2800	1200	2050	1700	38.5	69.4
070 – 2 W	64.7	155.2	194.0	2800	1200	2050	1860	50.6	90.2
080 – 2 W	74.3	178.3	222.8	3400	1200	2050	2050	57.8	107.2
100 – 2W	89.2	214.1	267.7	3400	1200	2050	2250	70.0	145.2
030 – 3 W	30.0	72.0	90.0	2300	1200	2050	1650	23.0	41.5
045 – 3 W	41.6	124.9	124.9	2300	1200	2050	1750	32.3	58.2
060 – 3 W	55.1	132.3	165.3	3200	1200	2050	2130	42.8	73.5
075 – 3W	64.6	155.2	193.9	3200	1200	2050	2260	50.3	88.5
090 – 3W	74.7	179.3	224.2	3200	1200	2050	2550	57.7	104.1
105 – 3W	97.0	232.8	291.0	3200	1200	2170	2740	75.9	135.3
120 – 3W	111.4	267.4	334.3	3400	1200	2170	2900	86.7	160.8
150 – 3W	133.8	321.2	401.5	3400	1200	2170	3100	105.0	218.1
080 – 4 W	73.5	176.3	220.4	3300	1200	2130	2600	57.0	98.0
100 – 4 W	86.2	206.9	258.6	3300	1200	2130	3000	43.1	118.0
120 – 4 W	99.6	239.1	298.9	3300	1200	2130	3300	77.0	150.8
140 – 4 W	129.3	310.4	388.0	3300	1200	2130	3590	101.2	180.4
160 – 4 W	148.6	356.5	445.7	3300	1200	2130	3850	115.6	214.4
200 – 4 W	178.4	428.3	535.2	3300	1200	2130	4200	140.0	290.8
240 – 6 W	222.8	534.8	668.5	3700	1400	2130	4500	173.4	321.6
300 – 6 W	267.7	642.4	803.0	3700	1400	2130	5200	210.0	436.2

Based on ; 45<sup>oF</sup> L.W.T – 95<sup>oF</sup> L.C.W.T . at nominal Conditions .

## RECIPROCATING LIQUID CHILLER ( AIR COOLED )

**Table 5 : ENGINEERING DATA**

MODEL IRLC	Actual Cap.	Evap. Water Flow Rate	T.H.R.	Dimensions(mm)			Weight	Elec.	
	Ton	GPM	Ton	L .	W .	H .	kg	KW.	Amp.
005 – 1 A	4.3	10.3	5.6	1800	750	1550	335	4.7	8.5
008 – 1A	6.5	15.5	8.5	1800	750	1550	450	7.2	12.5
010 – 1 A	8.8	21.0	11.3	1800	750	1550	530	9.0	15.8
015 – 1 A	12.1	29.1	15.7	2000	750	1550	620	12.6	22.1
020 – 1 A	16.1	38.6	20.9	2000	750	1550	690	16.8	28.4
025 – 1 A	19.0	45.5	24.6	2000	750	1550	730	19.8	34.1
030 – 1 A	22.0	52.7	28.5	2300	750	1550	820	22.8	40.1
035 – 1 A	28.5	68.3	37.0	2300	750	1550	950	30.1	52.2
040 – 1 A	32.7	78.4	42.4	2300	750	1550	1100	34.2	60.7
050 – 1 A	39.3	94.4	51.1	2300	750	1550	1170	41.5	79.9
020 – 2 A	17.5	42.0	22.6	2300	1200	1800	910	18.0	31.5
030 – 2 A	24.3	58.3	31.4	2300	1200	1800	1020	25.2	44.2
040 – 2 A	32.2	77.2	40.2	2300	1200	1800	1240	33.7	56.8
050 – 2 A	37.9	91.1	49.2	2300	1200	1800	1250	39.6	68.2
060 – 2 A	44.0	105.5	56.9	2800	1200	1800	1460	45.6	80.2
070 – 2 A	56.9	136.6	74.0	2800	1200	1800	1620	60.2	104.4
080 – 2 A	65.3	156.8	84.8	3400	1200	1800	1710	68.4	121.4
100 – 2 A	78.6	188.7	102.2	3400	1200	1800	1800	83.0	159.8
030 – 3 A	26.3	63.1	34.0	2300	1200	1800	1380	27.0	47.3
045 – 3 A	36.4	87.4	47.2	2300	1200	1800	1440	37.9	66.3
060 – 3 A	48.3	115.9	62.7	3200	1200	1800	1750	50.5	85.2
075 – 3 A	56.9	136.6	73.9	3200	1200	1800	1860	59.5	102.3
090 – 3 A	65.9	158.2	85.4	3200	1200	1800	2050	68.4	120.3
105 – 3 A	85.4	205.0	111.1	3200	1200	1800	2170	90.3	156.6
120 – 3 A	98.0	235.2	127.2	3400	1200	1920	2330	102.6	182.1
150 – 3 A	118.0	283.1	153.3	3400	1200	1920	2450	124.5	239.7
080 – 4 A	64.4	154.5	83.6	3300	1200	1840	2180	67.4	113.6
100 – 4 A	75.9	182.1	98.5	3300	1200	1840	2470	79.3	136.4
120 – 4 A	87.9	211.0	113.8	3300	1200	1840	2630	91.2	160.4
140 – 4 A	113.8	273.2	148.8	3300	1200	1840	2810	120.4	208.8
160 – 4 A	130.7	313.6	169.6	3300	1200	1840	3150	136.8	242.8
200 – 4 A	157.3	377.5	204.4	3300	1200	1840	3400	166.0	319.6
240 – 6 A	196.0	470.5	254.4	3700	1400	1840	3600	205.2	364.2
300 – 6 A	235.9	566.2	306.6	3700	1400	1840	4300	249.0	479.4

Based on ; 45 °F L.W.T – 120 °F Cond . Temp . at nominal Conditions.

**Table 6 : Tech. spec ENGINEERING DATA**

Model No. IRLC	COMPRESSOR				Refrigerant Charge kg.		Comp. oil charge Lit	Weight kg.		
		CIRCUIT 1		CIRCUIT 2		Circ 1		Circ 2	Shipping	Oper.
		NO.	HP	NO.	HP					
005 - 1	W	1	5	---	---	4.7	---	2.0	400	360
	A	1	5	---	---				510	400
008 - 1	W	1	7.5	---	---	6	---	2.0	600	460
	A	1	7.5	---	---				720	540
010 - 1	W	1	10	---	---	7.5	---	2.6	800	600
	A	1	10	---	---				840	620
015 - 1	W	1	15	---	---	12	---	2.6	980	745
	A	1	15	---	---				1040	810
020 - 1	W	1	20	---	---	17	---	4.0	1100	890
	A	1	20	---	---				1400	1100
025 - 1	W	1	25	---	---	17.5	---	4.0	1300	1020
	A	1	25	---	---				1450	1100
030 - 1	W	1	30	---	---	19	---	4.5	1500	1140
	A	1	30	---	---				1700	1300
035 - 1	W	1	35	---	---	21	---	4.75	1780	1420
	A	1	35	---	---				1900	1530
040 - 1	W	1	40	---	---	23	---	4.75	2060	1700
	A	1	40	---	---				1650	1170
050 - 1	W	1	50	---	---	30	---	4.75	1750	1300
	A	1	50	---	---				2130	1620
020 - 2	W	1	10	1	10	13	13	5.2	1150	930
	A	1	10	1	10					
030 - 2	W	1	15	1	15	14	14	5.2	1300	1020
	A	1	15	1	15					
040 - 2	W	1	20	1	20	15	15	8	1450	1100
	A	1	20	1	20					
050 - 2	W	1	25	1	25	16	16	8	1500	1140
	A	1	25	1	25					
060 - 2	W	1	30	1	30	17	17	9	1700	1300
	A	1	30	1	30					
070 - 2	W	1	35	1	35	18	18	9.5	1780	1420
	A	1	35	1	35					
080 - 2	W	1	40	1	40	19	19	9.5	1900	1530
	A	1	40	1	40					
100 - 2	W	1	50	1	50	22	22	9.5	2060	1700
	A	1	50	1	50					
030 - 3	W	2	10	1	10	21	13	7.8	1650	1170
	A	2	10	1	10					
045 - 3	W	2	15	1	15	22	14	7.8	1750	1300
	A	2	15	1	15					
060 - 3	W	2	20	1	20	25	15	12.0	2130	1620
	A	2	20	1	20					
075 - 3	W	2	25	1	25	28	17	12.0	2260	1780
	A	2	25	1	25					
090 - 3	W	2	30	1	30	35	17.5	13.5	2550	2050
	A	2	30	1	30					
105 - 3	W	2	35	1	35	36	18	14.25	2600	2170
	A	2	35	1	35					
120 - 3	W	2	40	1	40	39	23	14.25	2900	2300
	A	2	40	1	40					
150 - 3	W	2	50	1	50	44	22	14.25	3250	2700
	A	2	50	1	50					
080 - 4	W	2	20	2	20	25	25	16.0	2600	2100
	A	2	20	2	20					
100 - 4	W	2	25	2	25	28	28	16.0	3000	2400
	A	2	25	2	25					
120 - 4	W	2	30	2	30	31	31	18.0	3300	2800
	A	2	30	2	30					
140 - 4	W	2	35	2	35	36	36	19.0	3500	2950
	A	2	35	2	35					
160 - 4	W	2	40	2	40	39	39	19.0	3850	3100
	A	2	40	2	40					
200 - 4	W	2	50	2	50	44	44	19.0	4400	3500
	A	2	50	2	50					
240 - 6	W	3	40	3	40	63	63	28.5	4800	3800
	A	3	40	3	40					
300 - 6	W	3	50	3	50	66	66	28.5	5700	4600
	A	3	50	3	50					



## RECIPROCATING LIQUID CHILLERS

### ELECTRICAL DATA

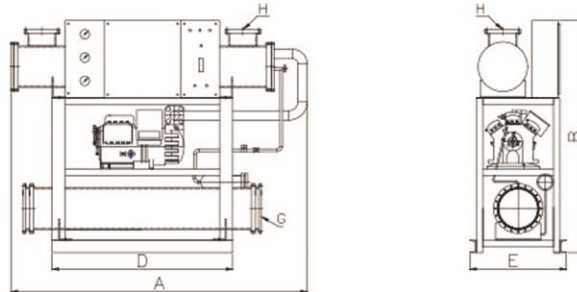
**Table 7:**

Model	Nom. Cap. Ton	Compressor (EACH)						System				V-Ph-Hz	Cable Size
		NO	Max Power (KW)	Max Oper. Current	Name Plate Power Kw	Name Plate Current (A)	Locked Rotor Current (A)	Full Load Current (A)	Max. Starting Current (A)	Wire Sizing Current (A)			
IRLC 005-1W-A	5	1	5.8	18.8	4.75	8.55	50.0	8.55	50.0	19.0	4 × 4	380 ...420 / 3 / 50	
IRLC 008-1W-A	7.5	1	8.9	28.7	7.2	12.5	81.0	12.5	81.0	29.0	4 × 6		
IRLC 010-1W-A	10	1	12	19.9	9.01	15.76	90.0	15.76	90.0	32.0	4 × 10		
IRLC 015-1W-A	15	1	16	28.2	12.62	22.1	117.0	22.1	117.0	40.0	4 × 10		
IRLC 020-1W-A	20	1	21	37.2	16.84	28.4	143.0	28.4	143.0	54.0	4 × 16		
IRLC 025-1W-A	25	1	25	44	19.82	34.1	180.0	34.1	180.0	61.0	4 × 16		
IRLC 030-1W-A	30	1	28	51.2	22.8	40.1	210.0	40.1	210.0	79.0	3 × 25/16		
IRLC 035-1W-A	35	1	36	64.4	30.1	52.2	260.0	52.2	260.0	95.0	3 × 35/16		
IRLC 040-1W-A	40	1	42	73.9	34.2	60.7	315.0	60.7	315.0	113.0	3 × 35/16		
IRLC 050-1W-A	50	1	51	96.2	41.5	79.9	350.0	79.9	350.0	131.0	3 × 50/25		
IRLC 020-2W-A	20	2	12	19.9	9.01	15.76	90.0	15.76	90.0	31.52	4 × 16		
IRLC 030-2W-A	30	2	16	28.2	12.62	22.1	117.0	22.1	117.0	44.2	3 × 25/16		
IRLC 040-2W-A	40	2	21	37.2	16.84	28.4	143.0	28.4	143.0	56.8	3 × 35/16		
IRLC 050-2W-A	50	2	25	44	19.82	34.1	180.0	34.1	180.0	68.2	3 × 35/16		
IRLC 060-2W-A	60	2	28	51.2	22.8	40.1	210.0	40.1	210.0	79.0	3 × 50/25		
IRLC 070-2W-A	70	2	36	64.4	30.1	52.2	260.0	52.2	260.0	104.4	3 × 50/25		
IRLC 080-2W-A	80	2	42	73.9	34.2	60.7	315.0	60.7	315.0	121.4	3 × 70/35		
IRLC 100-2W-A	100	2	51	96.2	41.5	79.9	350.0	79.9	350.0	159.8	3 × 70/35		
IRLC 030-3W-A	30	3	12	19.9	9.01	15.76	90.0	15.76	90.0	47.28	3 × 25/16		
IRLC 045-3W-A	45	3	16	28.2	12.62	22.1	117.0	22.1	117.0	66.3	3 × 35/16		
IRLC 060-3W-A	60	3	21	37.2	16.84	28.4	143.0	28.4	143.0	85.2	3 × 50/25		
IRLC 075-3W-A	75	3	25	44	19.82	34.1	180.0	34.1	180.0	102.3	3 × 50/25		
IRLC 090-3W-A	90	3	28	51.2	22.8	40.1	210.0	40.1	210.0	120.3	3 × 70/35		
IRLC 105-3W-A	105	3	36	64.4	30.1	52.2	260.0	52.2	260.0	156.6	3 × 120/70		
IRLC 120-3W-A	120	3	42	73.9	34.2	60.7	315.0	60.7	315.0	182.1	3 × 95/50		
IRLC 150-3W-A	150	3	51	96.2	41.5	79.9	350.0	79.9	350.0	239.7	3 × 120/70		
IRLC 080-4W-A	80	4	21	37.2	16.84	28.4	143.0	28.4	143.0	113.6	3 × 70/35		
IRLC 100-4W-A	100	4	25	44	19.82	34.1	180.0	34.1	180.0	136.4	3 × 70/35		
IRLC 120-4W-A	120	4	28	51.2	22.8	40.1	210.0	40.1	210.0	160.4	3 × 95/50		
IRLC 140-4W-A	140	4	36	64.4	30.1	52.2	260.0	52.2	260.0	208.8	3 × 120/70		
IRLC 160-4W-A	160	4	42	73.9	34.2	60.7	315.0	60.7	315.0	242.8	3 × 120/70		
IRLC 200-4W-A	200	4	51	96.2	41.5	79.9	350.0	79.9	350.0	319.6	3 × 185/95		
IRLC 240-6W-A	240	6	42	73.9	34.2	60.7	315.0	60.7	315.0	364.2	3 × 240/120		
IRLC 300-6W-A	300	6	51	96.2	41.5	79.9	350.0	79.9	350.0	479.4	3 × 300/150		

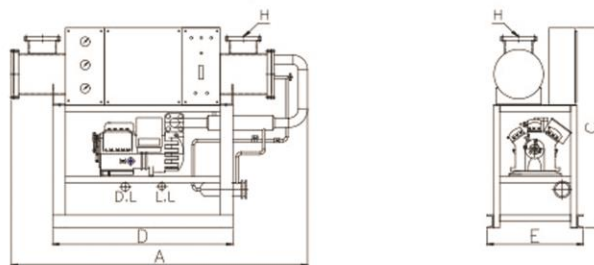


### ONE COMPRESSOR DIMENSIONS

WATER COOLED



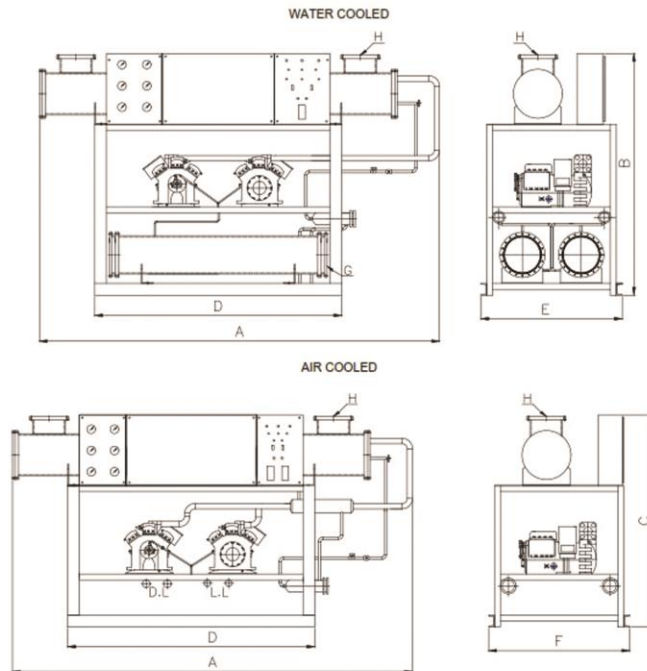
AIR COOLED



**Table 6 :**

Model	A	B	C	D	E	G	H	D.L	L.L.
IRLC 10 - 1W ,A	1800	1800	1550	1400	750	2 × 1 1/2"	2 × 2"	1 1/8"	5/8"
IRLC 15 - 1W ,A	2000	1800	1550	1400	750	2 × 2"	2 × 2"	1 1/8"	7/8"
IRLC 20 - 1W ,A	2000	1800	1550	1400	750	2 × 2"	2 × 2 1/2"	1 1/8"	7/8"
IRLC 25 - 1W ,A	2000	1800	1550	1400	750	2 × 2"	2 × 2 1/2"	1 1/8"	7/8"
IRLC 30 - 1W ,A	2300	1800	1550	1400	750	2 × 1 1/2"	2 × 3"	1 3/8"	7/8"
IRLC 35 - 1W ,A	2300	1800	1550	1400	750	2 × 1 1/2"	2 × 3"	1 3/8"	1 1/8"
IRLC 40 - 1W ,A	2300	1800	1550	1400	750	2 × 3"	2 × 3"	1 3/8"	1 1/8"
IRLC 50 - 1W ,A	2300	1800	1550	1400	750	2 × 3"	2 × 3"	1 5/8"	1 1/8"

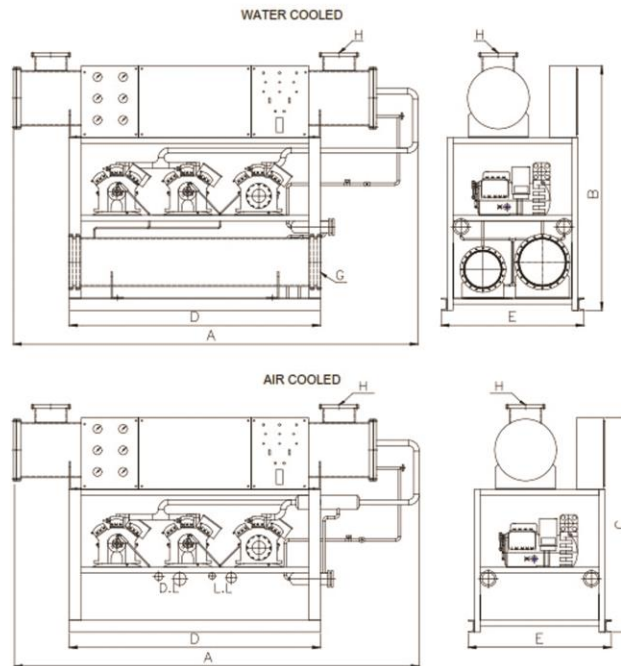
### TOW COMPRESSORS DIMENSIONS



**Table 9:**

Model	A	B	C	D	E	G	H	D.L	L.L.
IRLC 20 - 2W ,A	2300	2050	1800	1810	1200	4 × 1 1/2"	2 × 2 1/2"	2 × 1 1/8"	2 × 5/8"
IRLC 30 - 2W ,A	2300	2050	1800	1810	1200	4 × 2"	2 × 3"	2 × 1 1/8"	2 × 7/8"
IRLC 40 - 2W ,A	2300	2050	1800	1810	1200	4 × 2"	2 × 3"	2 × 1 1/8"	2 × 7/8"
IRLC 50 - 2W ,A	2300	2050	1800	1810	1200	4 × 2"	2 × 3"	2 × 1 1/8"	2 × 7/8"
IRLC 60 - 2W ,A	2800	2050	1800	2100	1200	4 × 2 1/2"	2 × 3"	2 × 1 3/8"	2 × 7/8"
IRLC 70 - 2W ,A	2800	2050	1800	2100	1200	4 × 2 1/2"	2 × 4"	2 × 1 3/8"	2 × 1 1/8"
IRLC 80 - 2W ,A	3400	2050	1800	2100	1200	4 × 3"	2 × 4"	2 × 1 3/8"	2 × 1 1/8"
IRLC 100 2W ,A	3400	2050	1800	2100	1200	4 × 3"	2 × 5"	2 × 1 5/8"	2 × 1 1/8"

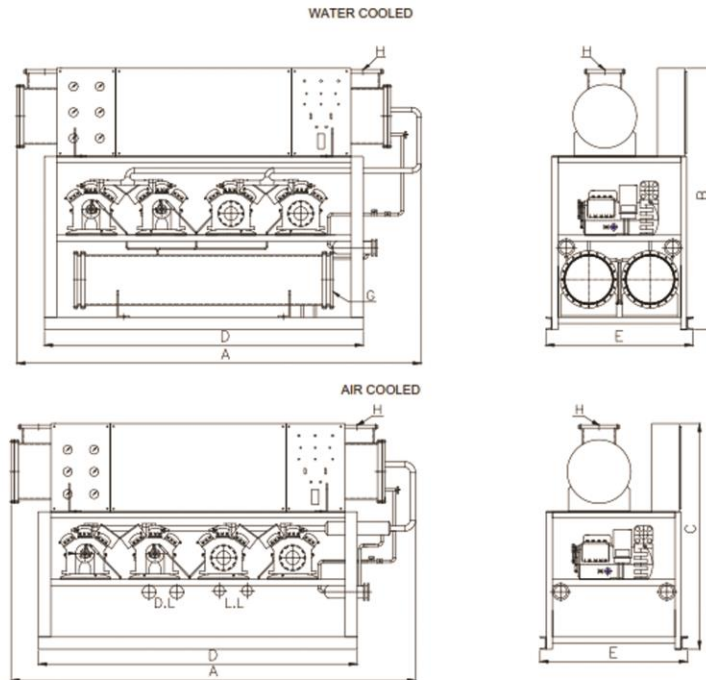
### THREE COMPRESSOR DIMENSION



**Table 10:**

Model	A	B	C	D	E	G	H	D.L	L.L.
IRLC 30 - 3W ,A	2300	2050	1800	1810	1200	2 × 2" 2 × 1 1/2"	2 × 3"	1 × 1 1/8" 1 × 1 3/8"	1 × 7/8" 1 × 1 1/8"
IRLC 45 - 3W ,A	2300	2050	1800	1810	1200	2 × 2 1/2" 2 × 2"	2 × 3"	1 × 1 1/8" 1 × 1 3/8"	1 × 7/8" 1 × 1 1/8"
IRLC 60 - 3W ,A	3200	2050	1800	2110	1200	2 × 3" 2 × 2"	2 × 4"	1 × 1 1/8" 1 × 1 3/8"	1 × 7/8" 1 × 1 1/8"
IRLC 75 - 3W ,A	3200	2050	1800	2110	1200	2 × 3" 2 × 2"	2 × 4"	1 × 1 1/8" 1 × 1 5/8"	1 × 1 1/8" 1 × 1 3/8"
IRLC 90 - 3W ,A	3200	2050	1800	2110	1200	2 × 3" 2 × 2 1/2"	2 × 5"	1 × 1 3/8" 1 × 1 5/8"	1 × 1 1/8" 1 × 1 3/8"
IRLC 105 - 3W,A	3200	2170	1800	2110	1200	2 × 4" 2 × 2 1/2"	2 × 5"	1 × 1 3/8" 1 × 1 5/8"	1 × 1 1/8" 1 × 1 5/8"
IRLC 120 - 3W,A	3400	2170	1920	2110	1200	2 × 4" 2 × 3"	2 × 5"	1 × 1 3/8" 1 × 2 1/8"	1 × 1 1/8" 1 × 1 5/8"
IRLC 150 3W ,A	3400	2170	1920	2110	1200	2 × 4" 2 × 3"	2 × 6"	1 × 1 3/8" 1 × 2 1/8"	1 × 1 1/8" 1 × 1 5/8"

### FOUR COMPRESSOR DIMENSIONS

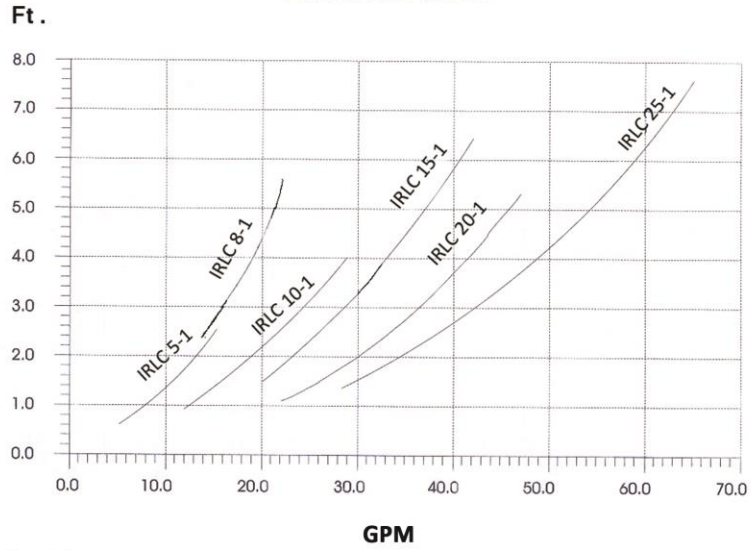


**Table 11:**

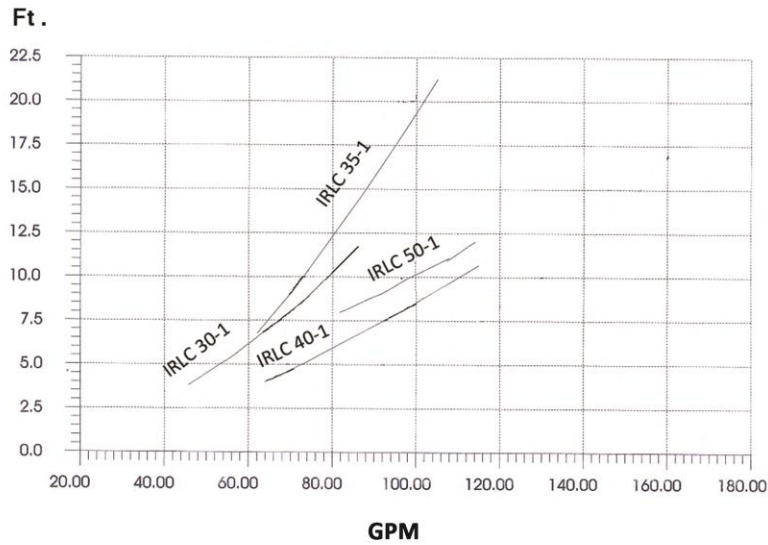
Model	A	B	C	D	E	G	H	D.L	L.L.
IRLC 80 - 4W ,A	3300	2130	1840	2600	1200	4 × 3"	2 × 4"	2 × 1 3/8"	2 × 1 1/8"
IRLC 100 - 4W,A	3300	2130	1840	2600	1200	4 × 3"	2 × 5"	2 × 1 5/8"	2 × 1 1/8"
IRLC 120 - 4W,A	3300	2130	1840	2600	1200	4 × 3"	2 × 5"	2 × 1 5/8"	2 × 1 3/8"
IRLC 140 - 4W ,A	3300	2130	1840	2600	1200	4 × 3"	2 × 6"	2 × 2 1/8"	2 × 1 3/8"
IRLC 160 - 4W,A	3300	2130	1840	2600	1200	4 × 4"	2 × 6"	2 × 2 1/8"	2 × 1 5/8"
IRLC 200 - 4W,A	3300	2130	1840	2600	1200	4 × 4"	2 × 6"	2 × 2 1/8"	2 × 1 5/8"

### EVAPORATOR

#### PRESSURE DROP

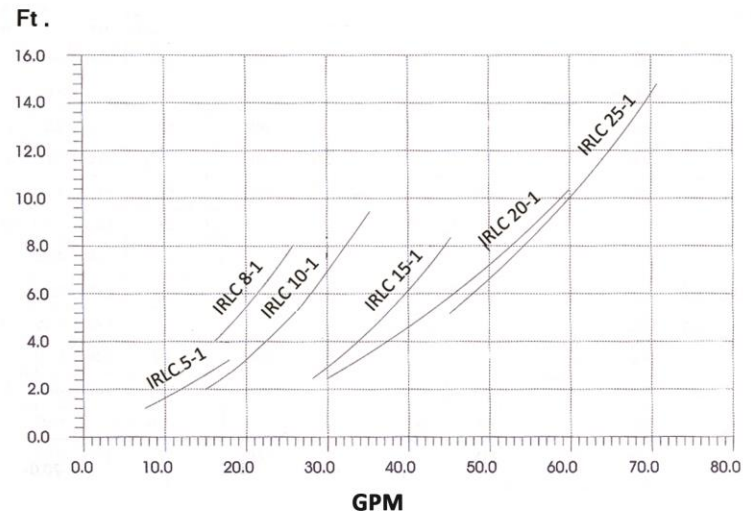


**Chart 1:**

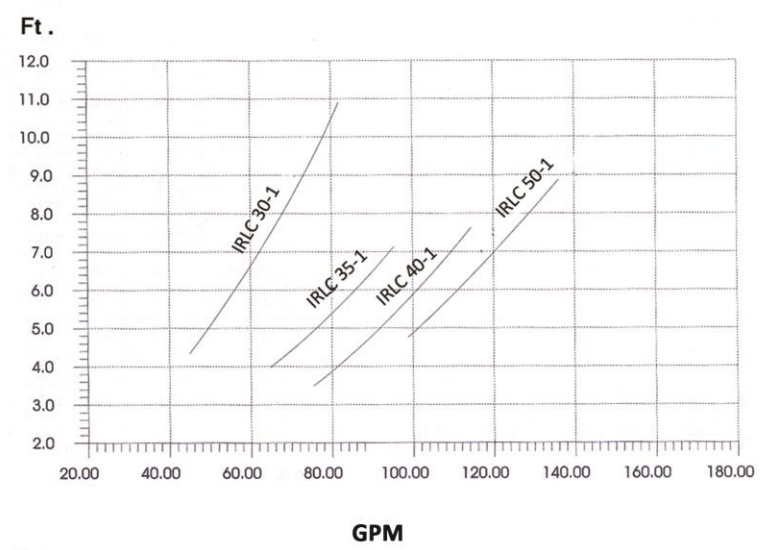


**Chart 2:**

**CONDENSER  
PRESSURE DROP**



**Chart 3:**



**Chart 4:**



### EVAPORATOR

#### PRESSURE DROP

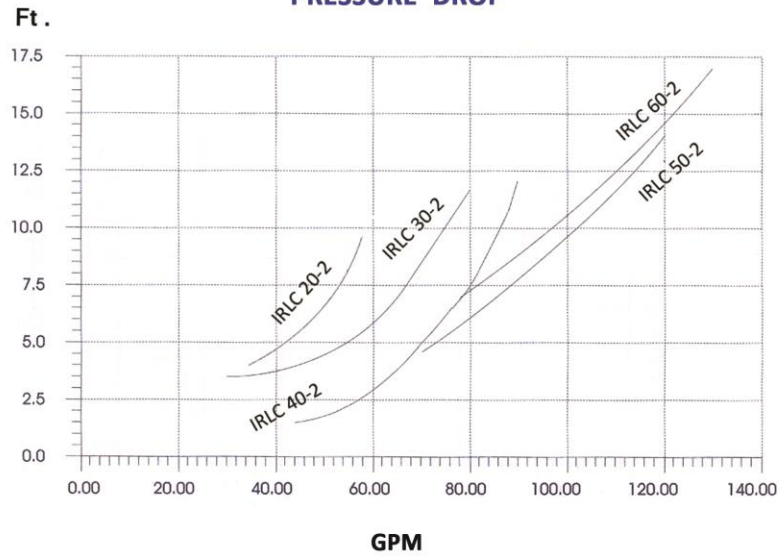


Chart 5:

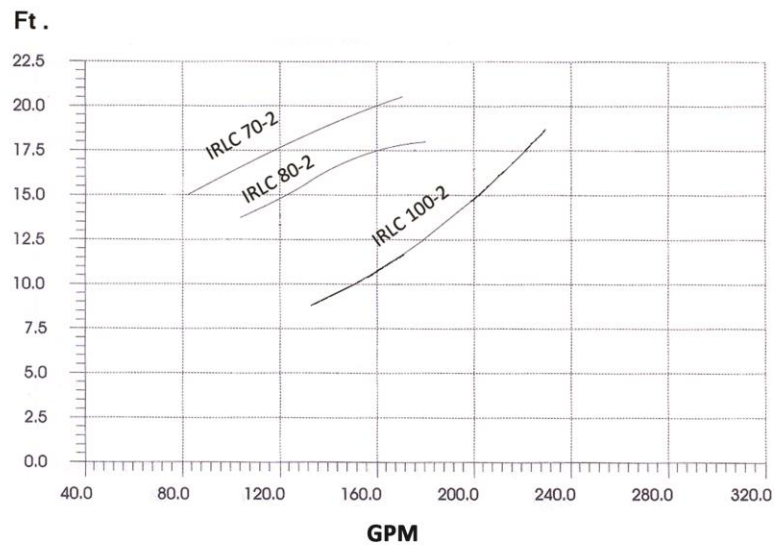


Chart 6:

### CONDENSER

#### PRESSURE DROP

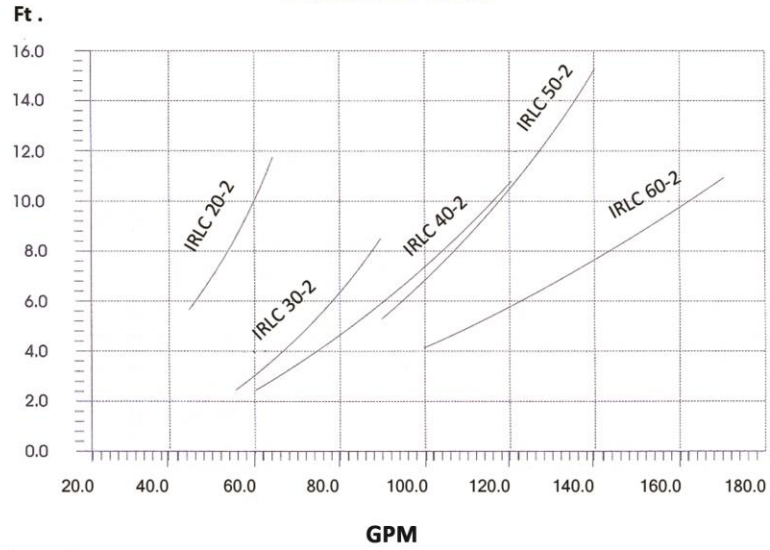


Chart 7:

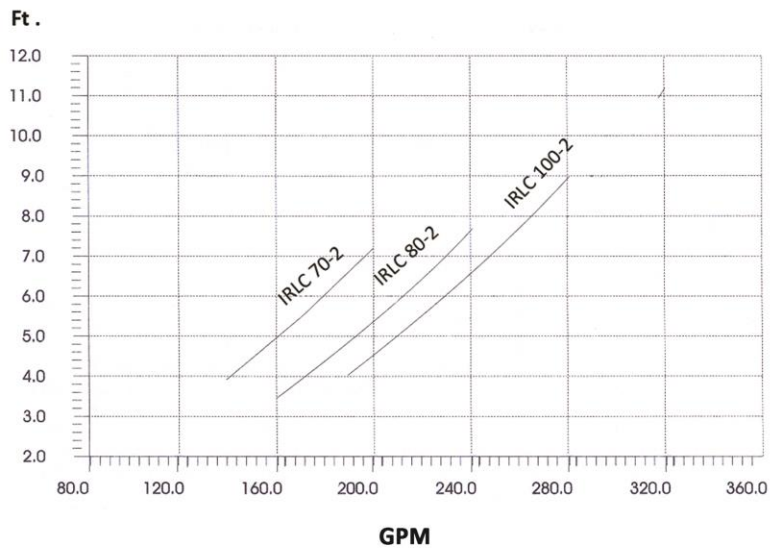
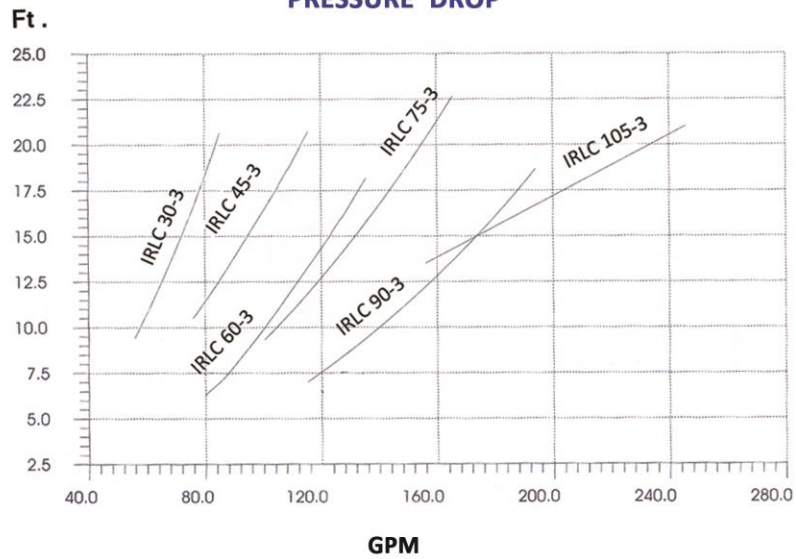


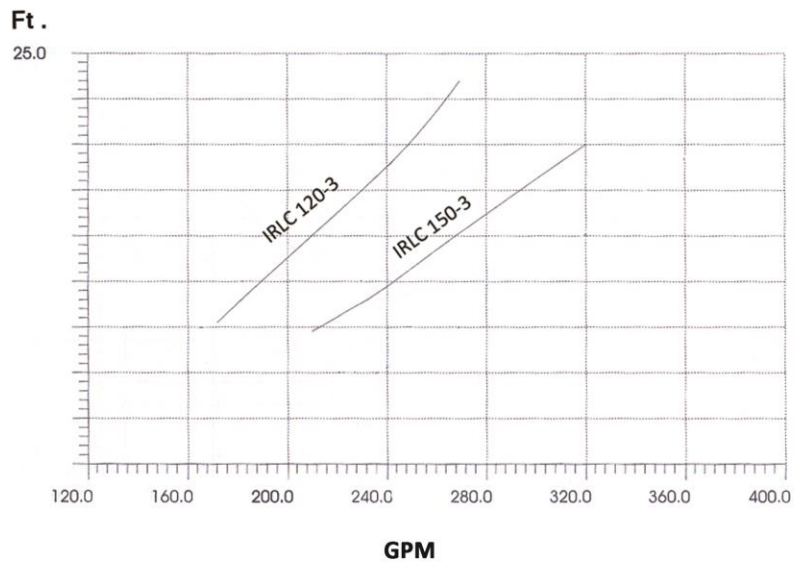
Chart 8:

### EVAPORATOR

#### PRESSURE DROP



**Chart 9:**



**Chart 10:**

## CONDENSER

### PRESSURE DROP

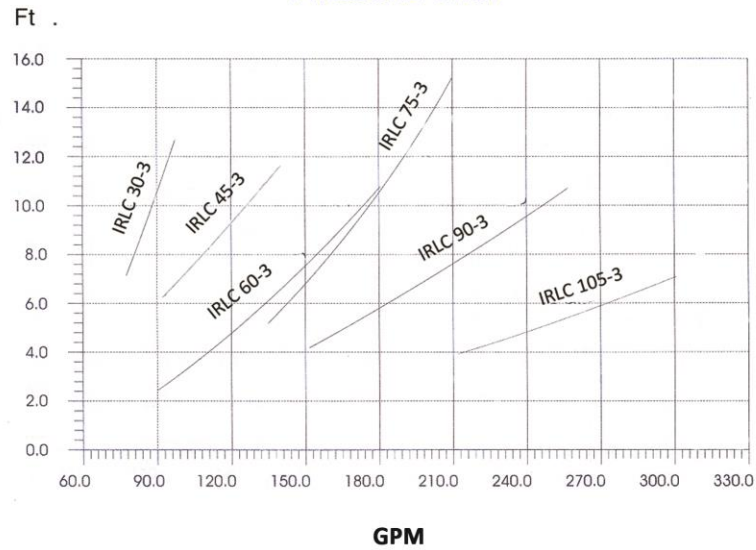


Chart 11:

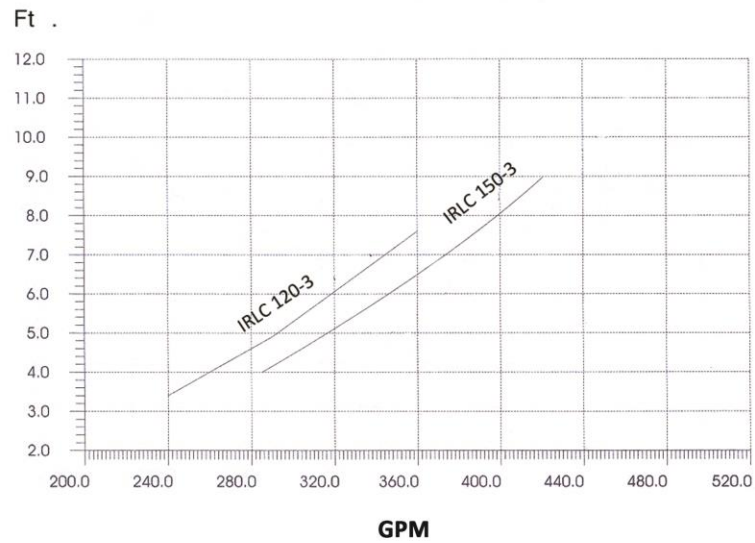
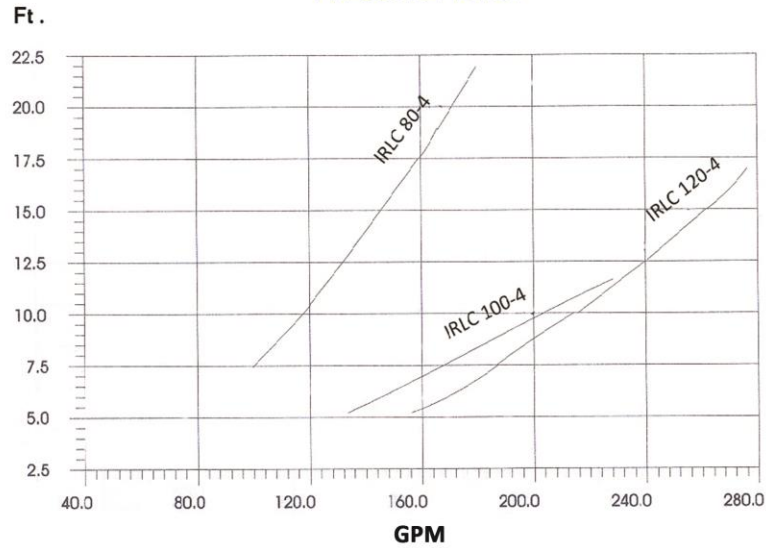


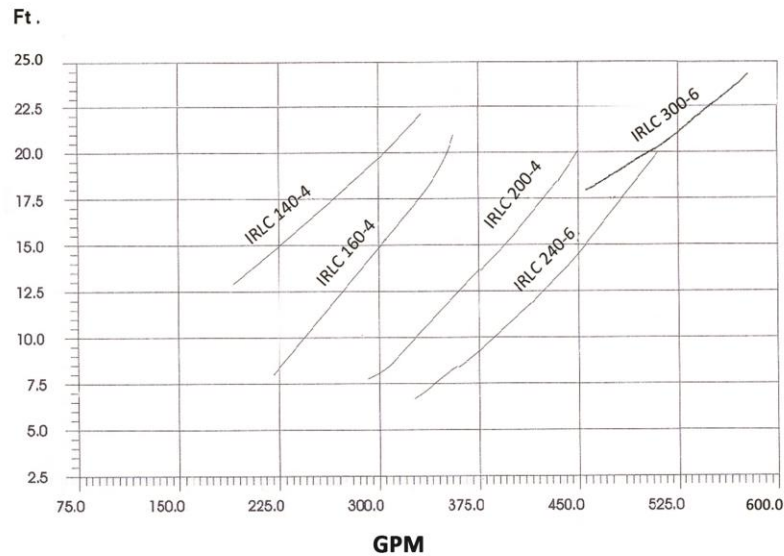
Chart 12:

### EVAPORATOR

#### PRESSURE DROP



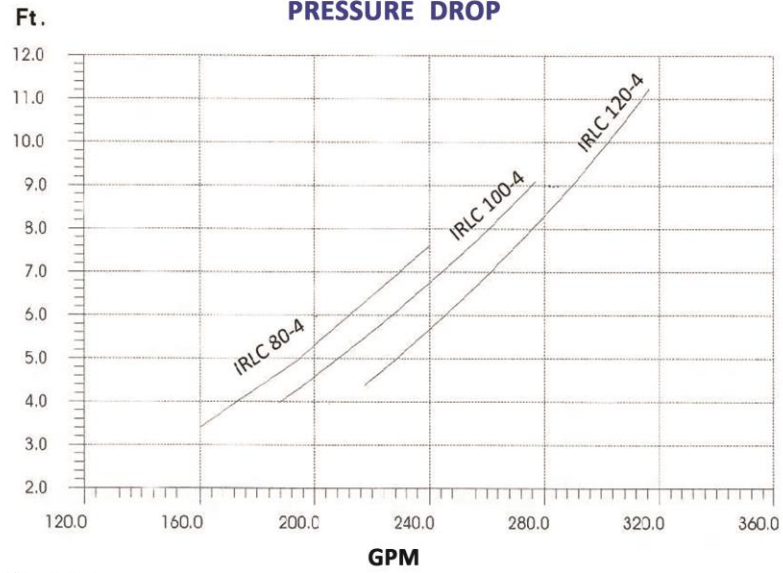
**Chart 13:**



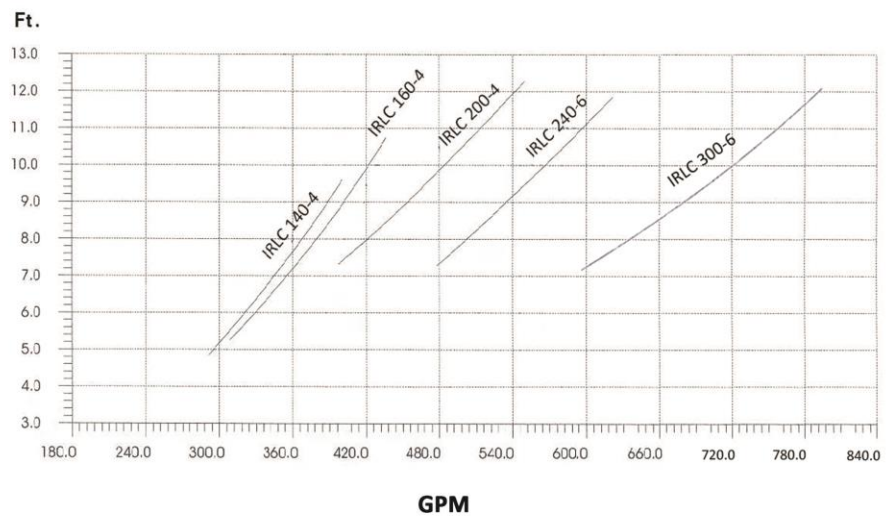
**Chart 14:**

**CONDENSER**

**PRESSURE DROP**

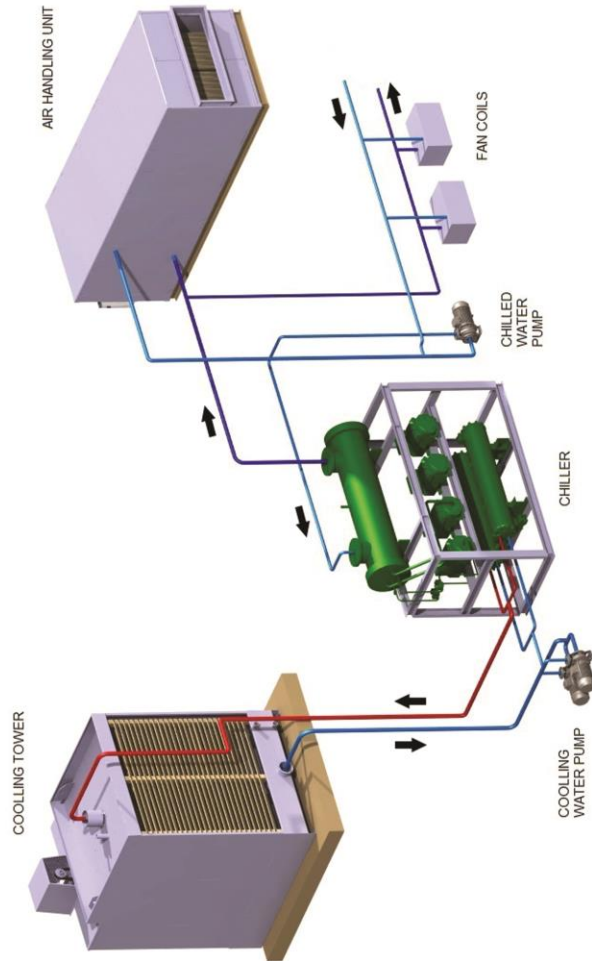


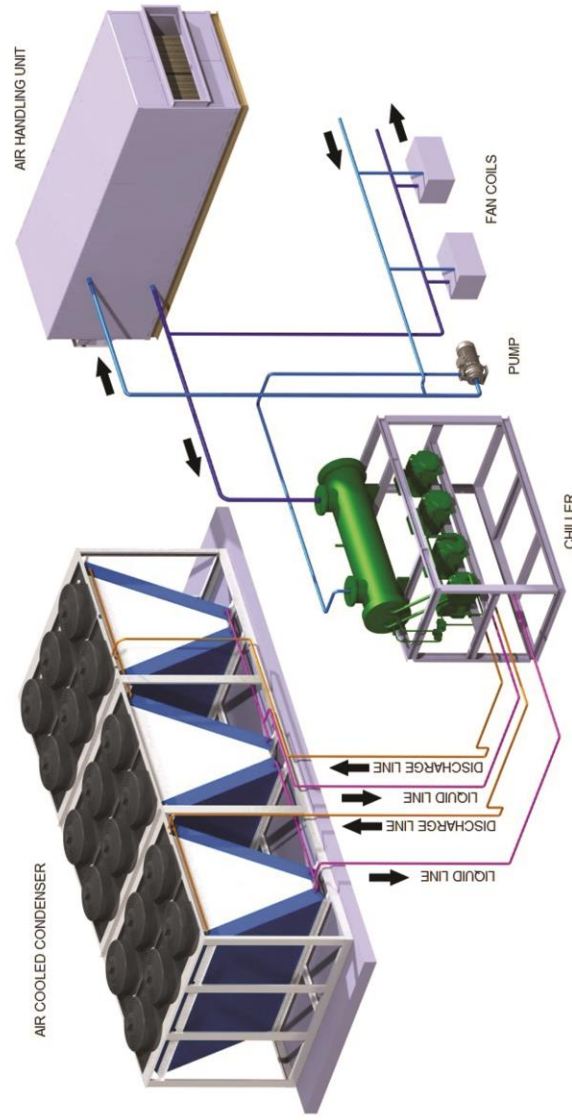
**Chart 15:**



**Chart 16:**









Isfahan Dama Co.

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