Commercial Condensing Units Series CCU

380 to 1500 MBH (32 to 125 TR)

50 Hz

Features / Benefits

- Painted electro-static powder coat, zinc coated steel panels provide additional protection against rushing and discoloration in areas with high UV factor.
- Compressors are hermetically sealed , scroll type provided with crankcase heater, internal pressure relief valve and with internal motor protector for safe operation.
- Condenser air fan is of the propeller type, aluminum blade with a direct drive motor upward discharge and provided with fan grille
- Condenser motors are totally enclosed air-over type with class F insulation with permanently lubricated bearing and automatic thermal protection.
- Condenser coils are built up of ripple finned seamless copper tubes and mechanically bonded to scientifically designed pre coated aluminum fins.
- Condenser Coil guard to protect the condenser coil from physical damage.
- Minimum of two refrigerant independent circuits which provide efficient part load.

The new series of Commercial Condensing Units air conditioner are designed and manufactured to provide comfort cooling for commercial and industrial applications with the optimum performance, high efficiency, reliability, ease of service & maintenance and capable to operate at extremely ambient conditions up to 125°F

Commercial Condensing Unit With Tropical Hermetic Compressor

R410a
Environment Friendly

For more technical information please visit **www.coolex.com.kw**

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OTHER COOLEX PRODUCTS

1. Air Cooled Screw Water Chillers
2. Air Cooled Scroll Water Chillers
3. Air Handling Units
4. Ducted Split Units
5. Concealed Split Units
6. Fan Coil Units

NOMENCLATURE

Unit Series Description

CCU	Commercial Condensing Unit

Nominal Capacity MBH

380	-	780
420	-	840
480	-	960
540	-	1080
600	-	1200
660	-	1380
720	-	1500

Unit Options

S	Standard Unit
T	With Additional Options

Electrical Specifications

2	415/3Ph/50Hz

Refrigerant

F	R410A

STANDARD SPECIFICATIONS

General

- The Commercial Condensing Units (CCU) are factory assembled, internally wired, piping connections terminated with suction and liquid line isolation valve. It shall be capable to operate at extremely ambient conditions up to 125°F.
- The units consists of scroll compressors, condenser coil, fans, electrical components, refrigerant piping and enclosing cabinet in one piece.
- The units are rated and tested in accordance with AHRI 365 standard.

Unit Casing

Panels are fabricated from hot dipped G90, Zinc coating and zero spangle galvanized steel, oven-baked powder coated. The unit is provided with an integral weather resistant control panel for outdoor application. Panels and access doors are provided for inspection and access for all internal parts.

Compressor

The compressors are hermetic scroll type provided with crankcase heater, internal pressure relief valve which provides high pressure protection to the refrigerant system and rubber vibration isolators for quiet and efficient operation. The compressors are equipped with internal motor protector for safe operation. The compressors are built to NF, VPE, CSA, & UL certification.

Condenser Coils

The coils are built up of ripple finned seamless copper tubes and mechanically bonded to scientifically designed pre coated aluminum louvered fins. The assembled coils are factory leak tested under water at a pressure of 700 psig for quality and leak free units.

Condenser Fans

Condenser air fan is of the propeller type, aluminum blade with a direct drive motor upward discharge and provided with fan grille mounted in casing.

Condenser Fan Motor

Motors are totally enclosed air-over type with class F insulation for weather protection with permanently lubricated bearings and automatic thermal protection.

Condenser Coil Guard

Protect the condenser coil from physical damage.

Refrigerant Circuit

CCU series comes complete, as standard, with properly sized refrigerant lines including suction and liquid isolation valve,sight glass, filter drier, automatic high and lowpressure switch using R410A Refrigerant.

Microprocessor Controller

To achieve precise control and safety functions of the condensing units.

Control Panel

The control panel enclosure is fabricated out of heavy gauge sheet steel powder coated bake finished. Internal power and control wiring is neatly routed, properly anchored and all wires are identified with cable markers as per NEC standard applicable to HVAC units. Major components used in the control panel are UL approved. External overload relay will be provided for compressor.

MICROPROCESSOR BASED CONTROLLER

The Commercial Condensing Units (CCU) are provided with technologically advanced Microprocessor based controller, incorporating the following benefits and features:

- Anti-recycling timing device
- Compressor lock out function
- Balance loading of compressors
- Compressors lead-lag operation
- Pump down option
- Fault diagnostics
- Indicator lights for high & low pressure safety

OPTIONAL SPECIFICATIONS

Construction

- Anti-corrossion coating for coils
- Copper fins

Electrical

- Compressor circuit breaker
- Condenser fan motor circuit breaker
- External overload for condenser fan motor
- Mild ambient kit
- Anti - ice thermostat
- Wi-Fi Thermostat
- Modbus connectivity

Refrigeration

- Pump down kit
- Hot gas bypass kit
- High & Low Pressure gauges
- Oil Pressure gauges
- Adjustable Low / High Pressure switch
- Discharge line muffler
- Rotalock valve for compressor
- Replaceable filter drier with mechanical shut-off valve
- Semi Hermetic Compressor

Typical Thermostat (Optional)

SELECTION PROCEDURE

The below example illustrates the selection procedure to assist using this catalog to select the appropriate CCU unit that meets the design requirements.

Altitude [ft]	Correction factor
Sea level	1
1000	0.996
2000	0.990
3000	0.984
4000	0.980
5000	0.974
6000	0.965
7000	0.960

Example :

Design requirements

- Total cooling capacity 773 [MBH]
- Condenser ambient temperature 95 [°F]
- Saturated suction temperature 50 [°F]
- Altitude 2000 [ft]
- Power supply 415V /3Ph /50Hz

*Using the correction factor table at the specified altitude, thereby the required capacity will be:

Corrected capacity = Required capacity /corr. factor

Corrected total capacity = 773 [MBH]/0.99
= 776.1 MBH

From the cooling capacity at performance data tables (page 9), the closest selection model to the required capacity is CCU-780. From the performance table:

Total cooling capacity = 780.55 [MBH]

To calculate Total Heat Rejection Capacity

Total Heat Rejection Capacity = Total cooling capacity + (3.41 x PI)
= 780.55 + (3.41 x 51.3)
= 955.483 MBH

GENERAL DATA

Model			CCU-380	CCU-420	CCU-480	CCU-540	CCU-600	CCU-660	CCU-720
Cooling Capacity (Nominal)	MBH		380.1	420.6	490.4	540.6	600.3	660.4	720.5
	KW		111.4	123.3	143.7	158.5	175.9	193.5	211.2
Power Supply	V / Ph / Hz		415 / 3Ph / 50Hz						
Compressor	Type		Hermetic Scroll						
	Quantity		2	4					
	Refrigerant		R410A						
	Refrigerant circuits		2	4					
Condenser Fan	Type		Propeller						
	Diameter, mm		762			800		762	
	No. of fans		4					6	
	Motor Enclosure/Ins Class		Totally Enclosed Air Over, Class F						
	Nominal HP x Qty		1.5 x 4			2 x 4		1.5 x 6	
Condenser Coil	Type		Enhanced Aluminum Fins & Inner Grooved Copper Tubes						
	Rows - FPI		2-14	3-14					
	Total Face area	ft^2	79.2					118.8	
High Pressure Switch	Open (Psig)		650 ±15						
	Close (Psig)		500 ±22						
Low Pressure Switch	Open (Psig)		50 ±7						
	Close (Psig)		90 ±7						
Refrigerant Pipes	Suction Line (in)		1-1/8						
	Liquid Line (in)		5/8						
Weight	kg		713	777	908	933	966	1240	1270

Note:

1. Cooling capacities are based on 95°F Condensing air temperature and 50°F Saturated suction temperarture.

2. The unit is factory supplied with full refrigerant charge.

3. The above data maybe changed without prior notice due to continous improvement in quality and performance.

GENERAL DATA

Model			CCU-780	CCU-840	CCU-960	CCU-1080	CCU-1200	CCU-1380	CCU-1500
Cooling Capacity (Nominal)	MBH		780.6	840.4	980.8	1,080.3	1,200.1	1,380.9	1,504.3
	KW		228.8	246.3	287.4	316.6	351.7	404.7	440.9
Power Supply	V / Ph / Hz		415 / 3Ph / 50Hz						
Compressor	Type		Hermetic Scroll						
	Quantity		4						
	Refrigerant		R410A						
	Refrigerant circuits		4						
Condenser Fan	Type		Propeller						
	Diameter, mm		800	762		800			
	No. of fans		6	8					
	Motor Enclosure/Ins Class		Totally Enclosed Air Over, Class F						
	Nominal HP x Qty		2.0 x 6	1.5 x 8		2.0 x 8			
Condenser Coil	Type		Enhanced Aluminum Fins & Inner Grooved Copper Tubes						
	Rows - FPI		3-14					4-16	
	Total Face area	ft^2	118.8	158.4					
High Pressure Switch	Open (Psig)		650 ±15						
	Close (Psig)		500 ±22						
Low Pressure Switch	Open (Psig)		50 ±7						
	Close (Psig)		90 ±7						
Refrigerant Pipes	Suction Line (in)		1-3/8						1-5/8
	Liquid Line (in)		7/8						
Weight	kg		1315	1736	2000	2035	2085	2415	2510

Note:

1. Cooling capacities are based on 95°F Condensing air temperature and 50°F Saturated suction temperarture.

2. The unit is factory supplied with full refrigerant charge.

3. The above data maybe changed without prior notice due to continous improvement in quality and performance.

PERFORMANCE DATA TABLES

Model	SST (°F)	Condenser Ambient Temperature [°F]											
		95			115			118.4			125		
		TC (Btu/hr)	PI (KW)	CT (°F)	TC (Btu/hr)	PI (KW)	CT (°F)	TC (Btu/hr)	PI (KW)	CT (°F)	TC (Btu/hr)	PI (KW)	CT (°F)
CCU-380	45	349,971	22.8	115.3	303,417	28.1	133.6	295,196	29.1	136.6	279,058	31.1	142.2
	46	355,865	22.9	115.6	308,542	28.2	133.9	300,208	29.2	136.8	283,805	31.2	142.4
	47	361,828	23.0	115.9	313,723	28.3	134.1	305,274	29.3	137.1	288,600	31.3	142.7
	48	367,859	23.1	116.2	318,961	28.4	134.4	310,396	29.4	137.3	293,446	31.4	143.0
	49	373,959	23.2	116.5	324,256	28.5	134.7	315,574	29.5	137.6	298,342	31.5	143.2
	50	380,127	23.3	116.9	329,609	28.6	134.9	320,808	29.6	137.9	303,288	31.6	143.5
CCU-420	45	386,872	26.0	115.7	343,195	32.2	134.1	334,338	33.4	137.1	317,318	35.7	142.8
	46	393,470	26.1	116.0	349,071	32.3	134.4	340,086	33.5	137.3	322,773	35.8	143.1
	47	400,144	26.2	116.3	355,014	32.4	134.6	345,898	33.6	137.6	328,287	36.0	143.3
	48	406,894	26.3	116.6	361,022	32.5	134.9	351,776	33.7	137.9	333,861	36.1	143.6
	49	413,720	26.4	116.9	367,098	32.6	135.2	357,719	33.8	138.1	339,496	36.2	143.8
	50	420,623	26.5	117.2	373,241	32.7	135.4	363,728	33.9	138.4	345,191	36.3	144.1
CCU-480	45	451,634	30.0	115.7	394,491	37.2	134.1	384,667	38.6	137.1	365,513	41.4	142.8
	46	459,226	30.1	116.0	401,168	37.3	134.4	391,203	38.7	137.3	371,711	41.5	143.1
	47	466,898	30.2	116.3	407,914	37.5	134.6	397,808	38.9	137.6	377,972	41.7	143.3
	48	474,648	30.4	116.6	414,731	37.6	134.9	404,482	39.0	137.9	384,298	41.8	143.6
	49	482,478	30.5	116.9	421,617	37.8	135.2	411,224	39.1	138.1	390,687	42.0	143.8
	50	490,386	30.6	117.2	428,573	37.9	135.4	418,036	39.3	138.4	397,139	42.1	144.1
CCU-540	45	498,446	34.0	116.4	434,733	42.3	134.8	423,642	43.9	137.7	401,620	47.2	143.4
	46	506,741	34.1	116.8	442,090	42.4	135.0	430,856	44.0	138.0	408,471	47.4	143.7
	47	515,113	34.3	117.1	449,513	42.6	135.3	438,135	44.2	138.3	415,383	47.5	144.0
	48	523,561	34.5	117.4	457,004	42.8	135.6	445,481	44.4	138.6	422,355	47.7	144.3
	49	532,086	34.7	117.8	464,563	43.0	135.9	452,893	44.6	138.9	429,389	47.9	144.6
	50	540,606	34.9	118.1	472,187	43.2	136.2	460,371	44.8	139.2	436,483	48.1	144.9
CCU-600	45	553,878	38.4	118.5	482,062	47.8	136.5	469,506	49.6	139.5	443,958	53.5	145.2
	46	562,967	38.6	118.8	490,173	48.0	136.9	477,472	49.9	139.8	451,524	53.7	145.5
	47	572,130	38.8	119.2	498,348	48.2	137.2	485,500	50.1	140.1	459,146	54.0	145.8
	48	581,365	39.1	119.6	506,586	48.5	137.5	493,590	50.3	140.4	466,825	54.2	146.1
	49	590,671	39.3	119.9	514,887	48.7	137.8	501,743	50.5	140.7	474,560	54.4	146.5
	50	600,310	39.5	120.3	523,249	48.9	138.2	509,957	50.8	141.1	482,350	54.7	146.8

See note on page 10

PERFORMANCE DATA TABLES

Model	SST (°F)	Condenser Ambient Temperature [°F]											
		95			115			118.4			125		
		TC (Btu/hr)	PI (KW)	CT (°F)	TC (Btu/hr)	PI (KW)	CT (°F)	TC (Btu/hr)	PI (KW)	CT (°F)	TC (Btu/hr)	PI (KW)	CT (°F)
CCU-660	45	607,450	40.1	114.1	524,400	49.7	132.7	509,709	51.6	135.7	481,399	55.2	141.4
	46	617,756	40.2	114.4	533,329	49.9	132.9	518,431	51.8	135.9	489,644	55.4	141.6
	47	628,182	40.4	114.6	542,355	50.1	133.1	527,248	51.9	136.2	497,975	55.6	141.8
	48	638,727	40.6	114.9	551,480	50.3	133.4	536,160	52.1	136.4	506,390	55.8	142.0
	49	649,393	40.8	115.2	560,703	50.5	133.6	545,168	52.3	136.6	514,893	56.0	142.3
	50	660,408	40.9	115.5	570,027	50.6	133.9	554,274	52.5	136.9	523,483	56.2	142.5
CCU-720	45	665,663	46.1	115.3	577,935	56.7	133.8	563,643	58.7	136.8	534,345	62.9	142.4
	46	676,433	46.3	115.6	587,358	56.9	134.0	572,878	59.0	137.0	543,064	63.1	142.7
	47	687,299	46.5	115.9	596,865	57.2	134.3	582,195	59.2	137.3	551,859	63.3	142.9
	48	698,259	46.7	116.2	606,456	57.4	134.6	591,596	59.4	137.5	560,730	63.5	143.2
	49	709,313	47.0	116.5	616,131	57.6	134.8	601,080	59.6	137.8	569,677	63.8	143.5
	50	720,460	47.2	116.8	625,889	57.8	135.1	610,647	59.8	138.0	578,699	64.0	143.7
CCU-780	45	719,642	50.1	117.5	623,874	61.8	135.7	607,018	64.0	138.7	573,973	68.5	144.4
	46	731,657	50.3	117.9	634,324	62.0	136.0	617,235	64.2	139.0	583,628	68.8	144.6
	47	743,802	50.5	118.2	644,883	62.3	136.3	627,558	64.5	139.3	593,379	69.0	144.9
	48	756,078	50.8	118.5	655,551	62.5	136.6	637,988	64.7	139.6	603,226	69.3	145.2
	49	768,486	51.0	118.9	666,330	62.7	136.9	648,526	65.0	139.8	613,170	69.6	145.5
	50	780,612	51.3	119.2	677,220	63.0	137.2	659,173	65.2	140.1	623,211	69.8	145.8
CCU-840	45	780,782	51.9	113.7	680,304	64.3	132.4	662,747	66.7	135.4	629,009	71.5	141.1
	46	794,097	52.1	114.0	691,952	64.6	132.6	674,141	66.9	135.7	639,822	71.7	141.4
	47	807,566	52.3	114.3	703,731	64.8	132.9	685,663	67.2	135.9	650,753	71.9	141.6
	48	821,189	52.6	114.5	715,642	65.0	133.1	697,314	67.4	136.1	661,802	72.2	141.8
	49	834,966	52.8	114.8	727,686	65.2	133.3	709,094	67.6	136.4	672,971	72.4	142.1
	50	840,422	53.0	115.1	739,863	65.5	133.6	721,006	67.9	136.6	684,260	72.7	142.3
CCU-960	45	903,268	59.9	115.7	788,982	74.4	134.1	769,334	77.2	137.1	731,027	82.7	142.8
	46	918,453	60.2	116.0	802,336	74.7	134.4	782,406	77.4	137.3	743,422	83.0	143.1
	47	933,796	60.4	116.3	815,829	75.0	134.6	795,616	77.7	137.6	755,945	83.3	143.3
	48	949,297	60.7	116.6	829,461	75.2	134.9	808,963	78.0	137.9	768,595	83.7	143.6
	49	964,955	61.0	116.9	843,233	75.5	135.2	822,449	78.3	138.1	781,373	84.0	143.8
	50	980,772	61.3	117.2	857,146	75.8	135.4	836,072	78.6	138.4	794,279	84.3	144.1

See note on page 10

PERFORMANCE DATA TABLES

Model	SST (°F)	Condenser Ambient Temperature [°F]											
		95			115			118.4			125		
		TC (Btu/hr)	PI (KW)	CT (°F)	TC (Btu/hr)	PI (KW)	CT (°F)	TC (Btu/hr)	PI (KW)	CT (°F)	TC (Btu/hr)	PI (KW)	CT (°F)
CCU-1080	45	996,892	67.9	116.4	869,466	84.5	134.8	847,285	87.7	137.7	803,240	94.3	143.4
	46	1,013,482	68.2	116.8	884,179	84.8	135.0	861,711	88.1	138.0	816,942	94.7	143.7
	47	1,030,226	68.6	117.1	899,027	85.2	135.3	876,271	88.4	138.3	830,766	95.1	144.0
	48	1,047,122	69.0	117.4	914,009	85.6	135.6	890,962	88.8	138.6	844,711	95.5	144.3
	49	1,064,171	69.3	117.8	929,125	85.9	135.9	905,787	89.1	138.9	858,778	95.8	144.6
	50	1,080,253	69.7	118.1	944,375	86.3	136.2	920,743	89.5	139.2	872,965	96.2	144.9
CCU-1200	45	1,107,757	76.8	118.5	964,123	95.6	136.5	939,013	99.3	139.5	887,917	107.1	145.2
	46	1,125,935	77.2	118.8	980,346	96.0	136.9	954,943	99.7	139.8	903,048	107.5	145.5
	47	1,144,259	77.6	119.2	996,695	96.5	137.2	971,000	100.1	140.1	918,293	107.9	145.8
	48	1,162,729	78.1	119.6	1,013,172	96.9	137.5	987,181	100.6	140.4	933,650	108.4	146.1
	49	1,181,343	78.6	119.9	1,029,773	97.4	137.8	1,003,486	101.0	140.7	949,120	108.9	146.5
	50	1,200,099	79.1	120.3	1,046,499	97.9	138.2	1,019,914	101.5	141.1	964,700	109.4	146.8
CCU-1380	45	1,275,211	88.3	118.1	1,080,694	112.8	138.8	1,075,026	113.6	139.3	1,014,708	122.1	145.1
	46	1,296,029	88.8	118.5	1,099,316	113.2	139.0	1,092,770	114.1	139.6	1,031,400	122.7	145.4
	47	1,317,017	89.3	118.8	1,118,105	113.6	139.3	1,110,645	114.6	139.9	1,048,205	123.2	145.7
	48	1,338,172	89.8	119.2	1,137,062	114.0	139.5	1,128,650	115.1	140.2	1,065,121	123.8	146.0
	49	1,359,494	90.3	119.5	1,156,187	114.5	139.7	1,146,785	115.7	140.5	1,082,148	124.3	146.3
	50	1,380,931	90.9	119.9	1,175,481	114.9	140.0	1,165,049	116.2	140.8	1,099,285	124.9	146.6
CCU-1500	45	1,392,586	102.3	120.7	1,184,716	129.2	140.4	1,173,163	130.8	141.4	1,104,215	140.3	147.2
	46	1,414,826	102.9	121.1	1,204,472	129.7	140.7	1,191,752	131.4	141.7	1,121,508	141.0	147.5
	47	1,437,231	103.5	121.5	1,224,390	130.2	140.9	1,210,454	132.0	142.1	1,138,889	141.7	147.8
	48	1,459,799	104.1	121.9	1,244,472	130.7	141.2	1,229,269	132.7	142.4	1,156,359	142.4	148.2
	49	1,482,529	104.8	122.3	1,264,718	131.3	141.4	1,248,196	133.4	142.7	1,173,915	143.1	148.5
	50	1,504,317	105.4	122.7	1,285,130	131.8	141.7	1,267,236	134.1	143.1	1,191,558	143.9	148.9

LEGEND:

SST : Saturated Suction Temperature
TC : Total Cooling Capacity
CT : Condensing Temperature
PI : Compressor Power Input

Note:

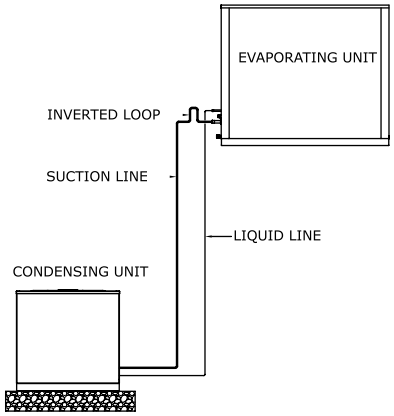
1. Cooling capacities are based on 95°F Condensing air temperature and 50°F Saturated suction temperarture.
2. Direct interpolation is permissible- Do not extrapolate.

RECOMMENDED SUCTION AND LIQUID LINE SIZES

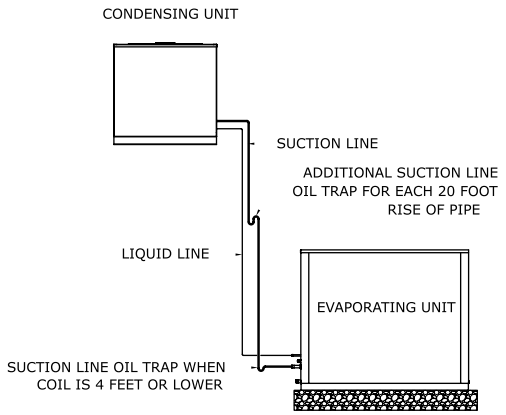
MODELS CCU	Refrigerant Equivalent Length - Ft.									
	0-25		26-50		51-75		76-100		101-120	
	Suction	Liquid	Suction	Liquid	Suction	Liquid	Suction	Liquid	Suction	Liquid
CCU-380	1-1/8	5/8	1-1/8	5/8	1-3/8	7/8	1-3/8	7/8	1-3/8	7/8
CCU-420	1-1/8	5/8	1-1/8	5/8	1-1/8	5/8	1-3/8	7/8	1-3/8	7/8
CCU-480	1-1/8	5/8	1-1/8	5/8	1-1/8	5/8	1-3/8	7/8	1-3/8	7/8
CCU-540	1-1/8	5/8	1-1/8	5/8	1-1/8	5/8	1-3/8	7/8	1-3/8	7/8
CCU-600	1-1/8	5/8	1-1/8	5/8	1-1/8	5/8	1-3/8	7/8	1-3/8	7/8
CCU-660	1-1/8	5/8	1-1/8	5/8	1-3/8	7/8	1-3/8	7/8	1-3/8	7/8
CCU-720	1-1/8	5/8	1-1/8	5/8	1-3/8	7/8	1-3/8	7/8	1-3/8	7/8
CCU-780	1-3/8	7/8	1-1/8	5/8	1-3/8	7/8	1-3/8	7/8	1-3/8	7/8
CCU-840	1-3/8	7/8	1-3/8	7/8	1-3/8	7/8	1-3/8	7/8	1-3/8	7/8
CCU-960	1-3/8	7/8	1-3/8	7/8	1-3/8	7/8	1-3/8	7/8	1-3/8	7/8
CCU-1080	1-3/8	7/8	1-3/8	7/8	1-3/8	7/8	1-3/8	7/8	1-5/8	7/8
CCU-1200	1-3/8	7/8	1-3/8	7/8	1-3/8	7/8	1-5/8	7/8	1-5/8	7/8
CCU-1380	1-3/8	7/8	1-3/8	7/8	1-5/8	7/8	1-5/8	1-1/8	1-5/8	1-1/8
CCU-1500	1-5/8	7/8	1-5/8	7/8	1-5/8	7/8	1-5/8	1-1/8	1-5/8	1-1/8

Note:

1. *Pipe diameters are based on equivalent length of copper tubing sizes.*
2. *Pipe sizes are based on 2°F Temperature Drop.*
3. *If the condensing unit is above evaporating unit, Oil traps should be installed at equal intervals along the suction line.*
4. *If the evaporating unit is above condensing unit, Vapor line trap should be installed near the indoor unit to prevent liquid refrigerant migration to compressor.*
5. *Suction line sized based on maximum 5% capacity loss.*
6. *For different piping installation than mentioned above kindly consult Coolex.*



EVAPORATING UNIT ABOVE CONDENSING UNIT



CONDENSING UNIT ABOVE EVAPORATING UNIT

UNIT ELECTRICAL DATA

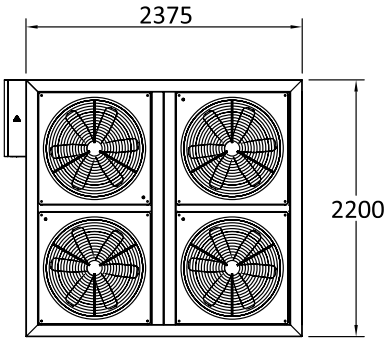
MODEL	POWER SUPPLY	VOLTAGE RANGE		Condenser Fan Motor		Compressor 1		Compressor 2		MCA	MOCP
	(V-PH-HZ)	MIN.	MAX.	HP	FLA	RLA	LRA	RLA	LRA		
CCU-380	415-3-50	374	457	1.5 (4)	3.0	27.9	173.0	27.9	173.0	74.8	100
CCU-420	415-3-50	374	457	1.5 (4)	3.0	17.9(2)	139.0	12.0(2)	101.0	76.5	90
CCU-480	415-3-50	374	457	1.5 (4)	3.0	17.9(2)	139.0	17.9(2)	139.0	88.5	100
CCU-540	415-3-50	374	457	2.0(4)	3.8	20.8(2)	144.0	17.9(2)	139.0	97.8	110
CCU-600	415-3-50	374	457	2.0(4)	3.8	20.8(2)	144.0	20.8(2)	144.0	103.6	110
CCU-660	415-3-50	374	457	1.5 (6)	3.0	27.9	173.0	24.3(3)	140.0	125.8	150
CCU-720	415-3-50	374	457	1.5 (6)	3.0	27.9(3)	173.0	24.3	173.0	133.0	150
CCU-780	415-3-50	374	457	2.0(6)	3.8	34.3	229.0	27.9(3)	173.0	149.4	175
CCU-840	415-3-50	374	457	1.5 (8)	3.0	34.3(2)	229.0	27.9(2)	173.0	157.0	175
CCU-960	415-3-50	374	457	1.5 (8)	3.0	34.3(2)	229.0	34.3(2)	229.0	169.8	200
CCU-1080	415-3-50	374	457	2.0(8)	3.8	42.1(2)	320.0	34.3(2)	229.0	193.7	225
CCU-1200	415-3-50	374	457	2.0(8)	3.8	42.1(2)	320.0	42.1(2)	320.0	209.3	225
CCU-1380	415-3-50	374	457	2.0(8)	3.8	60.7(2)	310.0	42.1(2)	320.0	251.2	300
CCU-1500	415-3-50	374	457	2.0(8)	3.8	60.7(2)	310.0	60.7(2)	310.0	288.4	300

LEGEND:

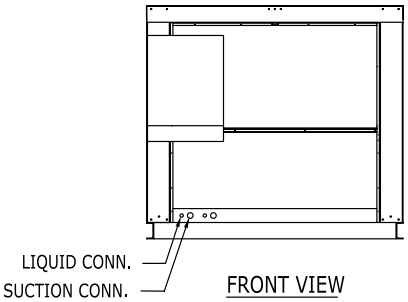
FLA - Full Load Amps
HP - Horse Power
LRA - Locked Rotor Amps
RLA - Rated Load Amps
MCA - Minimum Circuit Amps
MOCP - Maximum Over Current Protection

UNIT DIMENSIONS

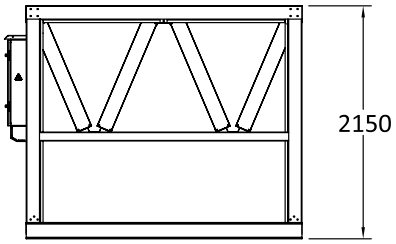
CCU-380/420/480
(ALL DIMENSIONS ARE IN MM)



TOP VIEW

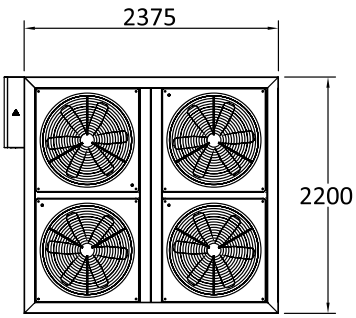


FRONT VIEW

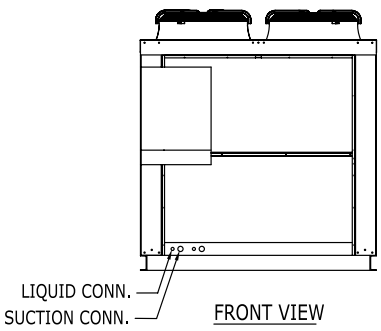


SIDE VIEW

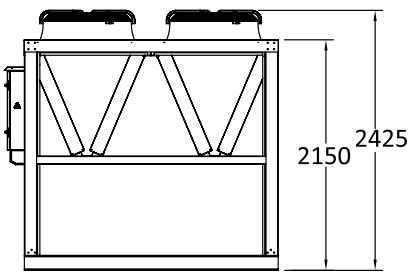
CCU-540/600
(ALL DIMENSIONS ARE IN MM)



TOP VIEW



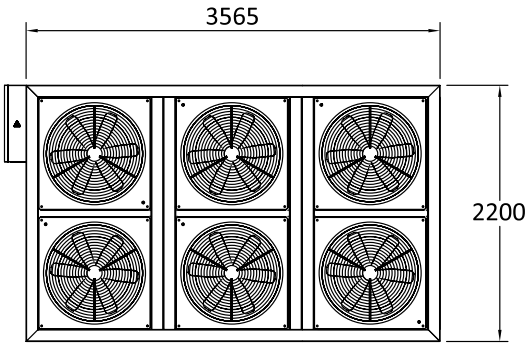
FRONT VIEW



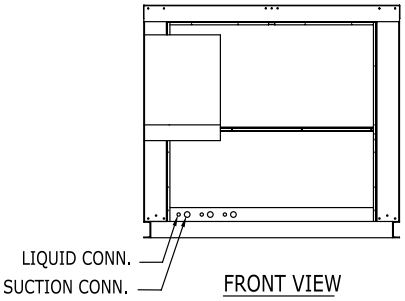
SIDE VIEW

UNIT DIMENSIONS

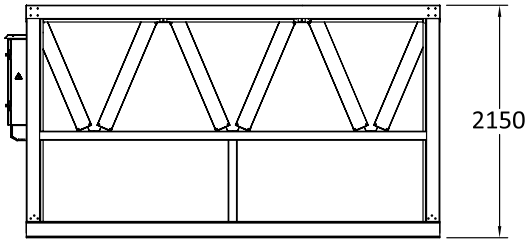
CCU-660/720
(ALL DIMENSIONS ARE IN MM)



TOP VIEW

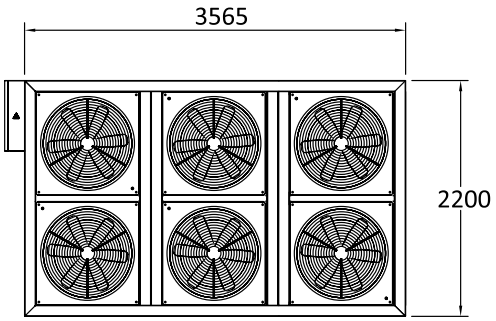


FRONT VIEW

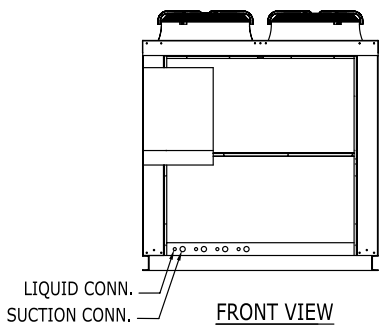


SIDE VIEW

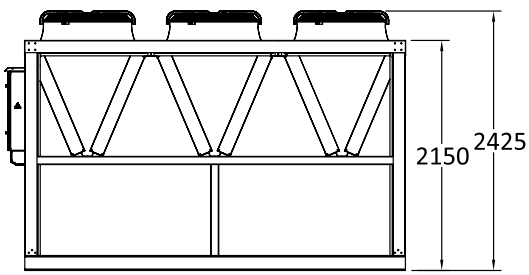
CCU-780
(ALL DIMENSIONS ARE IN MM)



TOP VIEW



FRONT VIEW

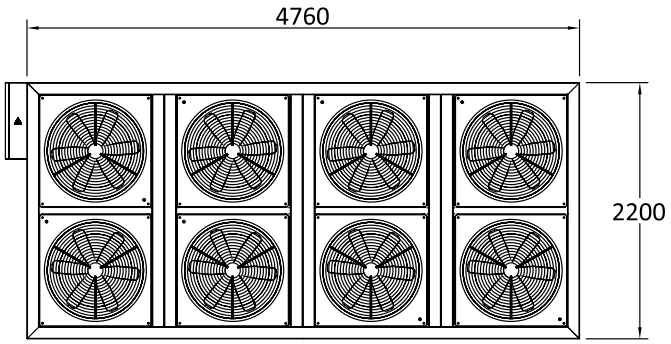


SIDE VIEW

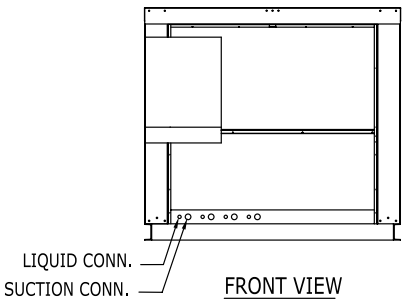
UNIT DIMENSIONS

CCU-840/960

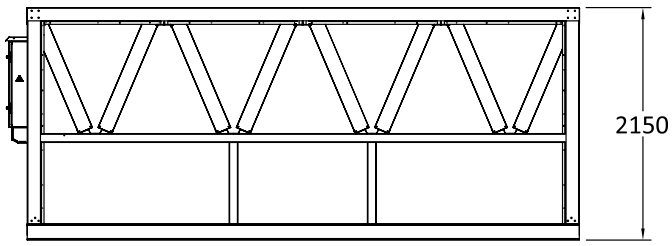
(ALL DIMENSIONS ARE IN MM)



TOP VIEW



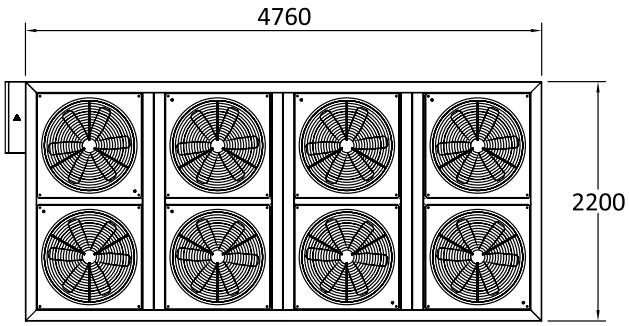
FRONT VIEW



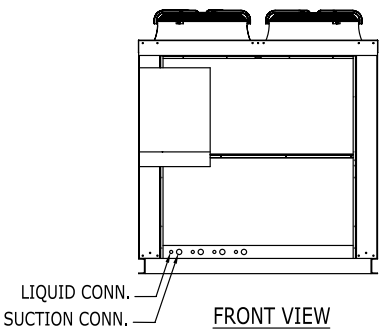
SIDE VIEW

CCU-1080/1200/1380/1500

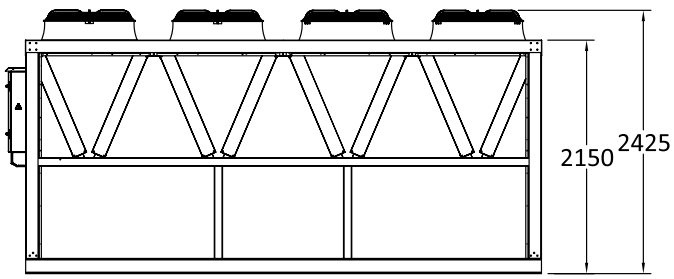
(ALL DIMENSIONS ARE IN MM)



TOP VIEW



FRONT VIEW



SIDE VIEW

INSTALLATION CLEARANCE

FIGURE 1
CORNER WALL

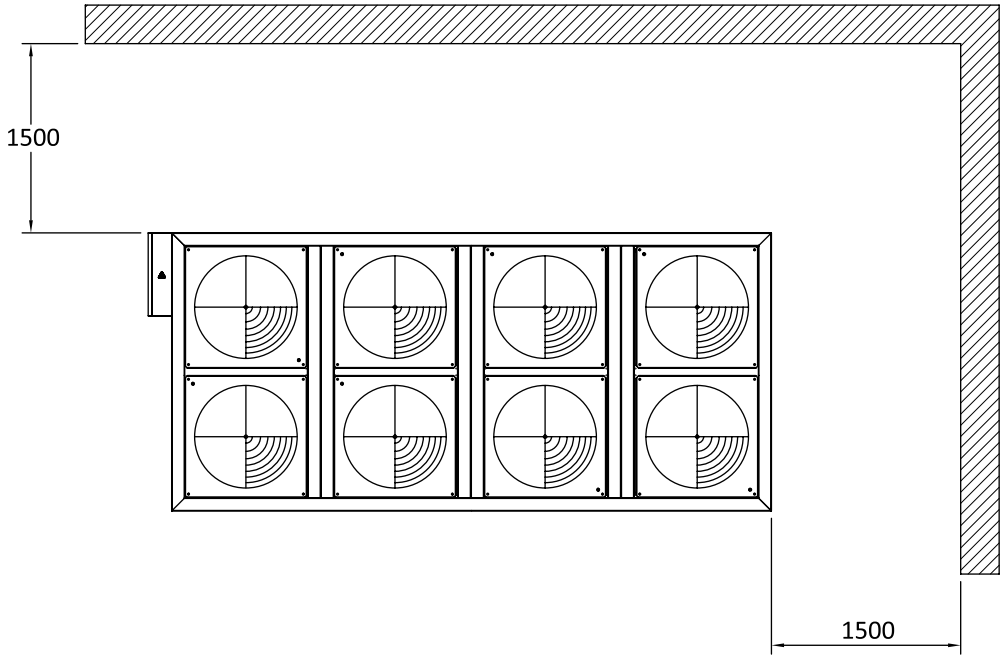
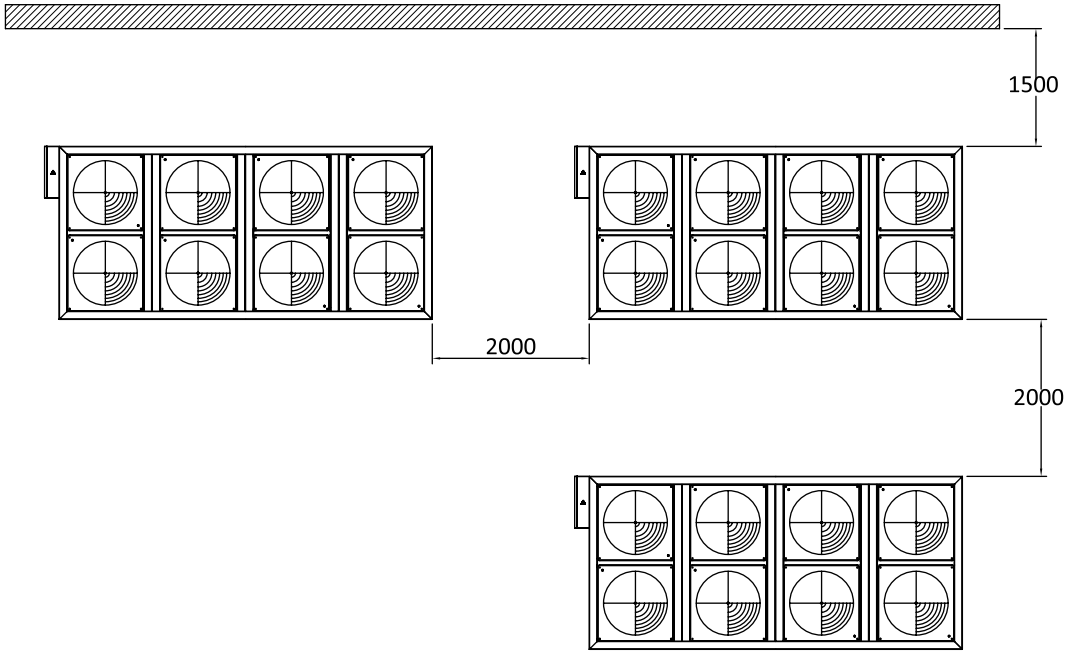


FIGURE 2
STRAIGHT WALL



Pit installations are not recommended where circulation of hot condenser air can take place and it will severely affect unit efficiency (EER) causing high pressure or fan motor temperature trips.
Note: All Dimensions are in Millimeters (mm)

RIGGING INSTRUCTIONS

COOLEX Commercial Condensing Units are designed for overhead rigging only,for this purpose the base channel has been extended beyond the sides of the unit with rigging holes. Use a spreader frame above the unit to keep the cables vertical and away from the sides.

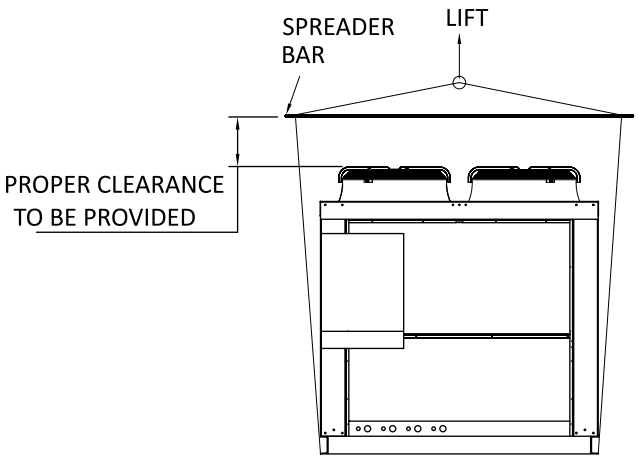
Run the cables to a central suspension point so that the angle from the horizontal is not less than 45°. As an added protection, put plywood sheets on the sides of the unit behind cables while rigging. Raise and set the unit carefully.

ATTENTION TO RIGGERS

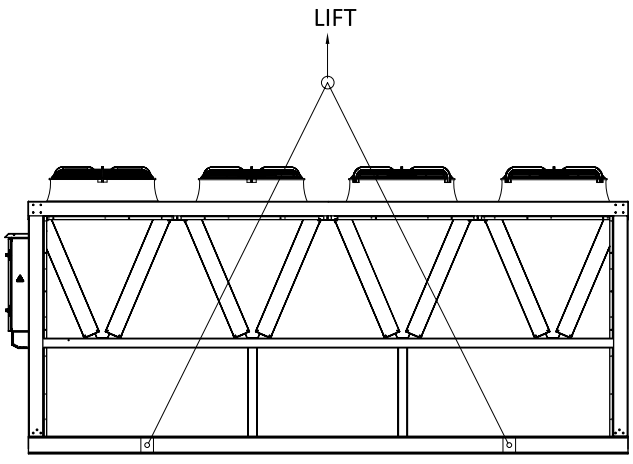
The positions of the rigging slings should be as per the below given drawings.
Lifting points are so provided in the unit as to evenly distribute the units load.
Center of gravity of the unit is not necessarily its center line.
Ensure that the center of gravity aligns with the main lifting pole before lifting the unit.
To avoid damage to the unit by the rigging slings, use spreader bars as shown below.

CAUTION

All panels should be in place when rigging.
Care must be taken to avoid damage to the coils during handling.
Insert packing material between coils & slings as necessary.

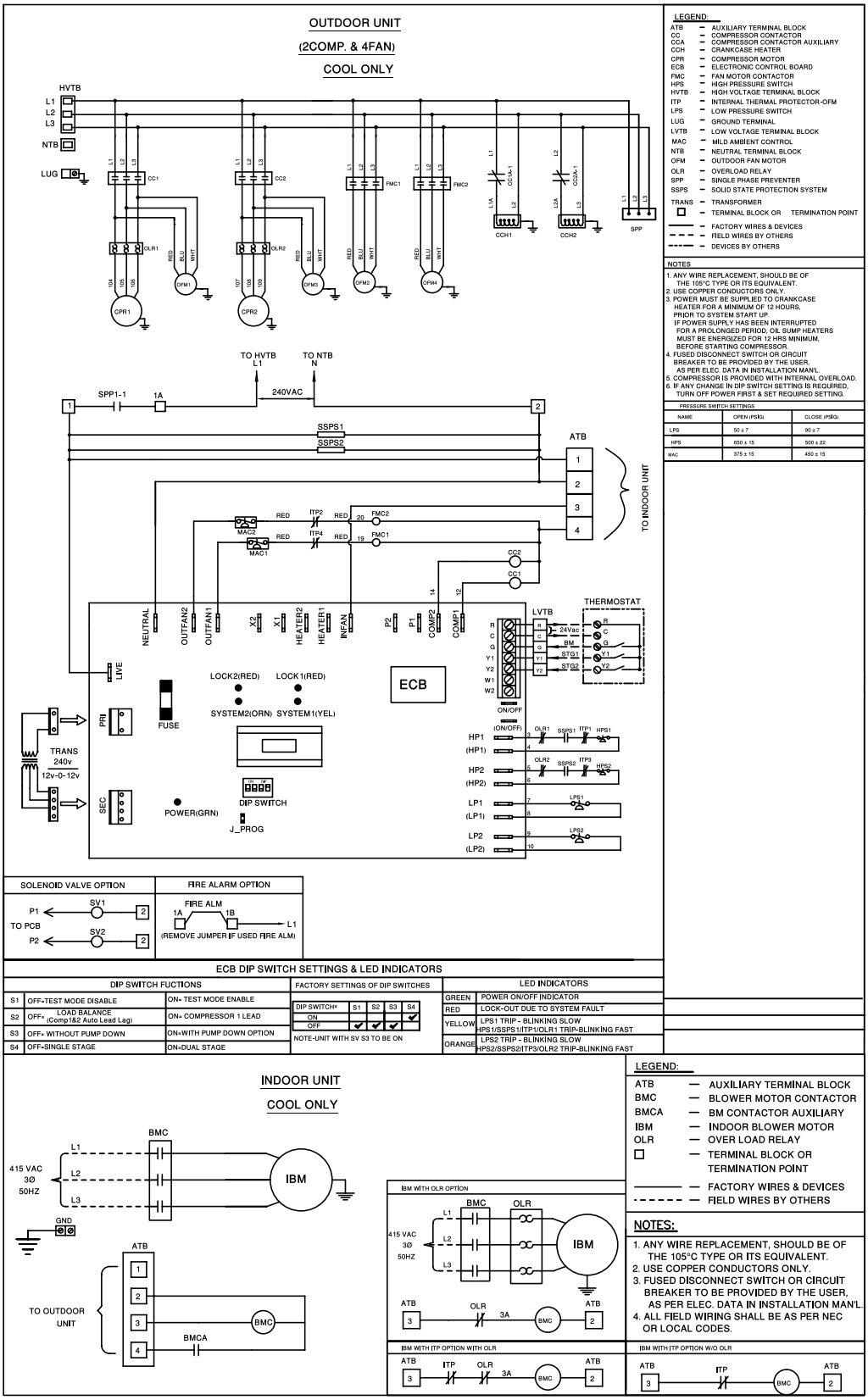


FRONT VIEW

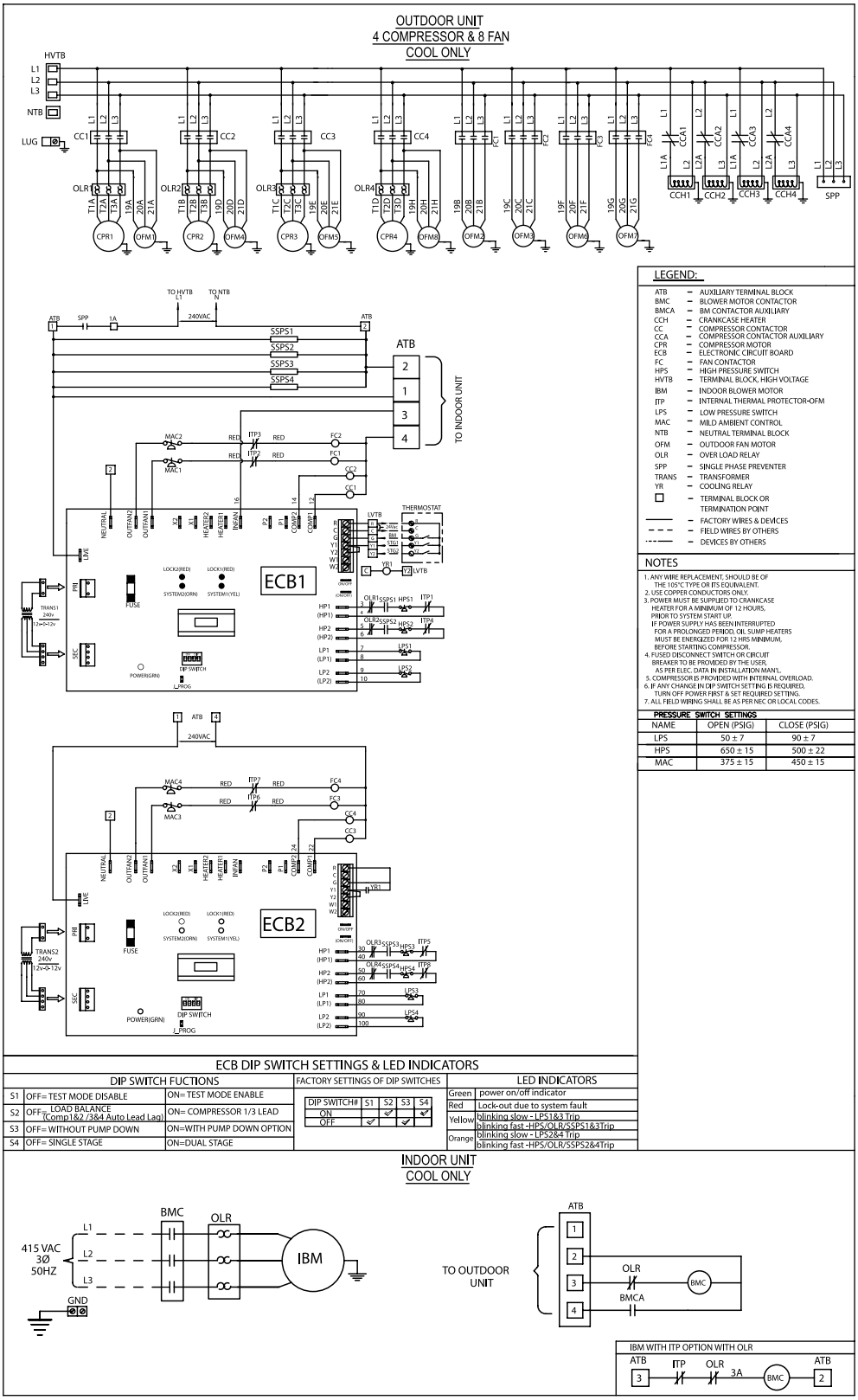


SIDE VIEW

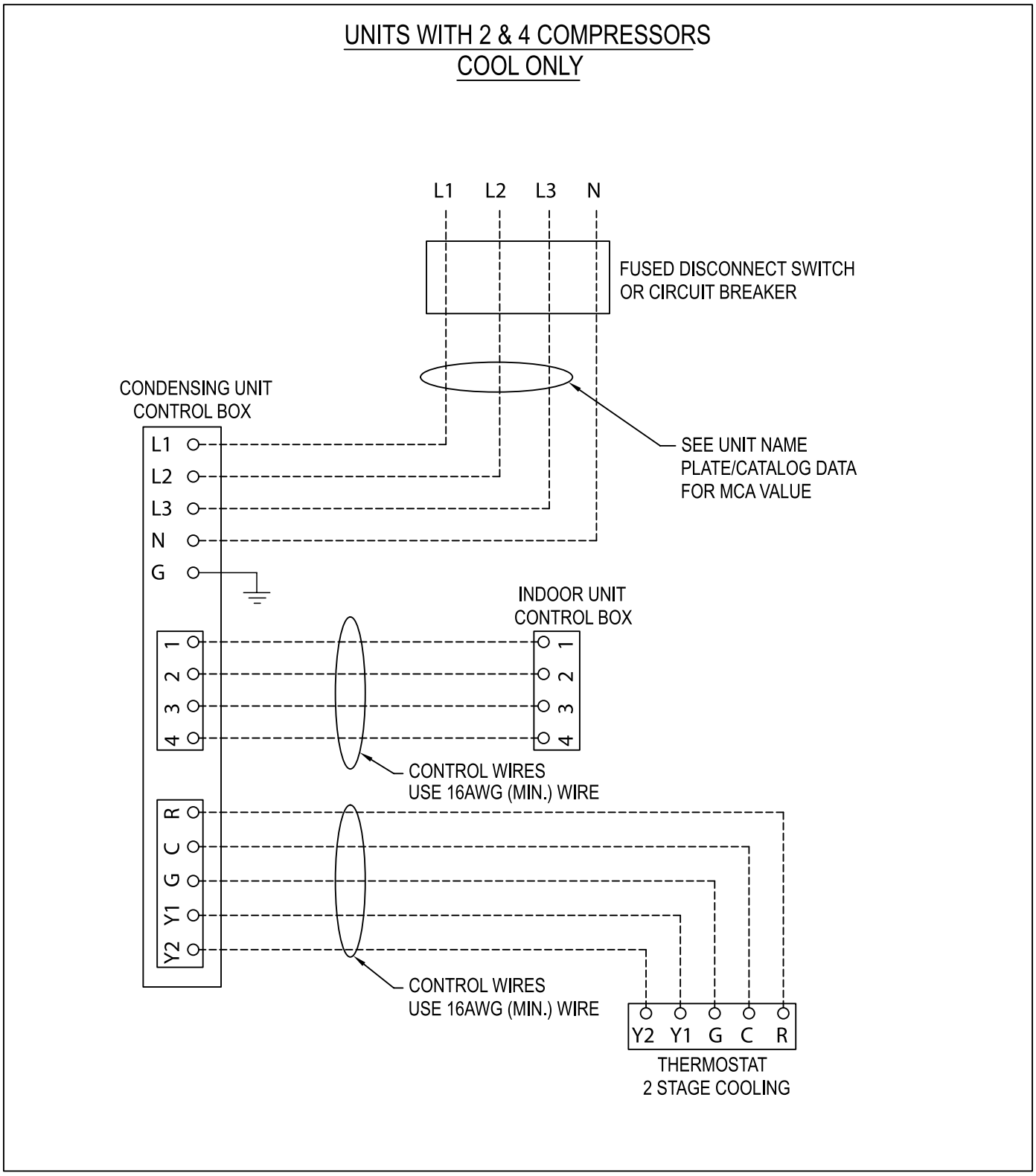
TYPICAL WIRING DIAGRAM



TYPICAL WIRING DIAGRAM

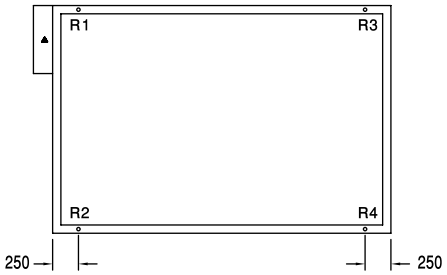


FIELD CONTROL WIRING

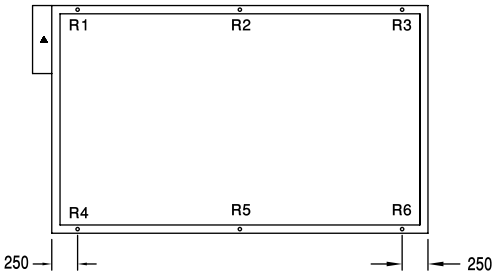


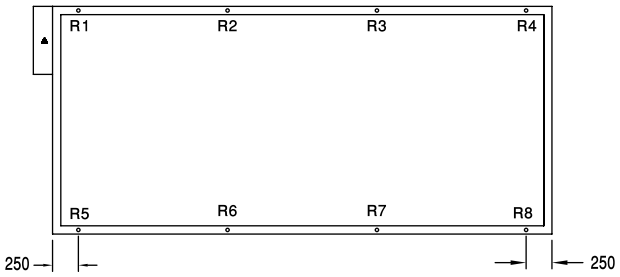
LOAD DISTRIBUTION

CCU-380/420/480/540/600
(ALL DIMENSIONS ARE IN MM)



CCU-660/720/780
(ALL DIMENSIONS ARE IN MM)





CCU-840/960/1080/1200/1380/1500
(ALL DIMENSIONS ARE IN MM)

MODEL	LOAD DISTRIBUTION (kg)								Total Weight
	R1	R2	R3	R4	R5	R6	R7	R8	
CCU-360	191	180	173	169	-	-	-	-	713
CCU-420	208	196	188	185	-	-	-	-	777
CCU-480	243	229	220	216	-	-	-	-	908
CCU-540	250	235	226	222	-	-	-	-	933
CCU-600	259	244	234	230	-	-	-	-	966
CCU-660	220	214	204	207	201	192	-	-	1240
CCU-720	226	219	209	213	206	197	-	-	1270
CCU-780	234	227	217	220	214	204	-	-	1315
CCU-840	235	226	217	208	230	213	208	200	1736
CCU-960	270	260	250	240	265	245	240	230	2000
CCU-1080	275	265	254	244	269	249	244	234	2035
CCU-1200	282	271	261	250	276	255	250	240	2085
CCU-1380	326	314	302	289	320	296	290	278	2415
CCU-1500	339	326	314	301	332	307	301	289	2510

NOTES

NOTES

NOTES

صناعات التبريد
REFRIGERATION INDUSTRIES

About RIC

Refrigeration Industries Company (KSE 504) is a group holding company with diversified interests in manufacturing, contracting and services. Recognized regionally for our engineering capabilities and management excellence, RIC and its subsidiaries offer a wide range of high quality products and services that cater to both residential and commercial customers, in the areas of climate control technologies and specialized storage solutions.

In view of the growing Kuwait infrastructure and the limitations imposed on it by the country's arid climate, the Refrigeration Industries Company was established 43 years ago in 1973, by Amiri Decree. The company's operations began with the construction of the first cold stores in the region, to enable the storage of the imported foods, on which Kuwait relied. Along with the development and advancement of the country, so has RIC prospered and expanded, and is now a milestone in the history of modern Kuwait.

RIC takes pride in its successful record and the many accolades it has garnered over time, but the greatest achievement has been the provision of comfort and protection from the harsh climate, to the people of Kuwait.

More than 43 years of uninterrupted service, overcoming extreme weather conditions, war, economic recessions and ever increasing competition, is testimony to the fact that RIC has met the expectations and responsibilities that was envisioned at the beginning and also highlights the tenacity and vision to exceed them in the future.

Facts throughout the years

1973 Warehouses were established by Amiri Decree.

1979 RIC Constructed the Medical Cold Stores Complex, the world's largest at that time.

1980 RIC Air Conditioning manufacturing plant set up in Sulaibya.

1981 Production of Package & Mini-Split A/Cs started under York-Gulf.

1984 RIC was listed in Kuwait Stock Exchange.

1986 COOLEX brand Production Launched.

1991 RIC rebuilt the manufacturing plant destroyed during the war.

1997 Achieved ISO Certification ISO 9001:1994.

2002 ETL Designed testing lab became fully operational.

2004 Privatization of RIC.

2010 COOLEX becomes the first A/C Unit to Pass MEW's new regulations.

2010 RIC Factory Renovation and Expansion into neighboring countries.

2012 Achieved UL & AHRI Certification for Coolex Units.

2014 Achieved SASO Certification for Concealed Ducted Split Series.

2014 Achieved EUROVENT Certification for Air Handling Units AHU.

2014 Achieved UL Certification for Air Cooled Chillers.

2015 Achieved ISO 17025 Certification for Psychrometric Laboratory.

2016 Achieved Energy Efficiency Certification for Concealed Ducted Split Series & Rooftop Package units (Kingdom of Bahrain).

نبذة عن الشركة

شركة صناعات التبريد (متداولة في سوق الكويت للأوراق المالية برقم 504) هي شركة متنوعة الأنشطة تعمل في مجال التصنيع والمقاولات والخدمات. ونحن نقدم مجموعة كبيرة من المنتجات والخدمات والحلول التقنية في مجال مواجهة الظروف المناخية وحلول التخزين. وقد حازت الشركة على إعتراف إقليمي بقدراتها الهندسية وكفاءتها الإدارية.

شركة صناعات التبريد هي مجموعة شركات تهدف إلى توفير أعلى مستويات الجودة من حيث المنتجات والخدمات التي تلبي إحتياجات عملائها السكنية والتجارية. وعلى مدى ثلاثة و أربعون عاماً مضت على إنشاء شركتنا فقد إستطعنا أن نوطد أقدامنا في جميع قطاعات السوق الكويتي. ونحن إذ نفتخر بالإنجازات التي حققناها، إلا أننا أشد فخرا بأننا تمكنا من الوقوف إلى جانب أهل الكويت على مدى سنوات طويلة في مواجهة تقلبات الظروف المناخية القاسية سواء من حيث درجات الحرارة العالية أو الأتربة أو الرطوبة.

وبإعتبارها إحدى الشركات الصناعية العاملة في دولة الكويت، فقد واجهت الشركة تحديات وآمال كبيرة في سعيها لتحقيق النجاح، وقد كانت الشركة – ولا تزال – معلما من المعالم المهمة في نظر أهل الكويت لما قدمته من منتجات وخدمات إستطاعت أن تغير الطبيعة القاسية لمناخ الكويت. فبعد نحو 43 عاما تقريبا، لا يزال السؤال مطروحا حول تحقيقنا لهذه التوقعات، فهل إستطاعت الشركة أن تتحمل مسؤولياتها على الوجه الأكمل؟ ويأتي الرد بالإيجاب، فعلى مدى ثلاثة و أربعين عاما تقريبا لم تتوقف الشركة خلالها عن الإستمرار في تقديم خدماتها وأعمالها رغم الصعوبات التي تمثلت في ظروف الطقس القاسية أو الحروب أو الكساد الاقتصادي أو إرتفاع حدة المنافسة، فقد كانت كل واحدة من هذه الظروف بمثابة شهادة على أننا حققنا ما وعدنا به وما عقدنا العزم على تنفيذه.

حقائق وتواريخ

1973 تم إنشاء المستودعات بناء على مرسوم أميري.

1979 عهدت وزارة الصحة الكويتية لشركة صناعات التبريد بإنشاء مجمع مستودعات مخازن التبريد الطبية، وقد كان هذا المجمع حينها هو الأضخم من نوعه على مستوى العالم، وقد وصلت تكلفته إلى 12,000,000 دينار كويتي.

1980 تم إنشاء مصنع مكيفات الهواء التابع لشركة صناعات التبريد في الصليبية.

1981 بدء إنتاج أجهزة التكييف المدمجة والمنفصلة الصغيرة تحت علامة York-Gulf.

1984 تم قيد شركة صناعات التبريد في سوق الكويت للأوراق المالية.

1986 بدء إنتاج مكيفات علامة كولكس.

1991 قامت شركة صناعات التبريد بإعادة بناء مصنعها الذي دمرته الحرب.

1997 الحصول على شهادة الآيزو 9001:1994

2002 بدء تشغيل مختبر فحص وحدات التكييف (ETL)

2004 خصخصة شركة صناعات التبريد.

2010 كانت وحدات كولكس أول وحدات تكييف هواء تجتاز اللوائح التي أقرتها (وزارة الكهرباء والماء).

2010 تم تجديد مصنع شركة صناعات التبريد وبدء التوسع والتصدير إلى الدول المجاورة.

2012 الحصول على شهادة UL و AHRI لأجهزة التكييف كولكس.

2014 الحصول على شهادة SASO لأجهزة التكييف المنفصلة.

2014 الحصول على شهادة EUROVENT لأجهزة مناولة الهواء.

2014 الحصول على شهادة UL لمبردات الهواء الشيلر.

2015 الحصول على شهادة الأيزو ISO 17025 لمختبر السيكرومترية.

2016 الحصول على شهادة كفاء الطاقة لأجهزة التكييف المنفصلة و الوحدات المدمجة (مملكة البحرين).

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