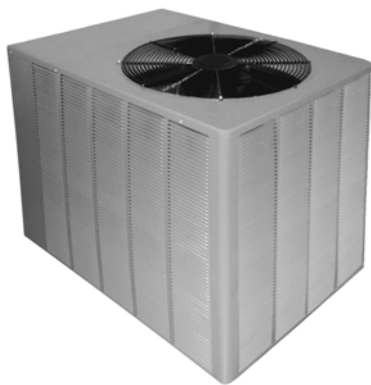


Air Cooled Split System Condensing Unit for Rooftop Systems and Air Handlers

Model RCS 06F to 20F
6.5 to 20 Tons
R-410A Refrigerant



6.5 – 7.5 Tons



10 – 12 Tons



15 – 20 Tons

Contents

Introduction	3	Unit Wiring	7
Why Use a High Efficiency, Air-Cooled Split System?	3	Physical Data	8
Agency Listed	3	Unit Capacity and Physical Data	8
Nomenclature	3	Performance Data	9
McQuay's Unique Features	4	Gross Capacity and Power	9
Components	5	Unit Capacities	11
Cabinet	5	Dimensional Data	15
Base Pan	5	Power Wiring	17
Compressors	5	Wiring Diagrams	19
Condenser Coil	5	Part 1: General	21
Refrigerant Connections	5	1.01 Summary	21
Crankcase Heaters	5	1.02 References	21
Low Ambient Control	5	1.03 Submittals	21
Service Valves	5	1.04 Qualifications	21
Service Access	5	1.05 Delivery and Handling	21
Condensing Section	5	1.06 Warranty	21
High Pressure Control	5	1.07 Maintenance	21
Low Pressure Control	5	Part 2: Products	21
Condenser Fan Motors	5	2.01 Acceptable Manufacturers	21
Equipment Ground	5	2.02 Unit Description	21
Testing	5	2.03 Design Requirements	21
Accessories	6	2.04 Condensing Section (Scroll)	21
Programmable Thermostat	6	2.05 Controls	22
Application Data	7	2.06 Electrical	22
General Rooftop Applications	7	Part 3: Execution	22
Unit Location	7	3.01 Installation	22
Service Clearance	7	3.02 Start-Up	22

Why Use a High Efficiency, Air-Cooled Split System?

- The size ranges offered by McQuay allow you to mix or match components to meet actual job requirements, thus eliminating the need to use oversized or undersized equipment. Equipment sized to meet the actual building load will provide better operating economy, better humidity control, and longer equipment life.
- With an air cooled system, you have no water or sewer connections to make, and no troublesome or costly water treatment.
- An air cooled split system is inherently more efficient than a air cooled chiller system. The air cooled split system has no pump and runs at a higher, more efficient suction pressure.
- Remote mounting of the already quiet condensing unit keeps the compressor and condenser fan noise outside. Vertical

discharge fans also contribute to quietness, carrying the noise up and away from the surrounding area.

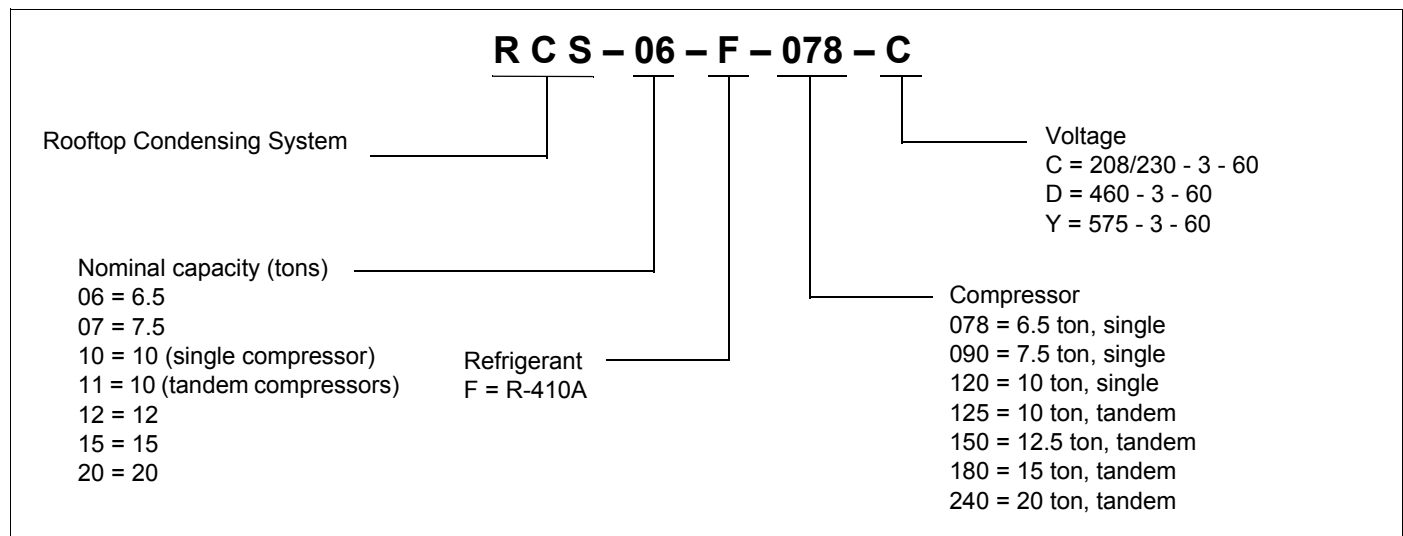
- Because of the simple design of the McQuay condensing unit, installation is quick, simple, and very little maintenance is required.

Note: For further information on a complete air-cooled split system, refer to Catalog 580 (Destiny Indoor Air Handlers).

Agency Listed



Nomenclature



Note: For larger size units (greater than 20 ton), refer to Catalog 222.

Introduction

McQuay's Unique Features

Louvers

- Full-face coil louvers for aesthetics and hail protection

Durable construction

- Pre-painted exterior cabinet panels pass 1000-hour ASTM B 117 Salt Spray Test for durability



Side/End View



Top View

Condenser fans

- Vertical air discharge for quiet operation

R410A refrigerant

- Environmentally friendly
- Excellent efficiency
- Insignificant glide making system easier to service

Condenser coils

- Large face area
- High efficiency enhanced copper tubing
- All aluminum fin design

Scroll compressors

- Provide maximum dependability, efficiency and quiet operation



End View

Components

Cabinet

- Galvanized steel with powder coat paint finish. The powder coat paint finish is high gloss, durable and capable of withstanding a 1000 hour salt spray test per ASTM B117.
- Unit is of the frame and panel type construction which allows all access panels to be opened or removed without affecting the structural strength of the unit.
- Fastening screws are also of the 1000 hour type.
- Stamped louver panels offer 100% protection for the condenser coil.

Base Pan

- Galvanized steel with powder coat paint finish.

Compressors

- High efficiency Copeland® scroll compressors.
- Engineered for long life and durability.
- Unloading (50%) is available on 10 to 20 ton models.
- All compressors have inherent high temperature protection.
- Mounted on isolators which reduce vibration and noise.

Condenser Coil

- Constructed with copper tubes and aluminum fins and mechanically bonded to the tubes for maximum heat transfer capabilities.
- Condenser coil assemblies are leak tested up to 450 psig internal pressure.

Refrigerant Connections

- Field sweat joints are made external of the unit and are located close to the ground for a neat looking installation.

Crankcase Heaters

- Standard on 6 – 20 ton models.

Low Ambient Control

- Pressure sensitive fan cycling control allows operation down to 0°F [-17.8°C].

Service Valves

- Standard on liquid and suction lines for all models.

Service Access

- Control box with separate line and control voltages, as well as compressor and other refrigerant controls are accessible through access panels.
- Electrical access cover may be opened or removed without affecting normal operation of the unit.
- Condenser fan motors have molded plugs for easy removal.
- Removable louver panels/end access panel for coil cleaning.

Condensing Section

- Open design permits unrestricted condenser airflow, access to compressors, refrigeration components, piping, and access for roof maintenance.
- High efficiency Copeland® scroll compressors.
- 10 – 20 ton units feature dual compressors for redundancy and efficient capacity control.
- Large face area condenser for high operating efficiencies.
- Vertical air discharge minimizes noise.

High Pressure Control

- Manual reset control deactivates system (opens contactor circuit) if abnormally high pressure occurs.

Low Pressure Control

- Automatic reset control deactivates system if abnormally low pressure or refrigerant loss occurs.

Condenser Fan Motors

- Direct drive, single-phase, permanently lubricated “PSC” motors with inherent thermal overload.

Equipment Ground

- Lug for field connection of ground wire.

Testing

- All units are run-tested at the factory prior to shipment. Units are shipped with a nitrogen holding charge.

Introduction

Accessories

Accessories (Table 1) can be added to further enhance the unit.

Table 1: Accessories

Accessory description	Model number	Sizes used on
Anti-short cycle timer kit	RXAT-A01	All
Sight glass	RXAG-A048	6.5 – 15 ton
Sight glass	RXAG-A020	20 ton

Programmable Thermostat

The commercial setback digital thermostat uses microcomputer technology to provide precise time and temperature control. This thermostat offers the flexibility to design heating and cooling programs that fit building needs. This thermostat is adaptable to most residential 24 volt forced air multi-stage systems with electric or fossil fuel auxiliary and is the ultimate for comfort, convenience, and performance.

Figure 1: Thermostat



Features

The thermostat can enhance your HVAC system by offering you the following performance features.

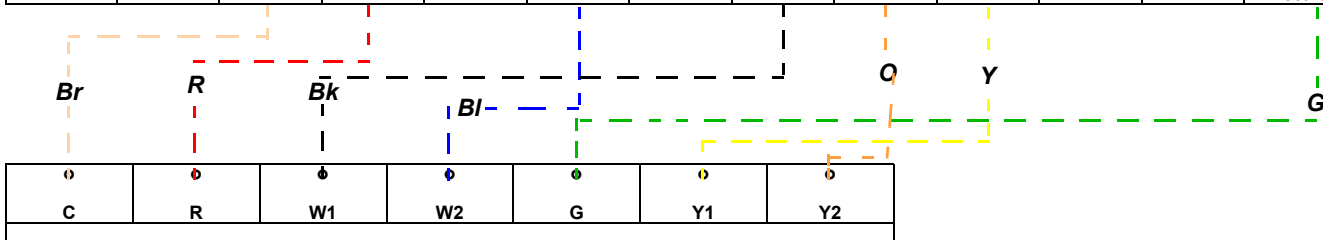
- Automatic heat/cool system changeover
- Fossil fuel or electric heat compatible
- Large luminescent display and industry first lighted keypad
- Permanent program memory
- Configuration menu allows keypad selection of options, no additional sub-bases required
- Selectable energy management recovery
- Onboard system and thermostat diagnostics
- Single stage models accept remote indoor sensor
- Staging models accept up to three indoor sensors and offer temperature averaging or weighted average by sensor location and program time

Typical connection

Use the terminal output information below to help you wire the thermostat properly for your multi-stage system. Colors shown are typical.

Thermostat Terminals (Upper)						
L	PH	D	SA	SB	SC	OT
Malfunction Light	X-10 Module Input	Not Used	Remote Sense A	Remote Sense B	Remote Sense C	Outdoor Sensor

Thermostat Terminals (Lower)												
System	E	C	R	W3/A1	W2	E2/P	W1	Y2	Y1	B	O	G
Multi-Stage	No Function	24 Volt (Common)	24 Volt (Hot)	Heat Mode 3rd Stage	Heat Mode 2nd Stage	No Function	Heat Mode 1st Stage	Cool Mode 2nd Stage	Cool Mode 1st Stage	Energized in Heat and Off Mode	Energized in Cool Mode	Blower/Fan Energized on call for Cool (and heat if configured to Electric Heat)



- 1 Use a wirenut to extend from the leads provided in the unit to the thermostat.
- 2 W1, W2, Y2 are optional depending upon size/options.

General Rooftop Applications

Units are intended for use in normal heating, ventilating, and air conditioning applications. Consult your local McQuay sales representative for applications involving operation at high ambient temperatures, high altitudes, non-cataloged voltages, and for job specific unit selections that fall outside of the range of the catalog tables.

For proper operation, units should be rigged in accordance with instructions stated in IM 962 (6 to 20 ton units). Follow factory check, test and start procedures explicitly to achieve satisfactory start-up and operation (refer to IM 962).

Unit Location

A structural engineer must verify that the roof has adequate strength and ability to minimize deflection.

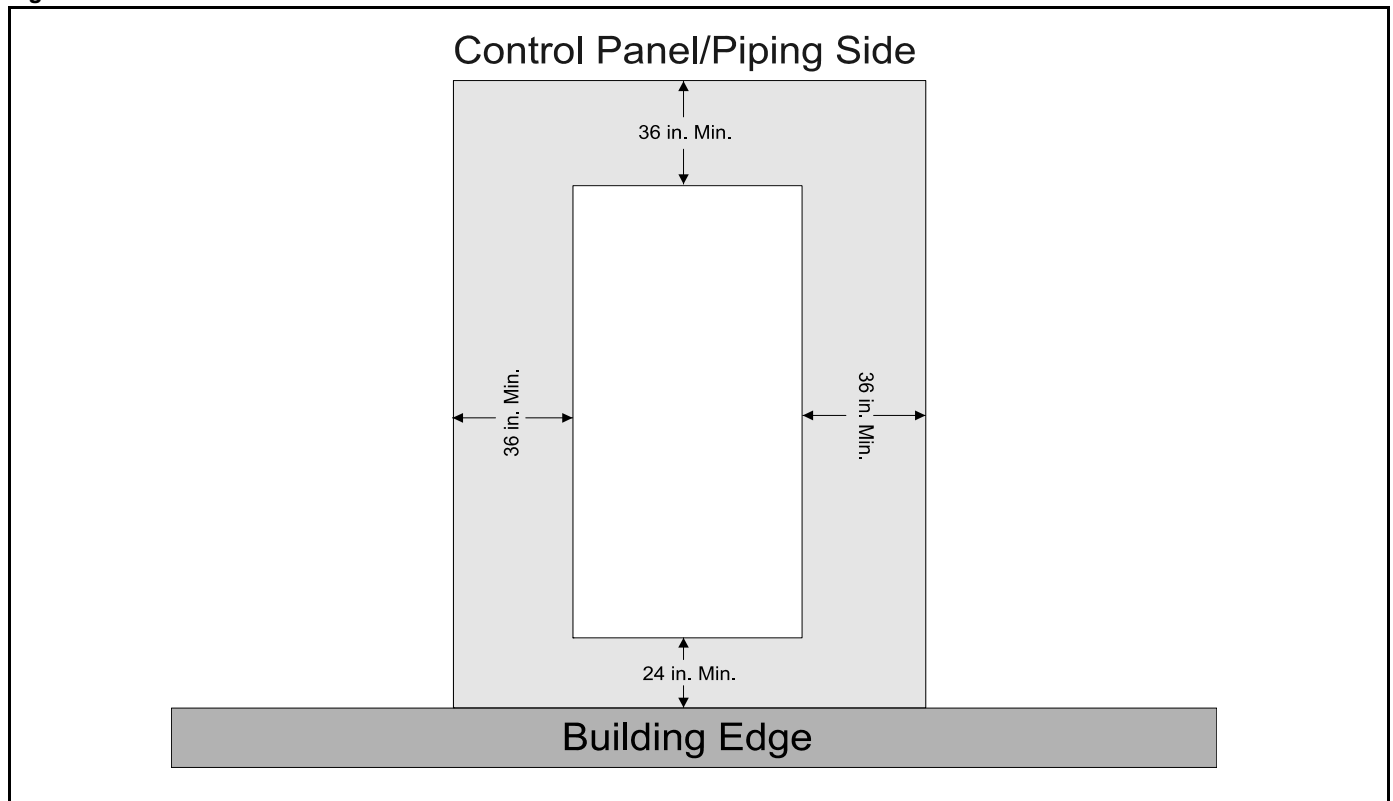
Unit condenser coils should be located in an area that will avoid contact with any heated exhaust air.

Allow sufficient space around the unit for maintenance/service clearance. Refer to [Figure 2](#) for recommended clearances. Consult your McQuay sales representative if available clearances do not meet minimum recommendations. Where code considerations (such as the NEC) require extended clearances, those codes take precedence.

Service Clearance

Allow recommended service clearances for units as shown in [Figure 2](#). Provide a roof walkway along the sides of the unit for service and access to controls and components. Contact your McQuay sales representative for service requirements less than those recommended.

Figure 2: RCS 06E – 20E Service Clearances



Unit Wiring

All units require three phase, 60 Hz, 208/230, 230, 460, or 575 volt power supply. All units include branch circuits and short circuit protection and are available with a power block.

All wiring must be installed in accordance with the National Electric Code (NEC) and local codes.

Physical Data

Unit Capacity and Physical Data

Table 2: RCS 06F – 20F

Model	RCS						
	06F Single	07F Single	10F Single	11F Tandem	12F Tandem	15F Tandem	20F Tandem
Capacity and Weight							
Capacity (tons) [kW]	6.5 [22.9]	7.5 [26.4]	10 [35.2]	10 [35.2]	12 [42.2]	15 [52.8]	20 [70.3]
Operating weight	264 [119.8]	283 [128.4]	501 [227.3]	586 [265.8]	650 [294.8]	746 [338.4]	952 [431.8]
Shipping weight	287 [130.2]	306 [138.8]	541 [245.4]	626 [284.0]	690 [313.0]	786 [356.5]	992 [450.0]
Compressor							
Quantity	1	1	1	2	2	2	2
Type	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
RPM	3500	3500	3500	3500	3500	3500	3500
Refrigerant charge R410A oz. [g]	178 [5046]	242 [6861]	339 [9661]	300 [8505]	378 [10,716]	506 [14,345]	655 [18,569]
Condenser Fans							
Quantity	1	1	2	2	2	3	3
CFM [L/s]	4700 [2218]	4700 [2218]	8100 [3822]	8100 [3822]	8100 [3882]	12,000 [5663]	12,000 [5663]
Diameter (in.) [mm]	24 [610]	24 [610]	24 [610]	24 [610]	24 [610]	24 [610]	24 [610]
Drive	Direct	Direct	Direct	Direct	Direct	Direct	Direct
Motor horsepower each [W]	1/3 [249]	1/3 [249]	1/3 [249]	1/3 [249]	1/3 [249]	1/3 [249]	1/3 [249]
Type	PSC	PSC	PSC	PSC	PSC	PSC	PSC
RPM	1075	1075	1075	1075	1075	1075	1075
Condenser Coil							
Quantity	1	1	2	2	2	2	2
Rows	1 1/2	2	2	2	2	2	3
Fins per inch	20	22	18	22	22	22	22
Sq. ft. [m ²]	23.0 [2.14]	23.0 [2.14]	27.0 [2.51]	27.0 [2.51]	33.9 [3.05]	40.38 [3.75]	40.38 [3.75]
Fins/tubes	Aluminum/Copper						
Cabinet							
Finish	Powder Coat						
Sheet metal	Galvanized						
Gauge (nominal) top	20	20	20	20	20	20	20
Sides	20	20	20	20	20	20	20
Base rails	14	14	14	14	14	14	14
Refrigerant Connection							
Vapor sweat (in.) [mm]	1-1/8 [29]	1-1/8 [29]	1 3/8 [35]	1 3/8 [35]	1 3/8 [35]	1 3/8 [35]	1 5/8 [41.3]
Liquid sweat (in.) [mm]	1/2 [13]	1/2 [13]	5/8 [16]	5/8 [16]	5/8 [16]	5/8 [16]	7/8 [22]

Gross Capacity and Power

Table 3: RCS 06F

Outdoor Ambient Temp. °F [°C]	RCS 06F					
	Saturated Evaporator Temperature °F [°C]					
	40 [4]		45 [7]		50 [10]	
	MBh [kW]	kW*	MBh [kW]	kW	MBh [kW]	kW
75 [24]	75.8 [22.20]	4.9	82.2 [24.09]	5.0	89.1 [26.12]	5.0
80 [27]	73.4 [21.52]	5.2	80.0 [23.43]	5.2	86.8 [25.43]	5.3
85 [29]	71.1 [20.83]	5.4	77.5 [22.72]	5.5	84.5 [24.75]	5.5
90 [32]	68.8 [20.15]	5.7	75.2 [22.03]	5.8	82.0 [24.03]	5.8
95 [35]	66.3 [19.43]	6.0	72.9 [21.35]	6.1	79.7 [23.35]	6.1
100 [38]	64.0 [18.75]	6.3	70.5 [20.66]	6.4	77.3 [22.66]	6.4
105 [41]	61.6 [18.06]	6.6	68.1 [19.95]	6.7	75.0 [21.98]	6.7
110 [43]	59.3 [17.38]	7.0	65.7 [19.26]	7.0	72.6 [21.26]	7.1
115 [46]	56.9 [16.66]	7.3	63.4 [18.58]	7.4	70.2 [20.58]	7.5

Table 4: RCS 07F

Outdoor Ambient Temp. °F [°C]	RCS 07F					
	Saturated Evaporator Temperature °F [°C]					
	40 [4]		45 [7]		50 [10]	
	MBh [kW]	kW*	MBh [kW]	kW	MBh [kW]	kW
75 [24]	96.5 [22.20]	6.0	104.5 [24.09]	6.2	112.7 [26.12]	6.3
80 [27]	93.7 [21.52]	6.3	101.6 [23.43]	6.5	109.9 [25.43]	6.6
85 [29]	90.8 [20.83]	6.6	98.7 [28.92]	6.8	107.1 [31.37]	6.9
90 [32]	88.0 [25.78]	7.0	95.8 [28.07]	7.1	104.2 [30.52]	7.2
95 [35]	85.1 [24.93]	7.3	92.9 [27.23]	7.4	101.3 [29.68]	7.6
100 [38]	82.2 [24.09]	7.7	90.2 [26.41]	7.8	98.5 [28.86]	8.0
105 [41]	79.3 [23.24]	8.1	87.3 [25.57]	8.3	95.6 [28.01]	8.4
110 [43]	76.5 [22.43]	8.6	84.4 [24.72]	8.7	92.7 [27.17]	8.9
115 [46]	73.7 [21.58]	9.1	81.5 [23.88]	9.3	89.8 [26.32]	9.4

Table 5: RCS 10F

Outdoor Ambient Temp. °F [°C]	RCS 10F					
	Saturated Evaporator Temperature °F [°C]					
	40 [4]		45 [7]		50 [10]	
	MBh [kW]	kW*	MBh [kW]	kW	MBh [kW]	kW
75 [24]	118.0 [34.58]	7.2	129.4 [37.91]	7.3	141.2 [41.37]	7.5
80 [27]	114.6 [33.59]	7.5	125.7 [36.83]	7.7	137.2 [40.02]	7.9
85 [29]	111.2 [32.59]	7.9	122.0 [35.75]	8.1	133.2 [39.03]	8.2
90 [32]	107.8 [31.60]	8.3	118.3 [34.66]	8.5	129.2 [37.87]	8.6
95 [35]	104.4 [30.60]	8.7	114.6 [33.58]	8.9	125.3 [36.70]	9.0
100 [38]	101.0 [29.61]	9.1	110.9 [32.50]	9.3	121.3 [35.53]	9.4
105 [41]	97.6 [28.61]	9.5	107.2 [31.42]	9.7	117.3 [34.37]	9.8
110 [43]	94.3 [27.62]	9.9	103.5 [30.34]	10.1	113.3 [33.20]	10.2
115 [46]	90.9 [26.62]	10.3	99.8 [29.25]	10.4	109.3 [32.03]	10.6

Note: kW = total kilowatts.
 MBh = gross capacity x 1000 Btuh.
 All values at approximately 20°F [11.1°C] subcooling.
 Data includes 25 feet [7.62 m] of recommended vapor and liquid lines.

Performance Data

Table 6: RCS 11F

Outdoor Ambient Temp. °F [°C]	RCS 11F					
	Saturated Evaporator Temperature °F [°C]					
	40 [4]		45 [7]		50 [10]	
	MBh [kW]	kW*	MBh [kW]	kW	MBh [kW]	kW
75 [24]	117.5 [34.43]	7.0	128.6 [37.68]	7.1	140.3 [41.12]	7.2
80 [27]	114.0 [33.39]	7.4	124.9 [36.59]	7.5	136.4 [39.95]	7.7
85 [29]	110.4 [32.35]	7.9	121.2 [35.50]	8.0	132.4 [38.78]	8.1
90 [32]	106.9 [31.31]	8.3	117.4 [34.41]	8.4	128.4 [37.62]	8.5
95 [35]	103.3 [30.27]	8.7	113.7 [33.32]	8.8	124.4 [36.45]	9.0
100 [38]	99.8 [29.23]	9.2	110.0 [32.23]	9.3	120.4 [35.28]	9.4
105 [41]	96.2 [28.19]	9.6	106.3 [31.14]	9.7	116.4 [34.11]	9.9
110 [43]	92.7 [27.15]	10.1	102.5 [30.05]	10.1	112.4 [32.94]	10.3
115 [46]	89.1 [26.11]	10.5	98.8 [28.96]	10.6	108.4 [31.77]	10.7

Table 7: RCS 12F

Outdoor Ambient Temp. °F [°C]	RCS 12F					
	Saturated Evaporator Temperature °F [°C]					
	40 [4]		45 [7]		50 [10]	
	MBh [kW]	kW*	MBh [kW]	kW	MBh [kW]	kW
75 [24]	151.6 [44.42]	9.5	164.3 [48.13]	9.6	177.2 [51.90]	9.7
80 [27]	147.0 [43.06]	10.0	159.4 [46.69]	10.1	172.0 [50.39]	10.3
85 [29]	142.3 [41.70]	10.6	154.5 [45.26]	10.7	166.8 [48.88]	10.8
90 [32]	137.7 [40.33]	11.1	149.5 [43.82]	11.2	161.7 [47.36]	11.3
95 [35]	133.0 [38.97]	11.6	144.6 [42.38]	11.7	156.5 [45.85]	11.9
100 [38]	128.3 [37.61]	12.1	139.7 [40.94]	12.3	151.3 [44.34]	12.4
105 [41]	123.7 [36.24]	12.7	134.8 [39.50]	12.8	146.2 [42.82]	12.9
110 [43]	119.0 [34.88]	13.2	129.9 [38.07]	13.3	141.0 [41.31]	13.4
115 [46]	114.4 [33.51]	13.7	125.0 [36.63]	13.8	135.8 [39.80]	14.0

Table 8: RCS 15F

Outdoor Ambient Temp. °F [°C]	RCS 15F					
	Saturated Evaporator Temperature °F [°C]					
	40 [4]		45 [7]		50 [10]	
	MBh [kW]	kW*	MBh [kW]	kW	MBh [kW]	kW
75 [24]	200.8 [58.84]	11.4	216.3 [63.38]	11.8	222.7 [65.24]	12.2
80 [27]	194.3 [56.94]	12.2	209.8 [61.47]	12.6	217.8 [63.82]	12.9
85 [29]	187.8 [55.03]	13.0	203.3 [59.56]	13.3	213.0 [62.40]	13.7
90 [32]	181.3 [53.12]	13.8	196.7 [57.64]	14.1	208.1 [60.98]	14.5
95 [35]	174.8 [51.22]	14.5	190.2 [55.73]	14.8	203.3 [59.56]	15.2
100 [38]	168.3 [49.31]	15.3	183.7 [53.82]	15.6	198.4 [58.14]	16.0
105 [41]	161.8 [47.40]	16.1	177.1 [51.90]	16.3	193.6 [56.72]	16.7
110 [43]	155.3 [45.50]	16.9	170.6 [49.99]	17.1	188.7 [55.30]	17.5
115 [46]	148.8 [43.59]	17.6	164.1 [48.08]	17.8	183.9 [53.88]	18.2

Note: kW = total kilowatts.
 MBh = gross capacity x 1000 Btuh.
 All values at approximately 20°F [11.1°C] subcooling.
 Data includes 25 feet [7.62 m] of recommended vapor and liquid lines.

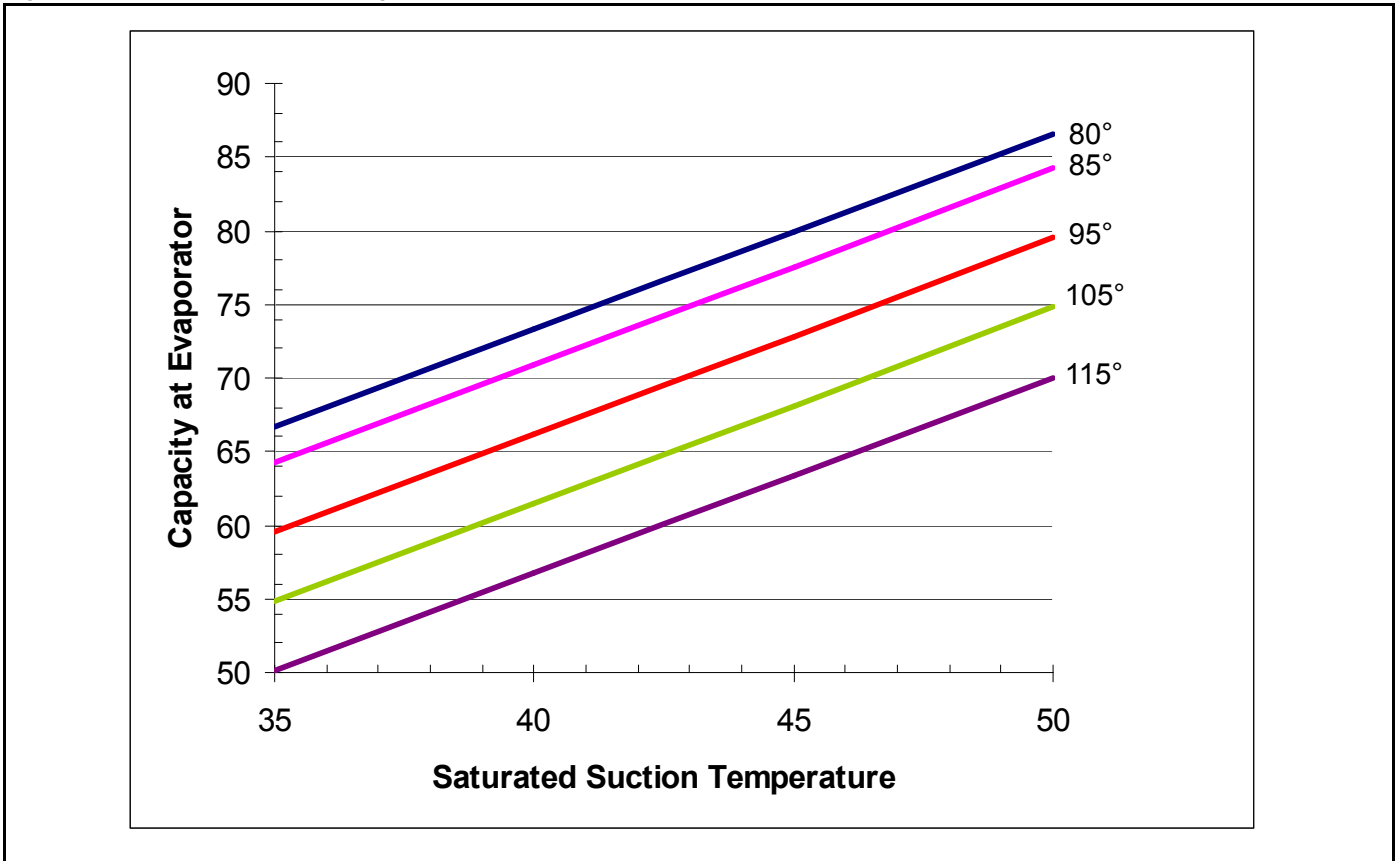
Table 9: RCS 20F

Outdoor Ambient Temp. °F [°C]	RCS 20F					
	Saturated Evaporator Temperature °F [°C]					
	40 [4]		45 [7]		50 [10]	
	MBh [kW]	kW*	MBh [kW]	kW	MBh [kW]	kW
75 [24]	272.7 [79.90]	17.6	294.3 [86.23]	18.0	316.7 [92.79]	18.5
80 [27]	264.1 [77.39]	18.5	285.6 [83.67]	18.9	307.7 [90.14]	19.4
85 [29]	255.6 [74.88]	19.4	276.9 [81.12]	19.9	298.6 [87.50]	20.3
90 [32]	247.0 [72.37]	20.4	268.1 [78.56]	20.8	289.6 [84.86]	21.3
95 [35]	238.5 [69.87]	21.3	259.4 [73.45]	21.7	280.6 [82.22]	22.2
100 [38]	229.9 [67.36]	22.2	250.7 [73.45]	22.6	271.6 [79.58]	23.1
105 [41]	221.3 [64.85]	23.1	242.0 [70.89]	23.5	262.6 [76.94]	24.1
110 [43]	212.8 [62.35]	24.0	233.2 [68.34]	24.4	253.6 [74.29]	25.0
115 [46]	204.2 [59.84]	24.9	224.5 [65.78]	25.3	244.5 [71.65]	25.9

Note: kW = total kilowatts.
 MBh = gross capacity x 1000 Btuh.
 All values at approximately 20°F [11.1°C] subcooling.
 Data includes 25 feet [7.62 m] of recommended vapor and liquid lines.

Unit Capacities

Figure 3: RCS 06F R410A Unit Capacities



Performance Data

Figure 4: RCS 07F R410A Unit Capacities

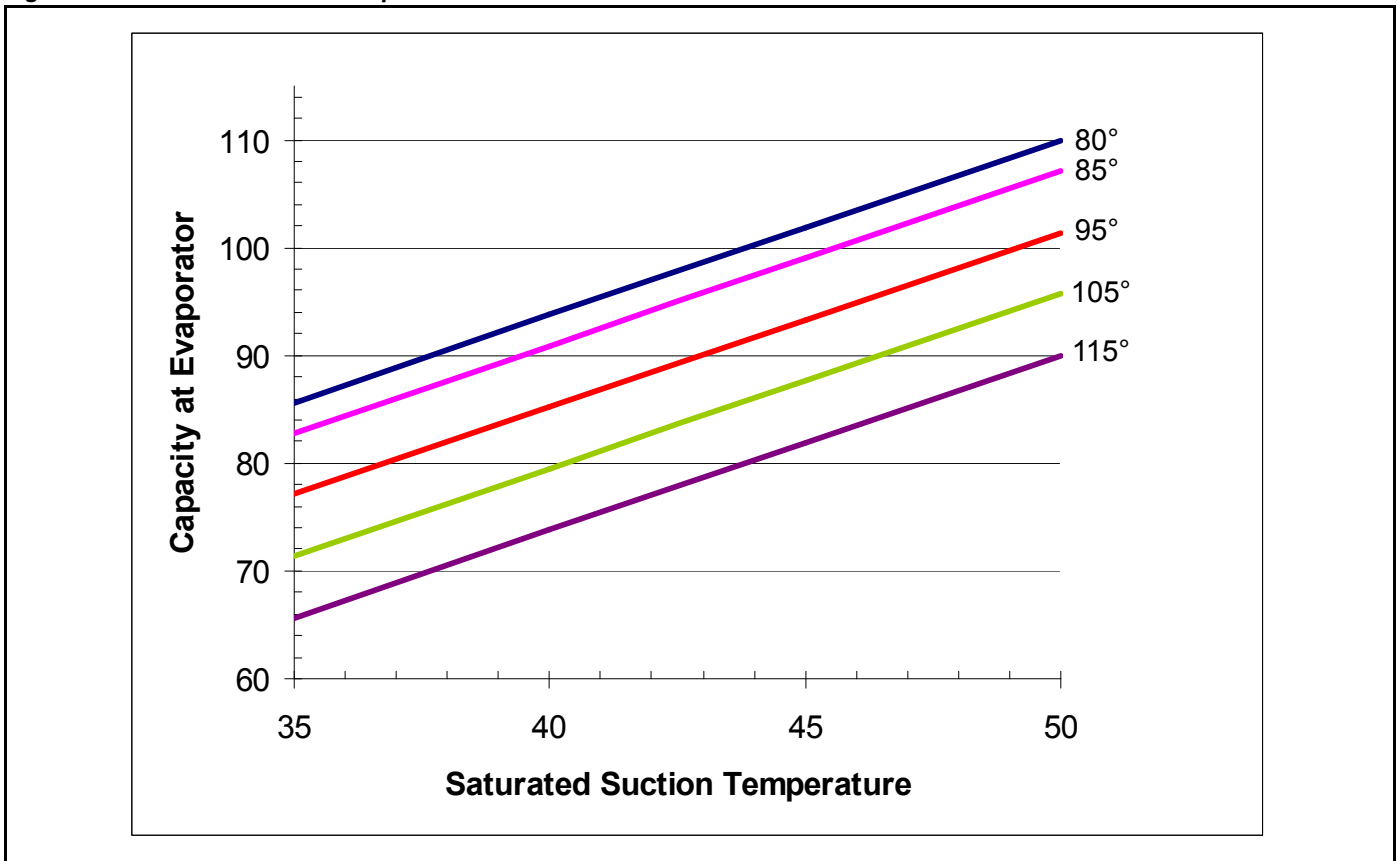


Figure 5: RCS 10F R410A Unit Capacities

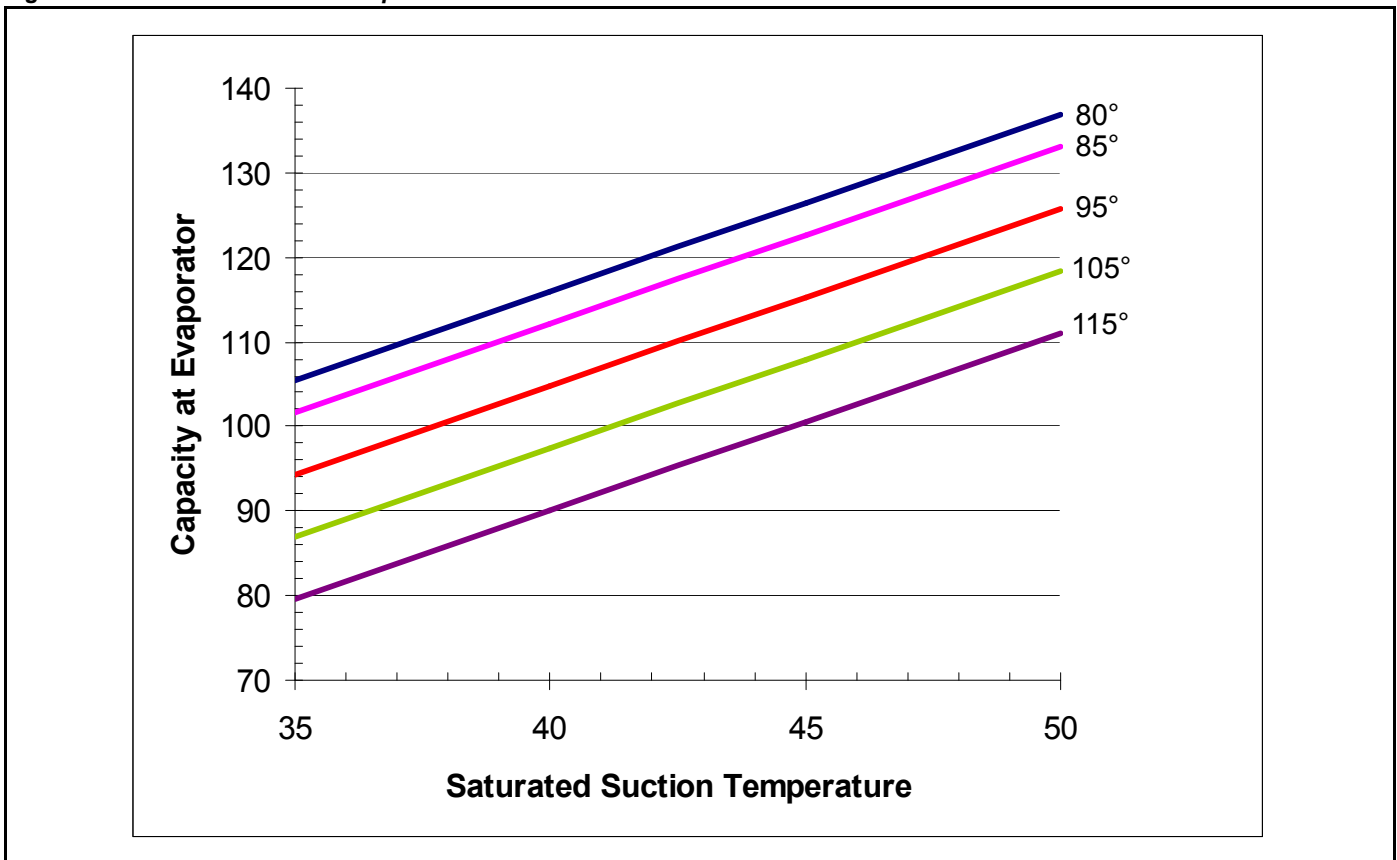


Figure 6: RCS 11F R410A Unit Capacities

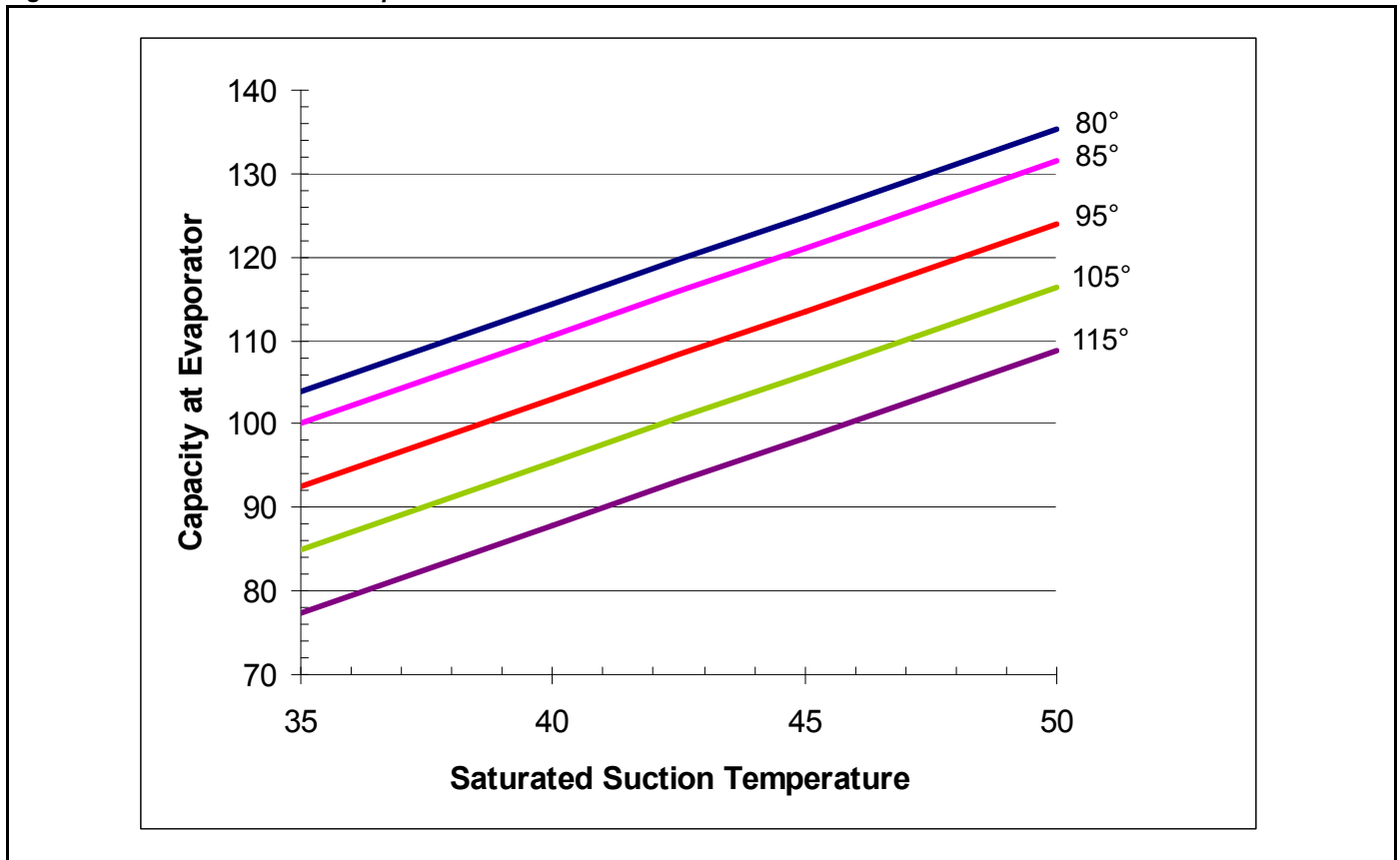
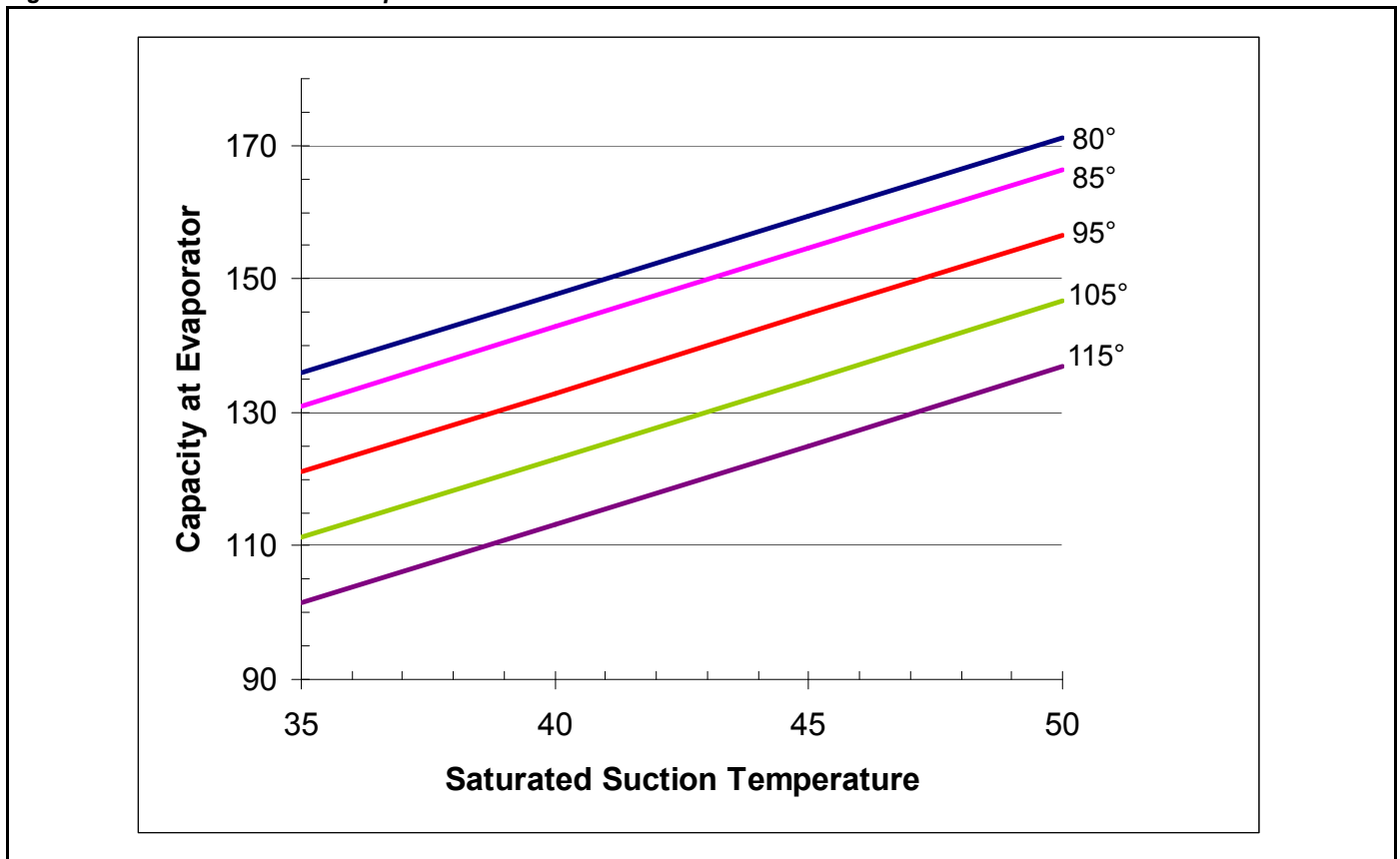


Figure 7: RCS 12F R410A Unit Capacities



Performance Data

Figure 8: RCS 15F R410A Unit Capacities

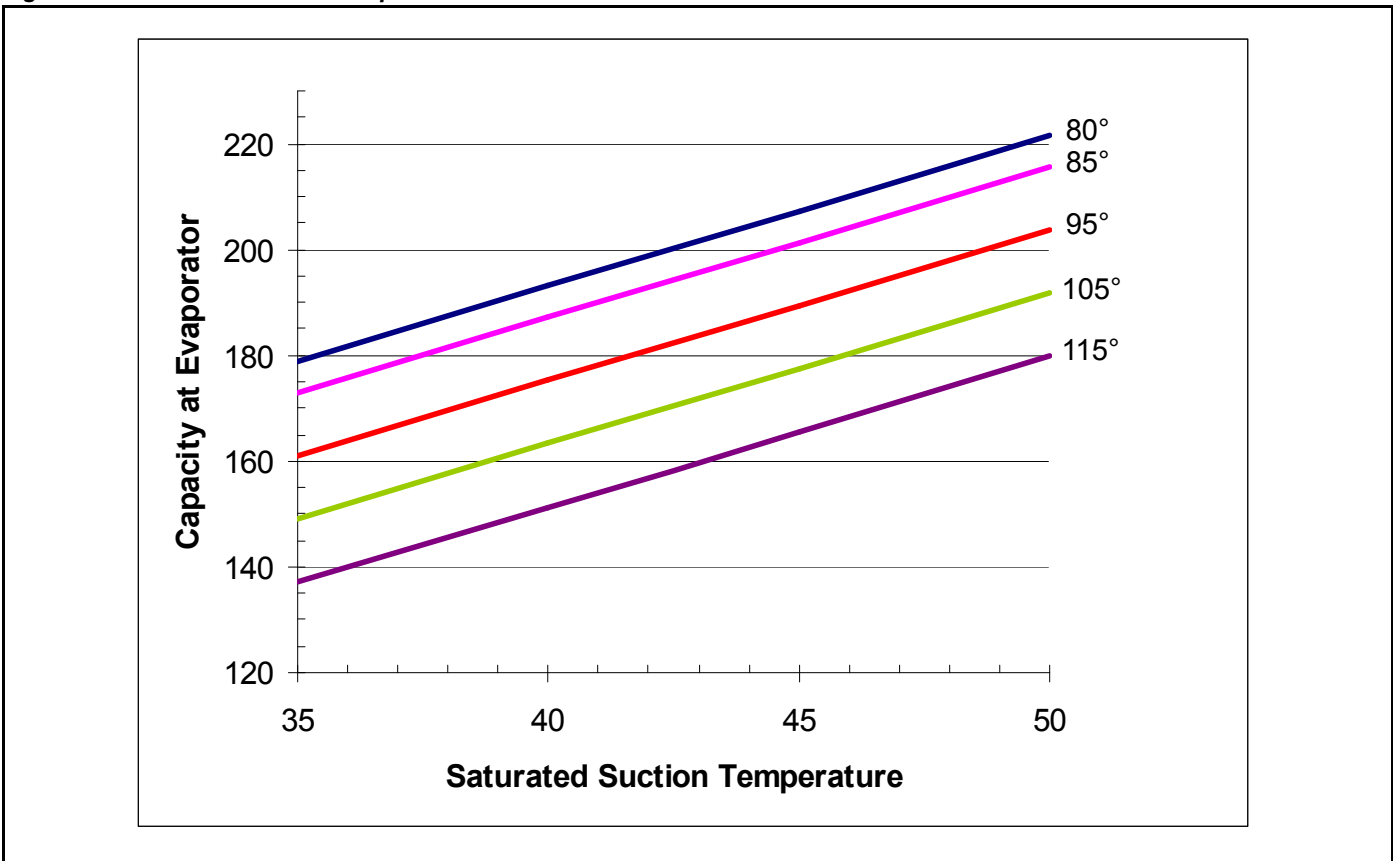
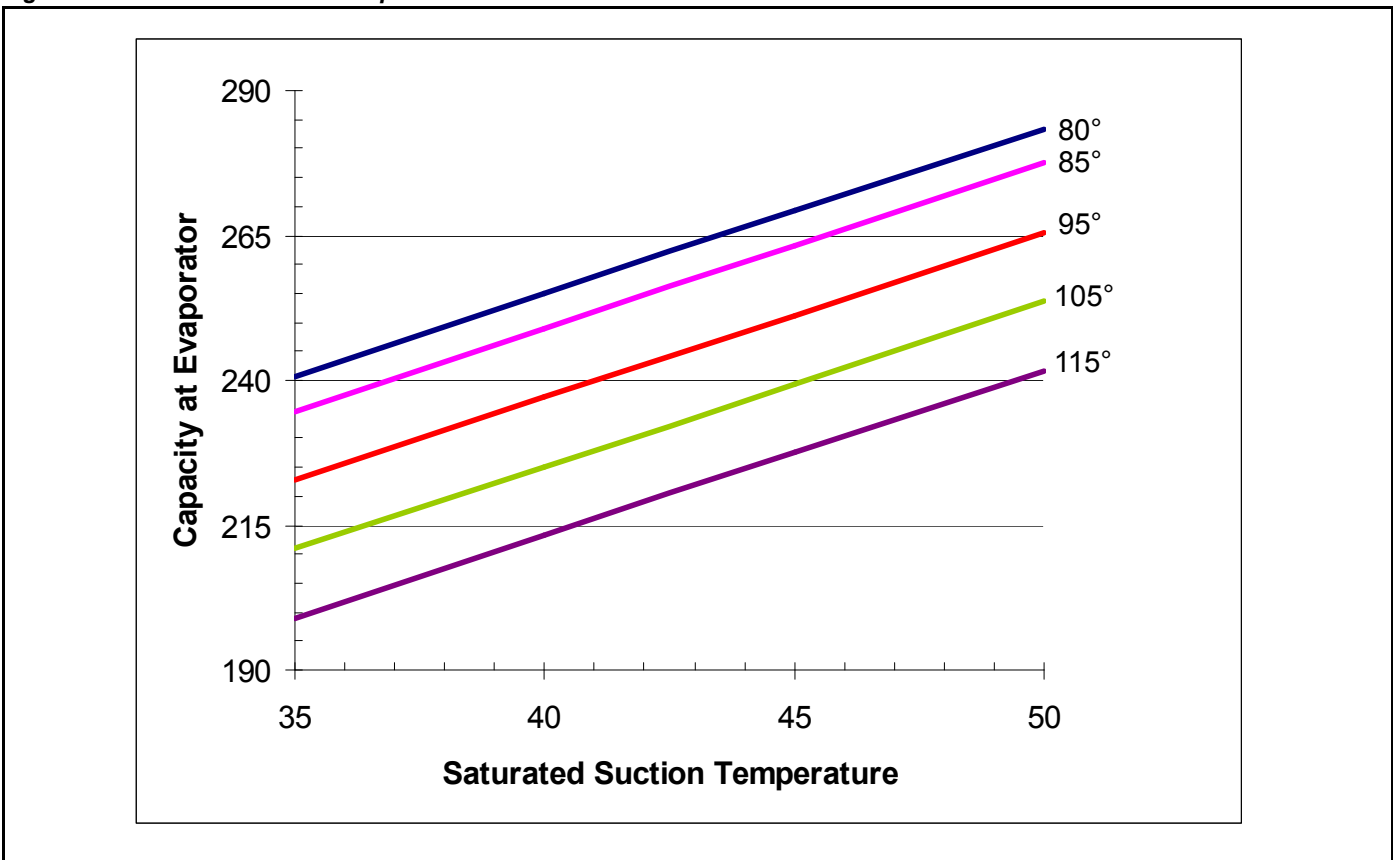


Figure 9: RCS 20F R410A Unit Capacities



Dimensional Data

Figure 10: RCS 06F and 07F Dimensions and Weights

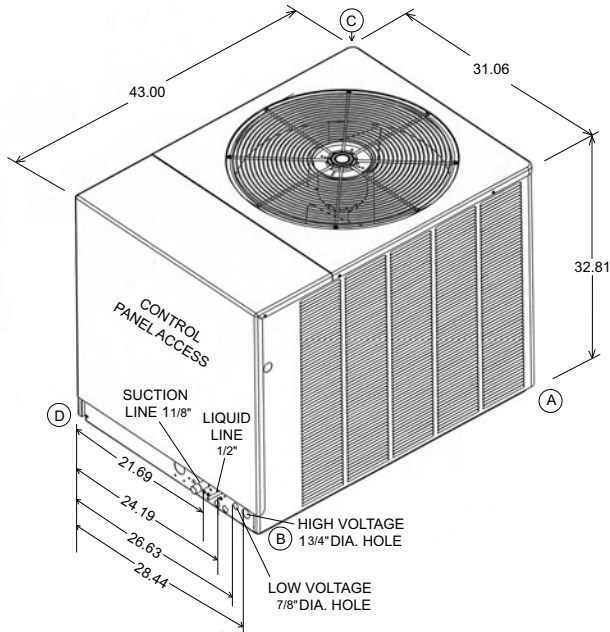


Table 10: RCS 06F and 07F Operating Weights

RCS model	Total weight lbs. [kg]	Corner weight lbs. [kg]			
		A	B	C	D
06F	264 [119]	45 [20.41]	66 [29.94]	63 [28.58]	90 [40.8]
07F	203 [128]	47 [21.3]	75 [34.0]	63 [28.6]	98 [44.5]

Figure 11: RCS 10F and 11F Dimensions and Weights

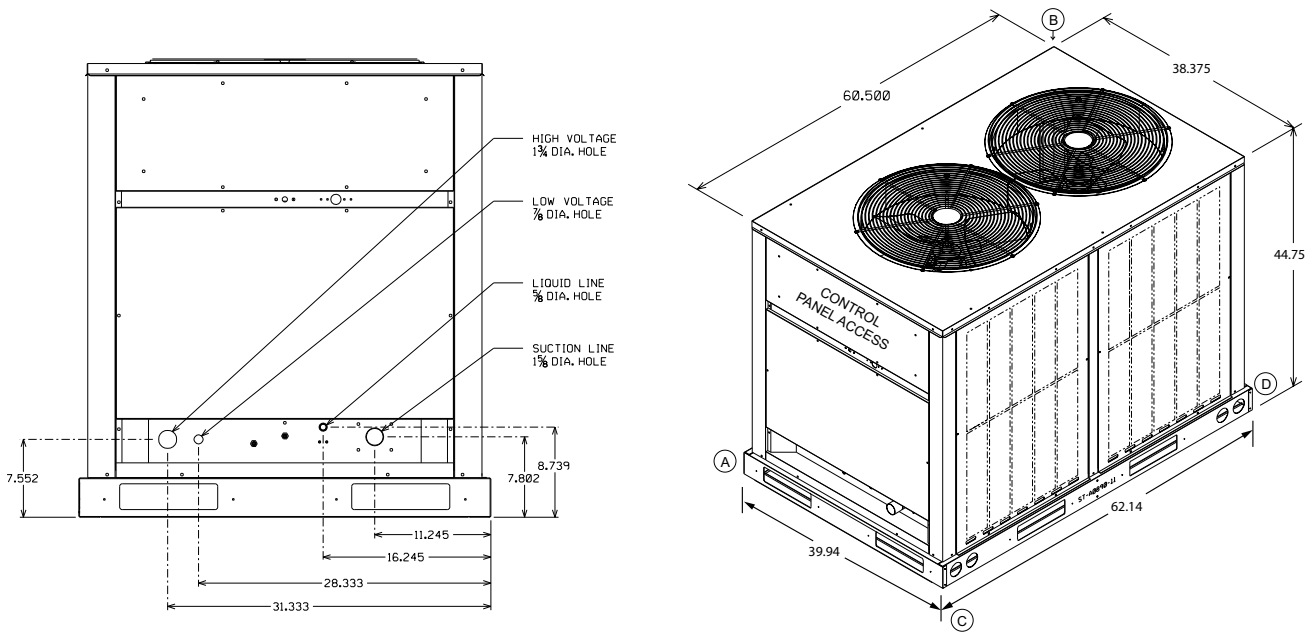


Table 11: RCS 10F and 11F Operating Weights

RCS model	Total weight lbs. [kg]	Corner weight lbs. [kg]			
		A	B	C	D
10F (Single)	501 [228]	123 [53.9]	132 [60.0]	119 [54.1]	127 [58.0]
11F (Tandem)	586 [266]	144 [65.3]	154 [69.9]	139 [63.2]	149 [67.6]

Performance Data

Figure 12: RCS 12F Dimensions and Weights

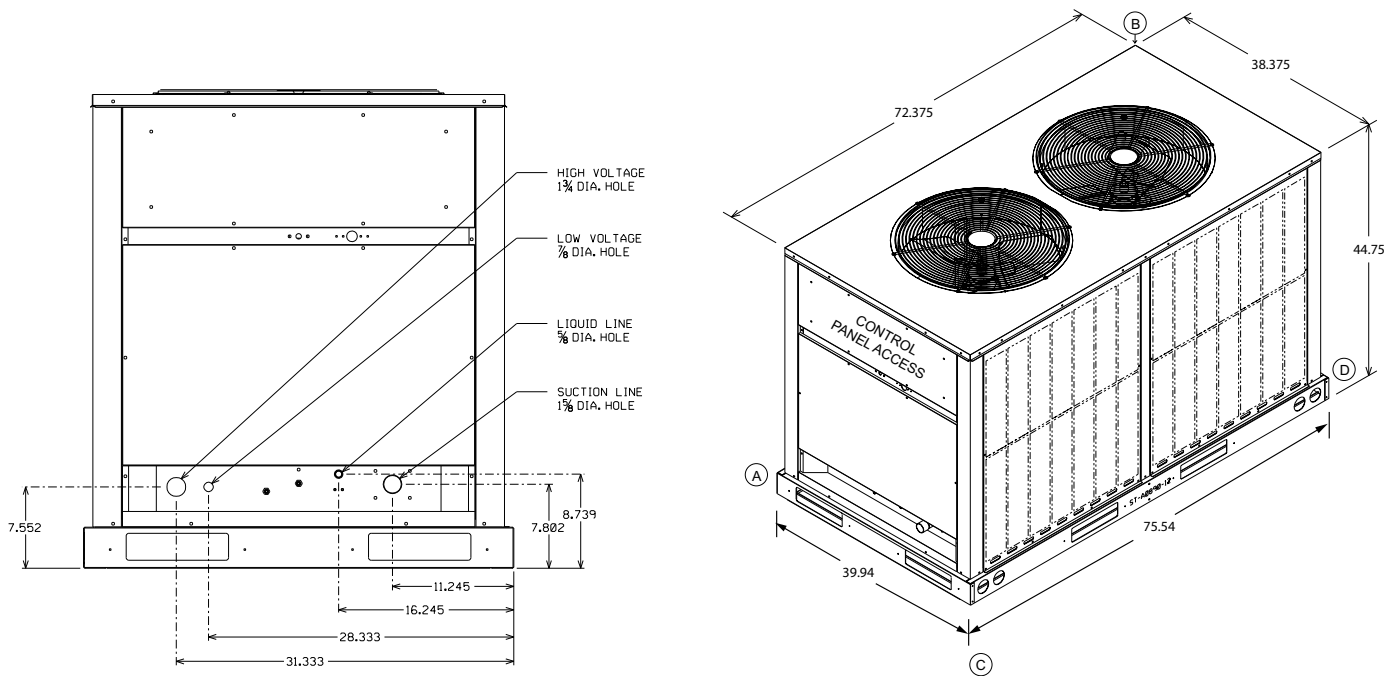


Table 12: RCS 12F Operating Weights

RCS model	Total weight lbs. [kg]	Corner weight lbs. [kg]			
		A	B	C	D
12F	650 [293]	160 [72.0]	171 [78.0]	154 [70.0]	165 [75.0]

Figure 13: RCS 15F – 20F Dimensions and Weights

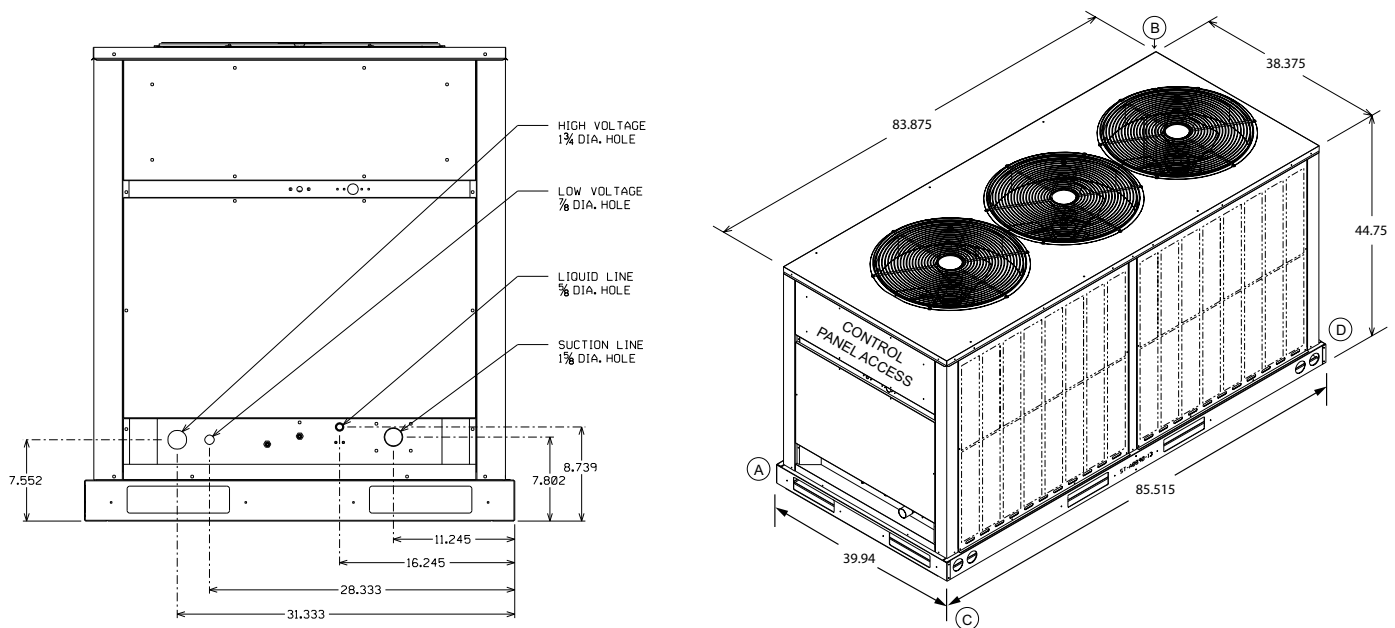


Table 13: RCS 15F and 20F Operating Weights

RCS model	Total weight lbs. [kg]	Corner weight lbs. [kg]			
		A	B	C	D
15F	746 [338.0]	183 [83.0]	196 [89.0]	177 [80.0]	189 [86.0]
20F	952 [432.0]	234 [106.0]	251 [114.0]	226 [103.0]	241 [110.0]

Power Wiring

Table 14: RCS 06F and 07F Electrical Data

Model	RCS					
	06F			07F		
Compressor Motor						
Electrical characteristics	208/230-3-60	460-3-60	575-3-60	208/230-3-60	460-3-60	575-3-60
Operating Current						
Rated load amps (each) ¹	22.4	10.6	7.0	25.0	12.2	9.0
Locked rotor amps (each) ¹	149	75	54	164	100	78
Condenser Fan Motors						
Volt and phase	208/230-1	460-1	575-1	208/230-1	460-1	575-1
Full load amps (each)	2.2	1.3	1.0	2.2	1.3	1.0
System characteristics						
Unit full load amps ²	25.0	12.0	8.0	28.0	14.0	10.0
Minimum circuit ampacity	30.2	14.6	9.8	33.5	16.6	12.3
Maximum fuse size (amps) or HACR circuit breaker ampacity ³	50	25	15	50	25	20
Disconnect size	60	30	30	60	30	30

Note: ¹ Each Compressor
² Conditions at 45° suction and 95° ambient
³ Local codes take precedent over recommended fuse size

Table 15: RCS 10F (Single) and 11F (Tandem) Electrical Data

Model	RCS					
	10F (Single)			11F (Tandem)		
Compressor Motor						
Electrical characteristics	208/230-3-60	460-3-60	575-3-60	208/230-3-60	460-3-60	575-3-60
Operating Current						
Rated load amps (each) ¹	30.1	16.7	12.2	17.6	9.6	6.1
Locked rotor amps (each) ¹	225	114	80	135	64	40
Condenser Fan Motors						
Volt and phase	208/230-1	460-1	575-1	208/230-1	460-1	575-1
Full load amps (each)	2.2	1.3	1.0	2.2	1.3	1.0
System characteristics						
Unit full load amps ²	39.0	19.5	15.0	40.0	22.0	19.0
Minimum circuit ampacity	42.0	23.5	17.3	44.0	23.6	16.3
Maximum fuse size (amps) or HACR circuit breaker ampacity ³	60	40	25	60	30	25
Disconnect size	60	40	25	60	30	30

Note: ¹ Each Compressor
² Conditions at 45° suction and 95° ambient
³ Local codes take precedent over recommended fuse size

Performance Data

Table 16: RCS 12F and 15F Electrical Data

Model	RCS					
	12F			15F		
Compressor Motor						
Electrical characteristics	208/230-3-60	460-3-60	575-3-60	208/230-3-60	460-3-60	575-3-60
Operating Current						
Rated load amps (each) ¹	22.4	10.6	7.7	25.0	12.2	9.0
Locked rotor amps (each) ¹	149	75	54	164	100	78
Condenser Fan Motors						
Volt and phase	208/230-1	460-1	575-1	208/230-1	460-1	575-1
Full load amps (each)	2.2	1.3	1.0	2.2	1.3	1.0
System characteristics						
Unit full load amps ²	42.0	20.7	16.7	64.3	33.7	24.5
Minimum circuit ampacity	47.0	24.0	19.0	72.0	38.0	28.0
Maximum fuse size (amps) or HACR circuit breaker ampacity ³	60	30	25	100	50	35
Disconnect size	60	30	30	100	60	60

Note: ¹ Each Compressor
² Conditions at 45° suction and 95° ambient
³ Local codes take precedent over recommended fuse size

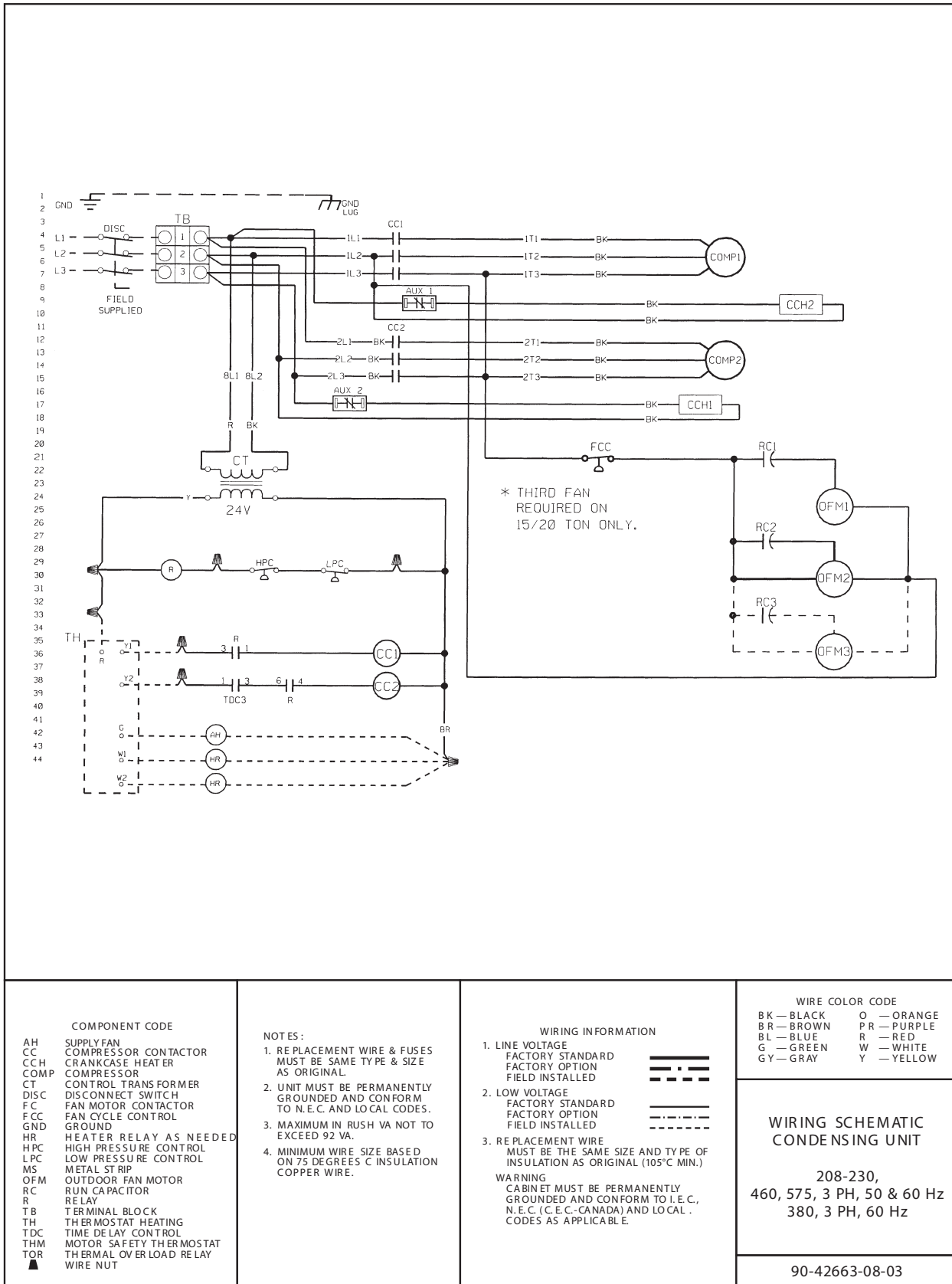
Table 17: RCS 20F Electrical Data

Model	RCS		
	20F		
Compressor Motor			
Electrical characteristics	208/230-3-60	460-3-60	575-3-60
Operating Current			
Rated load amps (each) ¹	33.3	17.9	12.8
Locked rotor amps (each) ¹	239	125	80
Condenser Fan Motors			
Volt and phase	208/230-1	460-1	575-1
Full load amps (each)	2.2	1.3	1.0
System characteristics			
Unit full load amps ²	81.6	37.8	27.1
Minimum circuit ampacity	91.0	42.0	31.0
Maximum fuse size (amps) or HACR circuit breaker ampacity ³	125	50	40
Disconnect size	200	60	60

Note: ¹ Each Compressor
² Conditions at 45° suction and 95° ambient
³ Local codes take precedent over recommended fuse size

Performance Data

Figure 15: RCS 11F – 20F Wiring Diagram



Part 1: General

1.01 Summary:

- A Section includes design, performance criteria, refrigerants, and installation requirements for air cooled split condensing units

1.02 References

- A ARI-365 Commercial and Industrial Unitary Air Cooled Condensing Units
- B ANSI / ASHRAE 15 Safety Standard for Refrigerated Systems

1.03 Submittals

- A Submit Shop drawings and product data in accordance with the specifications.
- B Submittals shall include the following:
 - 1 Dimensioned drawings with required clearances and location of all field connections.
 - 2 Summary of all auxiliary utility requirements, such as electricity, water, compressed air, etc. Summary shall indicate quality and quantity of each required utility.

1.04 Qualifications

- A Qualifications: Equipment manufacturer must specialize in the manufacture of the type of products specified and have five years experience with similar equipment and refrigerant offered.
- B Regulatory Requirements: Comply with the codes and standards specified.
- C Manufacturer's plant must be ISO Registered.

1.05 Delivery and Handling

- A Condensing units shall be delivered to the job site assembled and charged with a holding charge of dry nitrogen.
- B Comply with the manufacturer's instructions for rigging and handling equipment.

1.06 Warranty

- A The refrigeration equipment manufacturer's initial warranty shall be within 12 months from start-up or 18 months from shipment, whichever occurs first. The warranty shall provide for repair or replacement due to material and workmanship that proves defective within the above period, excluding refrigerant.

1.07 Maintenance

- A Include instructions for installation, maintenance and service.

- B Maintenance of the units shall be the responsibility of the owner and performed in accordance with the manufacturer's instructions.

Part 2: Products

2.01 Acceptable Manufacturers

- A Basis of design: McQuay International
- B (Approved Equal)

2.02 Unit Description

- A Provide and install as shown on the plans factory-assembled, air-cooled scroll compressor, R410A condensing units in the size and quantity specified. Each unit shall consist of hermetic scroll compressor air-cooled condenser section.
- B The complete unit shall be UL listed.

2.03 Design Requirements

- A General: Provide a complete condensing unit as specified herein and as shown on the drawings. The unit shall be in accordance with the standards referenced in section 1.02 and any local codes in effect.
- B Performance: Refer to the schedule of performance on the drawings.

2.04 Condensing Section (Scroll)

- A Air Cooled Condenser
 - 1 Exterior panels shall be constructed of pre-painted steel with a 1000-hour ASTM B117 salt spray test.
 - 2 The condensing section shall be open on the sides and bottom to provide access and to allow airflow through the coils. Condenser coils shall be constructed with 3/8" copper tubing mechanically bonded to aluminum fins for maximum heat transfer. Each condenser coil shall be factory leak tested with high-pressure air under water.
 - 3 Condenser fans shall be direct drive, propeller type designed for low tip speed, vertical air discharge, and include service guards. Fan blades shall be constructed of steel and riveted to a steel center hub. Condenser fan motor shall be direct drive, single phase permanently lubricated "PSC" motors with inherent thermal overload.
 - 4 Unit shall have standard pressure controls that cycle the condenser fan motors to maintain condensing pressures for operation down to 0°F ambient.
 - 5 Unit shall be equipped with full-face louvers for hail protection.

Performance Data

B Scroll Compressors

- 1** Unit shall have heavy-duty Copeland scroll compressors.
- 2** Compressor shall be equipped with thermal overload protection.
- 3** Compressors shall be isolated with resilient rubber isolators to decrease noise transmission.
- 4** Compressor circuit shall be complete with low pressure control, liquid line shut off valve, and manual reset high pressure safety switch.

C Refrigerant Circuit: Capped connections shall be external to the unit providing for field connection of refrigerant piping.

D Unit shall have a liquid line and suction line service valve.

2.05 Controls

A Unit shall be equipped with a 24 V terminal strip for field supplied and installed controls.

2.06 Electrical

A All wiring shall comply with UL requirements. The unit shall be provided with a factory wired weatherproof control panel. Unit shall have a single point power terminal block for main power connection. A terminal board shall be provided for low voltage control wiring.

B Unit shall be equipped with low voltage transformers and motor starters.

Part 3: Execution

3.01 Installation

A Install in strict accordance with manufacturer's requirements, shop drawings, and contract documents.

B Adjust and level unit in alignment on supports.

C Coordinate electrical installation with electrical contractor.

D Coordinate controls with control contractor.

3.02 Start-Up

A Install proper charge of refrigerant and oil.

B Provide testing and starting of machine, and instruct the owner in its proper operation and maintenance.

McQuay Training and Development

Now that you have made an investment in modern, efficient McQuay equipment, its care should be a high priority. For training information on all McQuay HVAC products, please visit us at www.mcquay.com and click on training, or call 540-248-9646 and ask for the Training Department.

Warranty

All McQuay equipment is sold pursuant to its standard terms and conditions of sale, including Limited Product Warranty. Consult your local McQuay Representative for warranty details. Refer to Form 933-43285Y. To find your local McQuay Representative, go to www.mcquay.com.

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