

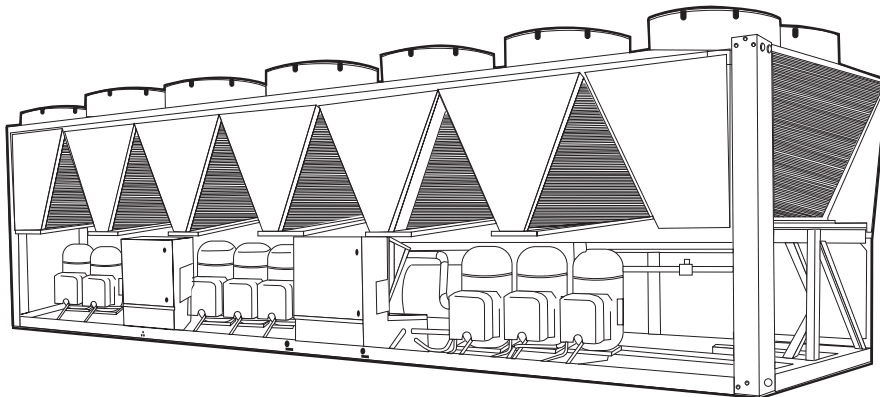
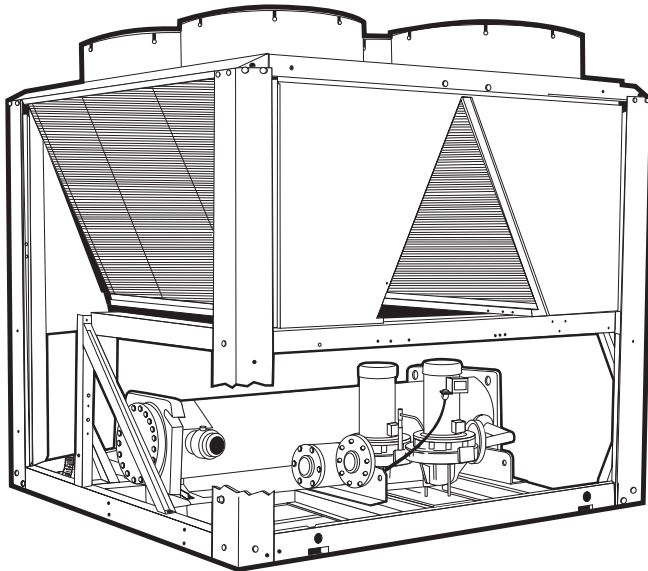


## Product Data

# AQUASNAP® 30RB060-390 Air-Cooled Chillers

60 to 390 Nominal Tons  
(210 to 1370 kW)

# AQUASNAP®



The AquaSnap chiller is an effective all-in-one package that is easy to install and easy to own. AquaSnap chillers cost less to purchase and install, and then operate quietly and efficiently. Value-added features include:

- Rotary scroll compression
- Puron® HFC refrigerant
- Quiet AeroAcoustic™ fan system
- Easy to use *ComfortLink*™ controls
- Integrated hydronic pump package

## Features/Benefits

**Carrier's superior chiller design provides savings at initial purchase, at installation, and for years afterward.**

### Costs less right from the start

Only Carrier's AquaSnap chillers feature a compact, all-in-one package design that installs quickly and easily on the ground or the rooftop. The optional pump and hydronic components are already built in; this costs less than buying and installing the components individually. The chiller's fully integrated and pre-assembled hydronic system installs in minutes. No other chiller in this class installs so easily and inexpensively. The preassembled and integrated hydronic module utilizes top-quality components and pumps to ensure years of reliable operation. The AquaSnap unit's high efficiency keeps costs down.



# Features/Benefits (cont)



## **AquaSnap® chillers make noise in the marketplace, not the workplace**

The AquaSnap chiller's AeroAcoustic fan is almost twice as quiet as the competition's per cfm. Much of the noise reduction is in frequencies where noise is most annoying, which makes AquaSnap chillers ideal for sound-sensitive environments. When cooler temperatures allow part-load operation or during scheduled nighttime operation, the units operate with fewer fans and become even quieter. AquaSnap chillers are quiet during the day and even quieter at night.

## **The savings will continue to mount**

Besides costing less to buy and install, AquaSnap chillers are also more affordable to operate. Carrier's Aqua Series chillers are our most efficient air-cooled models. The AquaSnap chiller provides full-load EER (Energy Efficiency Ratio) up to 9.7 and IPLV (integrated part-load value) up to 14.2. AquaSnap chillers use ultraquiet, high-efficiency rotary scroll compressors, operated in tandem, trios or quads per independent circuit for greater efficiency at partial loads.

## **Electronic expansion valve (EXV)**

allows for precise control through all operating ranges, resulting in higher efficiencies.

## **Proven reliability that's built in**

Thousands of AquaSnap chillers are already in service around the world. This field-proven design is backed by a 12-month warranty that includes the optional hydronic system (U.S. and Canada only). The compressors are maintenance-free and protected by an auto-adaptive control that minimizes compressor wear. Year-round operation is standard, from -20 F (-29 C) (with optional cooler heater and low ambient control) to 125 F (52 C).

**Rotary scroll compressors** provide smooth, quiet and reliable operation.

**Multiple independent circuits** are standard on all AquaSnap chillers for redundancy and greater reliability.

## **All-in-one package**

AquaSnap chillers provide the most comprehensive chilled water circuit available for any air-cooled chiller. Included is a shell-in-tube direct-expansion cooler that may be remote-mounted. The cooler is also completely drainable with factory-installed vents and drains.

## **Electronic thermal-dispersion**

**flow switch** is included with the cooler. The switch is factory installed and tested and contains no moving parts for high reliability.

## **Optional integrated hydronics**

**package** is more than just a pump, it is an entire chilled water system, including:

- Single/dual pumps up to 15 hp and 140 ft head
- Regular strainer
- Cleanout strainer
- Flow regulator
- Freeze protection to -20 F (with freeze protection option)
- Heaters
- Required piping
- Pressure/temperature taps
- Isolation check valves for dual pump systems

The factory-installed and tested hydronics package provides faster, simpler and less expensive installation.

## **Environmentally sound**

Carrier's unique Puron® refrigerant enables you to make a responsible decision in the protection of the earth's ozone layer. Puron refrigerant is an HFC refrigerant that does not contain chlorine that is damaging to the ozone layer. Puron refrigerant is unaffected by the Montreal Protocol. Puron

refrigerant is a safe, non-toxic, efficient and environmentally sound refrigerant for the future.

## **Structurally sound**

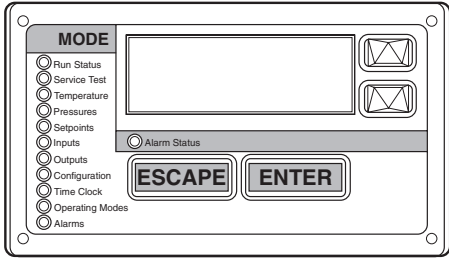
The base rail is industrial-quality 1/4-in. cold-rolled steel for maximum structural integrity. The zinc-dipped and painted galvanized frame (with Serma-Guard™ coated screws) provides the best protection on the market for corrosion resistance. With such a structurally sound base, no perimeter base rail is needed.

## **ComfortLink™ controls speak your language**

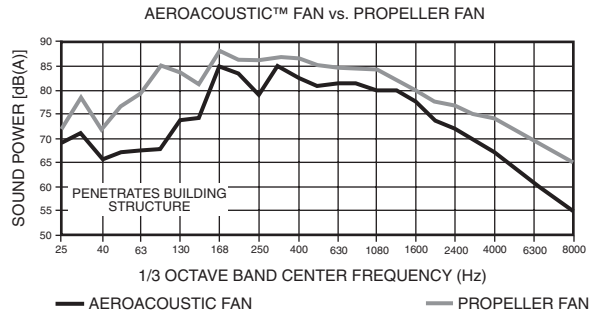
The *ComfortLink* controls communicate in plain English, making it as easy as possible to monitor and control each AquaSnap chiller while accurately maintaining fluid temperatures. The large Scrolling Marquee display acts as a window into the unit's operation, providing easy-to-read information about chiller performance and over 15 diagnostic functions. Carrier 30 Series chillers' *ComfortLink* controls provide features such as chilled water temperature reset, demand limiting, compressor wear minimization and protection, temperature and pressure displays and diagnostic functions. These controls result in higher chiller reliability, simplified training and more productive service calls with correspondingly lower operational and maintenance costs.

Carrier's exclusive handheld Navigator™ display provides convenience and powerful information in the palm of your hand. The Navigator display helps technicians to quickly diagnose problems and even prevent them from occurring.

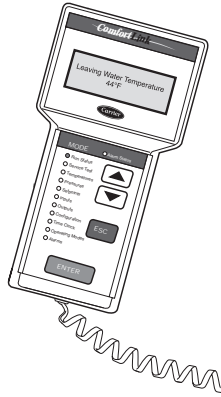
All AquaSnap units are ready to be used with the Carrier Comfort Network® (CCN) system.



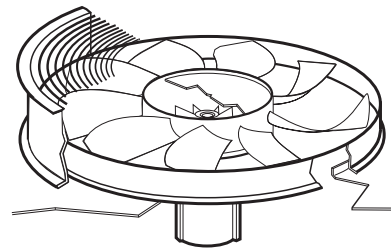
**SCROLLING MARQUEE DISPLAY**



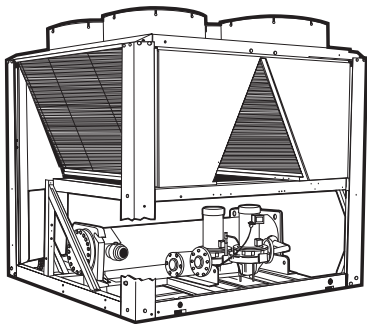
**AEROACOUSTIC FAN VS PROPELLER FAN**



**NAVIGATOR™ DISPLAY**



**LOW-NOISE AEROACOUSTIC FAN**



**OPTIONAL HYDRONIC PACKAGE**



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# Model number nomenclature



**30RB** – Air-Cooled AquaSnap Chiller

**Design Series**

**Nominal Sizes**

060	110	170	275
070	120	190	300
080	130	210	315*
090	150	225	330*
100	160	250	345*
			360*
			390*

**Voltage**

1 – 575-3-60  
2 – 380-3-60  
5 – 208/230-3-60  
6 – 460-3-60

**Condenser Coil and Sound Options**

- Aluminum Fin/Copper Tube (Standard)
- 0 – Copper Fin/Copper Tube
- 1 – Aluminum Pre-coated Fin/Copper Tube
- 2 – Aluminum E-coat Fin/Copper Tube
- 3 – Copper E-coat Fin/Copper Tube
- 6 – Aluminum Fin/Copper Tube, Low Sound Enclosure
- 7 – Copper Fin/Copper Tube, Low Sound Enclosure
- 8 – Aluminum Pre-coated Fin/Copper Tube, Low Sound Enclosure
- 9 – Aluminum E-coat Fin/Copper Tube, Low Sound Enclosure
- B – Copper E-coat Fin/Copper Tube, Low Sound Enclosure

**Hydronics Option**

- No Pump Installed
- 0 – Single Pump, 3 HP
- 1 – Single Pump, 5 HP
- 2 – Single Pump, 7.5 HP
- 3 – Single Pump, 10 HP
- 4 – Single Pump, 15 HP
- 6 – Dual Pump, 3 HP
- 7 – Dual Pump, 5 HP
- 8 – Dual Pump, 7.5 HP, Low Head
- 9 – Dual Pump, 7.5 HP, High Head
- B – Dual Pump, 10 HP
- C – Dual Pump, 15 HP
- Z – Special order designation

**LEGEND**

**EMM** — Energy Management Module  
**GFI-CO** — Ground Fault Interrupting Convenience Outlet  
**LON** — Local Operating Network

\*Refer to unit sizes and modular combinations below.  
NOTE: A "Z" in position 11 indicates a special order machine. Digits following do not correspond to tables.

**Quality Assurance**  
Certified to ISO 9001:2000

**Security/Packaging Option**

- L – Coil Face Shipping Protection
- 0 – Skid, Coil Face Shipping Protection
- 1 – Skid, Top Crate and Bag
- 3 – Coil Face Shipping Protection, Condenser Coil Trim Panels
- 4 – Skid, Condenser Coil Trim Panels
- 5 – Skid, Top Crate and Bag, Condenser Coil Trim Panels
- 7 – Coil Face Shipping Protection, Condenser Coil Trim Panels, Upper and Lower Grilles
- 8 – Skid, Condenser Coil Trim Panels, Upper and Lower Grilles
- 9 – Skid, Top Crate and Bag, Condenser Coil Trim Panels, Upper and Lower Grilles
- C – Coil Face Shipping Protection, Condenser Coil Trim Panels, Upper and Lower Grilles, Hail Guards
- D – Skid, Condenser Coil Trim Panels, Upper Grilles and Lower Grilles, Hail Guards
- F – Skid, Top Crate and Bag, Condenser Coil Trim Panels, Upper and Lower Grilles, Hail Guards

**Controls/Communication Option**

- None
- 0 – EMM
- 1 – Remote Service Port, GFI-CO
- 2 – EMM, Remote Service Port, GFI-CO
- 7 – BACnet™ Translator
- 8 – BACnet Translator, EMM
- 9 – BACnet Translator, Remote Service Port, GFI-CO
- B – BACnet Translator, EMM, Remote Service Port, GFI-CO
- H – LON Translator
- J – LON Translator, EMM
- K – LON Translator, Remote Service Port, GFI-CO
- L – LON Translator, EMM, Remote Service Port, GFI-CO

**Electrical Option**

- Single Power Connection, Terminal Block
- 3 – Dual Power Connection, Terminal Block
- 7 – Single Power Connection, Non-Fused Disconnect
- C – Dual Power Connection, Non-Fused Disconnect

**Refrigeration Circuit Option**

- No Suction Line Insulation
- 0 – Suction Insulation
- 1 – Suction Service Valves
- 2 – Low Ambient Head Pressure Control Operation
- 3 – Suction Insulation, Suction Service Valves
- 4 – Suction Insulation, Low Ambient Head Pressure Control Operation
- 5 – Suction Service Valves, Low Ambient Head Pressure Control Operation
- 6 – Suction Insulation, Service Valves, Low Ambient Head Pressure Control Operation
- 7 – Minimum Load Control
- 8 – Suction Insulation, Minimum Load Control Operation
- 9 – Suction Service Valves, Minimum Load Control Operation
- B – Low Ambient Operation, Minimum Load Control Operation
- C – Suction Insulation, Suction Service Valves, Minimum Load Control Operation
- D – Suction Insulation, Low Ambient Head Pressure Control Operation, Minimum Load Control Operation
- F – Suction Service Valves, Low Ambient Head Pressure Control Operation, Minimum Load Control Operation
- G – Suction Insulation, Suction Service Valves, Low Ambient Head Pressure Control Operation, Minimum Load Control Operation

**Cooler Option**

- Integral Cooler
- 0 – Integral Cooler, Cooler Heater
- 1 – Remote Cooler
- 9 – Integral Cooler, Brine
- B – Integral Cooler, Cooler Heater, Brine
- C – Remote Cooler, Brine
- M – Integral Cooler, Non-Removable Core Filter Drier
- N – Integral Cooler, Cooler Heater, Non-Removable Core Filter Drier
- P – Remote Cooler, Non-Removable Core Filter Drier

## UNIT SIZES AND MODULAR COMBINATIONS

UNIT 30RB	NOMINAL TONS	NOMINAL kW	MODULE A	MODULE B
060	60	210	—	—
070	70	245	—	—
080	80	280	—	—
090	90	315	—	—
100	100	350	—	—
110	110	385	—	—
120	120	421	—	—
130	130	456	—	—
150	150	526	—	—
160	160	562	—	—
170	170	597	—	—

UNIT 30RB	NOMINAL TONS	NOMINAL kW	MODULE A	MODULE B
190	190	667	—	—
210	210	737	—	—
225	225	791	—	—
250	250	879	—	—
275	275	967	—	—
300	300	1055	—	—
315	315	1107	160	160
330	330	1160	170	160
345	345	1213	170	170
360	360	1266	190	170
390	390	1370	190	190

# ARI\* capacity ratings



30RB UNIT SIZE	CAPACITY		COMP	FAN	TOTAL POWER	FULL LOAD		IPLV		COOLER FLOW RATE		COOLER PD	
	Tons	kW	kW	kW	kW	EER	COP	EER	COP	GPM	L/s	ft wg	kPa
060	57.1	200.8	60.1	10.3	70.4	9.7	2.9	13.2	3.9	136.5	8.6	8.9	26.6
070	66.5	233.9	73.1	10.3	83.4	9.6	2.8	13.4	3.9	159.0	10.0	11.7	35.0
080	76.0	267.3	85.0	10.3	95.3	9.6	2.8	14.2	4.2	181.7	11.5	7.0	20.9
090	86.4	303.8	91.1	15.5	106.6	9.7	2.9	13.5	4.0	206.7	13.0	8.9	26.6
100	95.7	336.5	104.0	15.5	119.5	9.6	2.8	13.6	4.0	229.0	14.4	10.7	32.0
110	105.5	371.0	116.6	15.5	132.1	9.6	2.8	13.7	4.0	252.1	15.9	8.8	26.3
120	118.4	416.4	129.5	18.1	147.6	9.6	2.8	13.7	4.0	283.2	17.9	10.9	32.6
130	127.3	447.7	137.5	20.6	158.1	9.7	2.8	13.6	4.0	304.4	19.2	12.5	37.4
150	144.4	507.8	158.4	20.6	179.0	9.7	2.8	13.8	4.0	345.3	21.8	7.5	22.4
160	153.0	538.0	162.8	25.8	188.6	9.7	2.9	13.4	3.9	366.0	23.1	8.4	25.1
170	166.5	585.5	182.4	25.8	208.2	9.6	2.8	13.5	4.0	398.1	25.1	9.8	29.3
190	188.5	662.9	205.6	31.0	236.6	9.6	2.8	13.4	3.9	450.9	28.4	12.4	37.1
210	201.9	710.0	217.6	31.0	248.6	9.7	2.9	13.7	4.0	482.7	30.5	9.9	29.6
225	214.2	753.3	236.8	31.0	267.8	9.6	2.8	13.8	4.0	512.3	32.3	11.2	33.5
250	237.8	836.2	261.5	36.1	297.6	9.6	2.8	13.6	4.0	568.8	35.9	13.6	40.7
275	260.2	915.0	284.0	41.3	325.3	9.6	2.8	13.7	4.0	622.4	39.3	16.2	48.4
300	282.6	993.8	308.1	46.5	354.6	9.6	2.8	13.5	4.0	675.6	42.6	19.0	56.8
315	306.0	1076.1	325.7	51.6	377.3	9.7	2.9	13.4	3.9	731.9	46.2	8.4	25.1
330	319.5	1123.6	345.2	51.6	396.8	9.7	2.8	13.5	4.0	764.1	48.2	9.8	29.3
345	332.9	1170.7	364.8	51.6	416.4	9.6	2.8	13.5	4.0	796.3	50.2	9.8	29.3
360	355.0	1248.4	388.0	56.8	444.8	9.6	2.8	13.5	4.0	849.0	53.6	12.4	37.1
390	377.0	1325.8	411.1	62.0	473.1	9.6	2.8	13.4	3.9	901.7	56.9	12.4	37.1

## LEGEND

- COP** — Coefficient of Performance
- EER** — Energy Efficiency Ratios
- IPLV** — Integrated Part Load Value
- PD** — Pressure Drop

\*Air Conditioning and Refrigeration Institute.

NOTE: Based on ARI standard rating conditions.



# Physical data



## 30RB060-300 — ENGLISH

UNIT 30RB	060	070	080	090	100	110	120	130	150
<b>OPERATING WEIGHT (lb)*</b>									
AI-Cu Condenser Coil	4944	5150	5523	6855	7078	7442	8613	8968	10,419
Cu-Cu Condenser Coil	5426	5632	6005	7579	7802	8166	9457	9933	11,384
<b>REFRIGERANT TYPE</b>	R-410A, EXV Controlled System								
<b>Refrigerant Charge (lb)</b>									
Ckt A/Ckt B/Ckt C	89.5/40.5/—	112/40.5/—	68.5/68.5/—	96/76/—	96/96/—	96/106/—	96/133/—	133/106/—	133/133/—
<b>COMPRESSORS</b>	Scroll, Hermetic								
<b>Quantity</b>	3	3	4	4	4	5	5	6	6
<b>Speed (rpm)</b>					3500				
(Qty) Compressor Model Number Ckt A	(2) SH240	(2) SH300	(2) SH240	(2) SH300	(2) SH300	(2) SH300	(2) SH300	(3) SH300	(3) SH300
(Qty) Compressor Model Number Ckt B	(1) SH240	(1) SH240	(2) SH240	(2) SH240	(2) SH300	(3) SH240	(3) SH300	(3) SH240	(3) SH300
(Qty) Compressor Model Number Ckt C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Oil Charge (Pt, Ckt A/Ckt B/Ckt C)</b>	26.2/13.1/—	26.2/13.1/—	26.2/26.2/—	26.2/26.2/—	26.2/26.2/—	26.2/39.4/—	26.2/39.4/—	39.4/39.4/—	39.4/39.4/—
<b>No. Capacity Steps</b>									
Standard	3	3	4	4	4	5	5	6	6
Optional (Maximum)	4	4	5	5	5	6	6	7	7
<b>Minimum Capacity Step (%)</b>									
Standard	33	29	25	22	25	18	20	15	17
Optional	22	19	16	14	18	12	14	10	12
<b>Capacity (%)</b>									
Ckt A	67	71	50	56	50	45	40	56	50
Ckt B	33	29	50	44	50	55	60	44	50
Ckt C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>COOLER</b>	Direct Expansion, Shell and Tube Type								
<b>Weight (empty, lb)</b>	715	715	856	856	856	970	970	970	1518
<b>Net Fluid Volume (gal)</b>	28.2	28.2	31.3	31.3	31.3	45.8	45.8	45.8	73.5
<b>Maximum Refrigerant Pressure (psig)</b>	445	445	445	445	445	445	445	445	445
<b>Maximum Fluid Side Pressure</b>									
Without Pumps (psig)	300	300	300	300	300	300	300	300	300
<b>Maximum Fluid Side Pressure</b>									
With Pumps (psig)	150	150	150	150	150	150	150	150	150
<b>FLUID CONNECTIONS (in.)</b>									
Inlet and Outlet, Victaulic	4	4	4	4	4	6	6	6	6
Drain (NPT)	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
<b>CONDENSER FANS</b>	Shrouded Axial Type, Vertical Discharge								
<b>Standard Low Noise Type</b>									
Fan Speed (rpm) Standard	1140	1140	1140	1140	1140	1140	1140	1140	1140
No. Blades...Diameter (in.)	9...30	9...30	9...30	9...30	9...30	9...30	9...30	9...30	9...30
No. Fans (Ckt A/Ckt B/Ckt C)	3/1/—	3/1/—	2/2/—	3/3/—	3/3/—	3/3/—	3/4/—	4/4/—	4/4/—
Total Airflow (cfm)	49,600	49,600	49,600	74,400	74,400	74,400	86,800	99,200	99,200
<b>CONDENSER COILS</b>	3/4-in. OD, Plate Fin, Enhanced Copper Tubing								
<b>No. Coils (Ckt A/Ckt B/Ckt C)</b>	3/1/—	3/1/—	2/2/—	3/3/—	3/3/—	3/3/—	3/4/—	4/4/—	4/4/—
<b>Total Face Area (sq ft)</b>	94	94	94	141	141	141	164	188	188
<b>No. Rows (Ckt A or B or C)</b>	3	3	3	3	3	3	3	3	3
<b>Max Working Refrigerant Pressure (psig)</b>	656	656	656	656	656	656	656	656	656
<b>HYDRONIC MODULE (Optional)</b>	Pump(s) with pressure/temperature taps and combination valve.								
<b>Pump</b>	Single or Dual, 1800 or 3600 rpm								
<b>CHASSIS DIMENSIONS (ft-in.)</b>									
Length	7-11			11-10			15-9		
Width	7-4 <sup>25</sup> / <sub>32</sub>								
Height	7-6 <sup>7</sup> / <sub>16</sub>								

### LEGEND

- AI-Cu — Aluminum Fin/Copper Tube Condenser Coil
- Cu-Cu — Copper Fin/Copper Tube Condenser Coil
- EXV — Electronic Expansion Valve
- N/A — Not Applicable

\*Operating weight includes 2 pumps on Models 30RB060-190. No pumps are available on models larger than 30RB190.





### 30RB060-300 — ENGLISH (cont)

UNIT 30RB	160	170	190	210	225	250	275	300
<b>OPERATING WEIGHT (lb)*</b>								
Al-Cu Condenser Coil	11,511	11,846	13,258	13,734	14,067	15,468	16,915	18,306
Cu-Cu Condenser Coil	12,717	13,052	14,705	15,181	15,514	17,157	18,845	20,477
<b>REFRIGERANT TYPE</b> R-410A, EXV Controlled System								
<b>Refrigerant Charge (lb)</b>								
Ckt A/Ckt B/Ckt C	162/106/—	162/133/—	162/162/—	133/106/133	133/133/133	133/133/162	162/162/133	162/162/162
<b>COMPRESSORS</b> Scroll, Hermetic								
<b>Quantity</b>	7	7	8	9	9	10	11	12
<b>Speed (rpm)</b>					3500			
<b>(Qty) Compressor Model Number Ckt A</b>	(4) SH300	(4) SH300	(4) SH300	(3) SH300	(3) SH300	(3) SH300	(4) SH300	(4) SH300
<b>(Qty) Compressor Model Number Ckt B</b>	(3) SH240	(3) SH300	(4) SH300	(3) SH240	(3) SH300	(3) SH300	(4) SH300	(4) SH300
<b>(Qty) Compressor Model Number Ckt C</b>	N/A	N/A	N/A	(3) SH300	(3) SH300	(4) SH300	(3) SH300	(4) SH300
<b>Oil Charge (Pt, Ckt A/Ckt B/Ckt C)</b>	52.5/39.4/—	52.5/39.4/—	52.5/52.5/—	39.4/39.4/39.4	39.4/39.4/39.4	39.4/39.4/52.5	52.5/52.5/39.4	52.5/52.5/52.5
<b>No. Capacity Steps</b>								
<b>Standard</b>	7	7	8	9	9	10	11	12
<b>Optional (Maximum)</b>	8	8	9	10	10	11	12	13
<b>Minimum Capacity Step (%)</b>								
<b>Standard</b>	13	14	13	10	11	10	9	8
<b>Optional</b>	8	10	9	6	8	7	7	6
<b>Capacity (%)</b>								
<b>Ckt A</b>	62	57	50	36	33	30	36	33
<b>Ckt B</b>	38	43	50	28	33	30	36	33
<b>Ckt C</b>	N/A	N/A	N/A	36	33	40	28	33
<b>COOLER</b> Direct Expansion, Shell and Tube Type								
<b>Weight (empty, lb)</b>	1518	1518	1518	2382	2382	2382	2382	2382
<b>Net Fluid Volume (gal)</b>	73.5	73.5	73.5	86.6	86.6	86.6	86.6	86.6
<b>Maximum Refrigerant Pressure (psig)</b>	445	445	445	445	445	445	445	445
<b>Maximum Fluid Side Pressure</b>								
<b>Without Pumps (psig)</b>	300	300	300	300	300	300	300	300
<b>Maximum Fluid Side Pressure With Pumps (psig)</b>	150	150	150	150	150	150	150	150
<b>FLUID CONNECTIONS (in.)</b>								
<b>Inlet and Outlet, Victaulic</b>	6	6	6	6	6	6	6	6
<b>Drain (NPT)</b>	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
<b>CONDENSER FANS</b> Shrouded Axial Type, Vertical Discharge								
<b>Standard Low Noise Type</b>								
<b>Fan Speed (rpm) Standard</b>	1140	1140	1140	1140	1140	1140	1140	1140
<b>No. Blades...Diameter (in.)</b>	9...30	9...30	9...30	9...30	9...30	9...30	9...30	9...30
<b>No. Fans (Ckt A/Ckt B/Ckt C)</b>	6/4/—	6/4/—	6/6/—	4/4/4	4/4/4	4/4/6	6/6/4	6/6/6
<b>Total Airflow (cfm)</b>	124,000	124,000	148,800	148,800	148,800	173,600	198,400	223,200
<b>CONDENSER COILS</b> 3/4-in. OD, Plate Fin, Enhanced Copper Tubing								
<b>No. Coils (Ckt A/Ckt B/Ckt C)</b>	6/4/—	6/4/—	6/6/—	4/4/4	4/4/4	4/4/6	6/6/4	6/6/6
<b>Total Face Area (sq ft)</b>	235	235	282	282	282	328	375	422
<b>No. Rows (Ckt A or B or C)</b>	3	3	3	3	3	3	3	3
<b>Max Working Refrigerant Pressure (psig)</b>	656	656	656	656	656	656	656	656
<b>HYDRONIC MODULE (Optional)</b>								
<b>Pump</b>	Pump(s) with pressure/temperature taps and combination valve. Single or Dual, 1800 or 3600 rpm				Not available			
<b>CHASSIS DIMENSIONS (ft-in.)</b>								
<b>Length</b>	19-8		23-7			27-6	31-5	35-4
<b>Width</b>								
<b>Height</b>	7-4 <sup>25</sup> / <sub>32</sub> 7-6 <sup>7</sup> / <sub>16</sub>							

**LEGEND**

- Al-Cu** — Aluminum Fin/Copper Tube Condenser Coil
- Cu-Cu** — Copper Fin/Copper Tube Condenser Coil
- EXV** — Electronic Expansion Valve
- N/A** — Not Applicable

\*Operating weight includes 2 pumps on Models 30RB060-190. No pumps are available on models larger than 30RB190.

# Physical data (cont)



## 30RB060-300 — SI

UNIT 30RB	060	070	080	090	100	110	120	130	150
<b>OPERATING WEIGHT (kg)*</b>									
Al-Cu Condenser Coil	2242	2336	2505	3109	3210	3375	3906	4067	4725
Cu-Cu Condenser Coil	2461	2554	2723	3437	3538	3703	4289	4505	5163
<b>REFRIGERANT TYPE</b>	R-410A, EXV Controlled System								
Refrigerant Charge (kg)									
Ckt A/Ckt B/Ckt C	40.6/18.4/—	50.8/18.4/—	31.1/31.1/—	43.5/34.5/—	43.5/43.5/—	43.5/48.1/—	43.5/60.3/—	60.3/48.1/—	60.3/60.3/—
<b>COMPRESSORS</b>	Scroll, Hermetic								
Quantity	3	3	4	4	4	5	5	6	6
Speed (r/s)					58.3				
(Qty) Compressor Model Number Ckt A	(2) SH240	(2) SH300	(2) SH240	(2) SH300	(2) SH300	(2) SH300	(2) SH300	(3) SH300	(3) SH300
(Qty) Compressor Model Number Ckt B	(1) SH240	(1) SH240	(2) SH240	(2) SH240	(2) SH300	(3) SH240	(3) SH300	(3) SH240	(3) SH300
(Qty) Compressor Model Number Ckt C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Oil Charge (L, Ckt A/Ckt B/Ckt C)	12.4/6.2/—	12.4/6.2/—	12.4/12.4/—	12.4/12.4/—	12.4/12.4/—	12.4/18.6/—	12.4/18.6/—	18.6/18.6/—	18.6/18.6/—
No. Capacity Steps									
Standard	3	3	4	4	4	5	5	6	6
Optional (Maximum)	4	4	5	5	5	6	6	7	7
Minimum Capacity Step (%)									
Standard	33	29	25	22	25	18	20	15	17
Optional	22	19	16	14	18	12	14	10	12
Capacity (%)									
Ckt A	67	71	50	56	50	45	40	56	50
Ckt B	33	29	50	44	50	55	60	44	50
Ckt C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>COOLER</b>	Direct Expansion, Shell and Tube Type								
Weight (empty, kg)	324	324	388	388	388	440	440	440	689
Net Fluid Volume (L)	106	106	118	118	118	173	173	173	278
Maximum Refrigerant Pressure (kPa)	3068	3068	3068	3068	3068	3068	3068	3068	3068
Maximum Fluid Side Pressure									
Without Pumps (kPa)	2068	2068	2068	2068	2068	2068	2068	2068	2068
Maximum Fluid Side Pressure									
With Pumps (kPa)	1034	1034	1034	1034	1034	1034	1034	1034	1034
<b>FLUID CONNECTIONS (in.)</b>									
Inlet and Outlet, Victaulic	4	4	4	4	4	6	6	6	6
Drain (NPT)	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
<b>CONDENSER FANS</b>	Shrouded Axial Type, Vertical Discharge								
Standard Low Noise Type									
Fan Speed (r/s) Standard	19	19	19	19	19	19	19	19	19
No. Blades...Diameter (mm)	9...762	9...762	9...762	9...762	9...762	9...762	9...762	9...762	9...762
No. Fans (Ckt A/Ckt B/Ckt C)	3/1/—	3/1/—	2/2/—	3/3/—	3/3/—	3/3/—	3/4/—	4/4/—	4/4/—
Total Airflow (L/s)	23 409	23 409	23 409	35 113	35 113	35 113	40 965	46 817	46 817
<b>CONDENSER COILS</b>	3/4-in. OD, Plate Fin, Enhanced Copper Tubing								
No. Coils (Ckt A/Ckt B/Ckt C)	3/1/—	3/1/—	2/2/—	3/3/—	3/3/—	3/3/—	3/4/—	4/4/—	4/4/—
Total Face Area (sq m)	8.73	8.73	8.73	13.1	13.1	13.1	15.24	17.47	17.47
No. Rows (Ckt A or B or C)	3	3	3	3	3	3	3	3	3
Max Working Refrigeration									
Pressure (kPa)	4522	4522	4522	4522	4522	4522	4522	4522	4522
<b>HYDRONIC MODULE (Optional)</b>	Pump(s) with pressure/temperature taps and combination valve.								
Pump	Single or Dual, 29.2 or 58.3 r/s								
<b>CHASSIS DIMENSIONS</b>									
Length (mm)	2412			3606			4800		
Width (mm)				2255					
Height (mm)				2296.9					

### LEGEND

- Al-Cu — Aluminum Fin/Copper Tube Condenser Coil
- Cu-Cu — Copper Fin/Copper Tube Condenser Coil
- EXV — Electronic Expansion Valve
- N/A — Not Applicable

\*Operating weight includes 2 pumps on Models 30RB060-190. No pumps are available on models larger than 30RB190.





### 30RB060-300 — SI (cont)

UNIT 30RB	160	170	190	210	225	250	275	300
<b>OPERATING WEIGHT (kg)*</b>								
Al-Cu Condenser Coil	5220	5372	6013	6228	6379	7015	7671	8302
Cu-Cu Condenser Coil	5767	5919	6669	6885	7036	7781	8546	9286
<b>REFRIGERANT TYPE</b>	R-410A, EXV Controlled System							
Refrigerant Charge (kg)								
Ckt A/Ckt B/Ckt C	73.5/48.1/—	73.5/60.3/—	73.5/73.5/—	60.3/48.1/60.3	60.3/60.3/60.3	60.3/60.3/73.5	73.5/73.5/60.3	73.5/73.5/73.5
<b>COMPRESSORS</b>	Scroll, Hermetic							
Quantity	7	7	8	9	9	10	11	12
Speed (r/s)					58.3			
(Qty) Compressor Model Number Ckt A	(4) SH300	(4) SH300	(4) SH300	(3) SH300	(3) SH300	(3) SH300	(4) SH300	(4) SH300
(Qty) Compressor Model Number Ckt B	(3) SH240	(3) SH300	(4) SH300	(3) SH240	(3) SH300	(3) SH300	(4) SH300	(4) SH300
(Qty) Compressor Model Number Ckt C	N/A	N/A	N/A	(3) 25	(3) 25	(4) 25	(3) 25	(4) 25
Oil Charge (L, Ckt A/Ckt B/Ckt C)	24.8/18.6/—	24.8/18.6/—	24.8/24.8/—	18.6/18.6/18.6	18.6/18.6/18.6	18.6/18.6/24.8	24.8/24.8/18.6	24.8/24.8/24.8
No. Capacity Steps								
Standard	7	7	8	9	9	10	11	12
Optional (Maximum)	8	8	9	10	10	11	12	13
Minimum Capacity Step (%)								
Standard	13	14	13	10	11	10	9	8
Optional	8	10	9	6	8	7	7	6
Capacity (%)								
Ckt A	62	57	50	38	33	30	36	33
Ckt B	38	43	50	28	33	30	36	33
Ckt C	N/A	N/A	N/A	36	33	40	28	33
<b>COOLER</b>	Direct Expansion, Shell and Tube Type							
Weight (empty, kg)	689	689	689	1080	1080	1080	1080	1080
Net Fluid Volume (L)	278	278	278	327	327	327	327	327
Maximum Refrigerant Pressure (psig)	3068	3068	3068	3068	3068	3068	3068	3068
Maximum Fluid Side Pressure								
Without Pumps (psig)	2068	2068	2068	2068	2068	2068	2068	2068
Maximum Fluid Side Pressure								
With Pumps (psig)	1034	1034	1034	1034	1034	1034	1034	1034
<b>FLUID CONNECTIONS (in.)</b>								
Inlet and Outlet, Victaulic	6	6	6	6	6	6	6	6
Drain (NPT)	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
<b>CONDENSER FANS</b>	Shrouded Axial Type, Vertical Discharge							
Standard Low Noise Type								
Fan Speed (r/s) Standard	19	19	19	19	19	19	19	19
No. Blades...Diameter (mm)	9...762	9...762	9...762	9...762	9...762	9...762	9...762	9...762
No. Fans (Ckt A/Ckt B/Ckt C)	6/4/—	6/4/—	6/6/—	4/4/4	4/4/4	4/4/6	6/6/4	6/6/6
Total Airflow (L/s)	58 521	58 521	70 226	70 226	70 226	81 930	93 634	105 339
<b>CONDENSER COILS</b>	3/4-in. OD, Plate Fin, Enhanced Copper Tubing							
No. Coils (Ckt A/Ckt B/Ckt C)	6/4/—	6/4/—	6/6/—	4/4/4	4/4/4	4/4/6	6/6/4	6/6/6
Total Face Area (sq m)	21.83	21.83	26.2	26.2	26.2	30.47	34.84	39.21
No. Rows (Ckt A or B or C)	3	3	3	3	3	3	3	3
Max Working Refrigeration Pressure (kPa)	4522	4522	4522	4522	4522	4522	4522	4522
<b>HYDRONIC MODULE (Optional)</b>	Pump(s) with pressure/temperature taps and combination valve.				Not available			
Pump	Single or Dual, 29.2 or 58.3 r/s				Not available			
<b>CHASSIS DIMENSIONS</b>								
Length (mm)	5994	5994	7188	7188	7188	8382	9576	10 770
Width (mm)					2255			
Height (mm)					2296.9			

#### LEGEND

- Al-Cu — Aluminum Fin/Copper Tube Condenser Coil
- Cu-Cu — Copper Fin/Copper Tube Condenser Coil
- EXV — Electronic Expansion Valve
- N/A — Not Applicable

\*Operating weight includes 2 pumps on Models 30RB060-190. No pumps are available on models larger than 30RB190.

# Physical data (cont)



## 30RB315-390 — ENGLISH

UNIT 30RB	315	330	345	360	390
<b>OPERATING WEIGHT (Module A/Module B, lb)*</b>					
Al-Cu Condenser Coil	10,266/10,266	10,601/10,266	10,601/10,601	12,013/10,601	12,013/12,013
Cu-Cu Condenser Coil	11,472/11,472	11,807/11,472	11,807/11,807	13,460/11,807	13,460/13,460
<b>REFRIGERANT TYPE</b>	R-410A, EXV Controlled System				
Circuits Qty	4	4	4	4	4
Refrigerant Charge					
Module A Ckt A/Ckt B (lb)	162/106	162/133	162/133	162/162	162/162
Module B Ckt A/Ckt B (lb)	162/106	162/106	162/133	162/133	162/162
<b>COMPRESSORS</b>	Scroll, Hermetic				
Total Quantity	14	14	14	15	16
Speed (rpm)	3500				
Module A, (Qty) Compressor Model Number Ckt A	(4) SH300	(4) SH300	(4) SH300	(4) SH300	(4) SH300
Module A, (Qty) Compressor Model Number Ckt B	(3) SH240	(3) SH300	(3) SH300	(4) SH300	(4) SH300
Module B, (Qty) Compressor Model Number Ckt A	(4) SH300	(4) SH300	(4) SH300	(4) SH300	(4) SH300
Module B, (Qty) Compressor Model Number Ckt B	(3) SH240	(3) SH240	(3) SH300	(3) SH300	(4) SH300
Module A Oil Charge (Pt, Ckt A/Ckt B)	52.5/39.4	52.5/39.4	52.5/39.4	52.5/52.5	52.5/52.5
Module B Oil Charge (Pt, Ckt A/Ckt B)	52.5/39.4	52.5/39.4	52.5/39.4	52.5/39.4	52.5/52.5
No. Capacity Steps					
Standard	14	14	14	15	16
Optional (Maximum)	16	16	16	17	18
Minimum Capacity Step (%)					
Standard	6	6	7	7	6
Optional	5	4	6	5	5
Capacity (%)					
Module A, Ckt A	31	30	29	27	25
Module A, Ckt B	19	22	21	27	25
Module B, Ckt A	31	30	29	27	25
Module B, Ckt B	19	18	21	20	25
<b>COOLER</b>	Direct Expansion, Shell and Tube Type				
Module A Weight (empty, lb)	1518	1518	1518	1518	1518
Module B Weight (empty, lb)	1518	1518	1518	1518	1518
Net Fluid Volume (gal) Module A/Module B	73.5/73.5	73.5/73.5	73.5/73.5	73.5/73.5	73.5/73.5
Maximum Refrigerant Pressure (psig)	445	445	445	445	445
Maximum Fluid Side Pressure (psig)	300	300	300	300	300
<b>FLUID CONNECTIONS (in.)</b>					
Inlet and Outlet, Victaulic	6	6	6	6	6
Drain (NPT)	3/4	3/4	3/4	3/4	3/4
<b>CONDENSER FANS</b>	Shrouded Axial Type, Vertical Discharge				
Standard Low Noise Type					
Fan Speed (rpm) Standard	1140	1140	1140	1140	1140
Module A No. Blades...Diameter (in.) Ckt A/Ckt B	9...30/9...30	9...30/9...30	9...30/9...30	9...30/9...30	9...30/9...30
Module B No. Blades...Diameter (in.) Ckt A/Ckt B	9...30/9...30	9...30/9...30	9...30/9...30	9...30/9...30	9...30/9...30
Total No. Fans	20	20	20	22	24
Module A No. Fans (Ckt A/Ckt B)	6/4	6/4	6/4	6/6	6/6
Module B No. Fans (Ckt A/Ckt B)	6/4	6/4	6/4	6/4	6/6
Total Airflow (cfm)	248,000	248,000	248,000	272,800	297,600
<b>CONDENSER COILS</b>	3/4-in. OD, Plate Fin, Enhanced Copper Tubing				
Module A No. Coils (Ckt A/Ckt B)	6/4	6/4	6/4	6/6	6/6
Module B No. Coils (Ckt A/Ckt B)	6/4	6/4	6/4	6/4	6/6
Total Face Area (sq ft)	470	470	470	517	564
No. Rows (Ckt A or B, any module)	3	3	3	3	3
Max Working Refrigerant Pressure (psig)	656	656	656	656	656

### LEGEND

- Al-Cu — Aluminum Fin/Copper Tube Condenser Coil
- Cu-Cu — Copper Fin/Copper Tube Condenser Coil
- EXV — Electronic Expansion Valve

\*No pumps are available for models 30RB315-390.



30RB315-390 — SI

UNIT 30RB	315	330	345	360	390
<b>OPERATING WEIGHT (Module A/Module B, kg)*</b>					
Al-Cu Condenser Coil	4656/4656	4808/4656	4808/4808	5448/4808	5448/5448
Cu-Cu Condenser Coil	5203/5203	5354/5203	5354/5354	6104/5354	6104/6104
<b>REFRIGERANT TYPE</b>	R-410A, EXV Controlled System				
Circuits Qty	4	4	4	4	4
Refrigerant Charge					
Module A Ckt A/Ckt B (kg)	73.5/48.1	73.5/60.3	73.5/60.3	73.5/73.5	73.5/73.5
Module B Ckt A/Ckt B (kg)	73.5/48.1	73.5/48.1	73.5/60.3	73.5/60.3	73.5/73.5
<b>COMPRESSORS</b>	Scroll, Hermetic				
Total Quantity	14	14	14	15	16
Speed (r/s)			58.3		
Module A, (Qty) Compressor Model Number (ton) Ckt A	(4) SH300	(4) SH300	(4) SH300	(4) SH300	(4) SH300
Module A, (Qty) Compressor Model Number (ton) Ckt B	(3) SH240	(3) SH300	(3) SH300	(4) SH300	(4) SH300
Module B, (Qty) Compressor Model Number (ton) Ckt A	(4) SH300	(4) SH300	(4) SH300	(4) SH300	(4) SH300
Module B, (Qty) Compressor Model Number (ton) Ckt B	(3) SH240	(3) SH240	(3) SH300	(3) SH300	(4) SH300
Module A Oil Charge (L, CktA/CktB)	52.5/39.4	52.5/39.4	52.5/39.4	52.5/52.5	52.5/52.5
Module B Oil Charge (L, CktA/CktB)	52.5/39.4	52.5/39.4	52.5/39.4	52.5/39.4	52.5/52.5
No. Capacity Steps					
Standard	14	14	14	15	16
Optional (Maximum)	16	16	16	17	18
Minimum Capacity Step (%)					
Standard	6	6	7	7	6
Optional	5	4	6	5	5
Capacity (%)					
Module A, Ckt A	31	30	29	27	25
Module A, Ckt B	19	22	21	27	25
Module B, Ckt A	31	30	29	27	25
Module B, Ckt B	19	18	21	20	25
<b>COOLER</b>	Direct Expansion, Shell and Tube Type				
Module A Weight (empty, kg)	689	689	689	689	689
Module B Weight (empty, kg)	689	689	689	689	689
Net Fluid Volume (L) Module A/Module B	278/278	278/278	278/278	278/278	278/278
Maximum Refrigerant Pressure (kPa)	3068	3068	3068	3068	3068
Maximum Fluid Side Pressure (kPa)	2068	2068	2068	2068	2068
<b>FLUID CONNECTIONS (in.)</b>					
Inlet and Outlet, Victaulic	6	6	6	6	6
Drain (NPT)	3/4	3/4	3/4	3/4	3/4
<b>CONDENSER FANS</b>	Shrouded Axial Type, Vertical Discharge				
Standard Low Noise Type					
Fan Speed (r/s) Standard	19	19	19	19	19
Module A No. Blades...Diameter (mm.) Ckt A/Ckt B	9...762/9...762	9...762/9...762	9...762/9...762	9...762/9...762	9...762/9...762
Module B No. Blades...Diameter (mm.) Ckt A/Ckt B	9...762/9...762	9...762/9...762	9...762/9...762	9...762/9...762	9...762/9...762
Total No. Fans	20	20	20	22	24
Module A No. Fans (Ckt A/Ckt B)	6/4	6/4	6/4	6/6	6/6
Module B No. Fans (Ckt A/Ckt B)	6/4	6/4	6/4	6/4	6/6
Total Airflow (L/s)	117 042	117 042	117 042	128 747	140 452
<b>CONDENSER COILS</b>	3/4-in. OD, Plate Fin, Enhanced Copper Tubing				
Module A No. Coils (Ckt A/Ckt B)	6/4	6/4	6/4	6/6	6/6
Module B No. Coils (Ckt A/Ckt B)	6/4	6/4	6/4	6/4	6/6
Total Face Area (sq m)	43.66	43.66	43.66	48.03	52.4
NO. Rows (Ckt A or B, any module)	3	3	3	3	3
Max Working Refrigerant Pressure (kPa)	4522	4522	4522	4522	4522

LEGEND

- Al-Cu — Aluminum Fin/Copper Tube Condenser Coil
- Cu-Cu — Copper Fin/Copper Tube Condenser Coil
- EXV — Electronic Expansion Valve

\*No pumps are available for models 30RB315-390.

# Physical data (cont)



## UNIT WEIGHTS — STANDARD UNITS

### UNITS WITHOUT PUMP — ENGLISH

UNIT 30RB	MOUNTING WEIGHT (lb) No Pump Al/Cu*				
	A	B	C	D	Total
060	869	913	1193	1136	4111
070	891	936	1275	1215	4317
080	982	958	1313	1346	4600
090	1159	1397	1845	1531	5932
100	1173	1431	1952	1600	6155
110	1319	1448	1964	1788	6519
120	1626	1648	2223	2194	7690
130	1634	1763	2413	2236	8045
150	1966	1899	2609	2700	9174

UNIT 30RB	MOUNTING WEIGHT (lb) No Pump Al/Cu*						
	A	B	C	D	E	F	Total
160	1106	2189	1104	1483	2923	1463	10,266
170	1142	2220	1108	1487	3039	1606	10,601

UNIT 30RB	MOUNTING WEIGHT (lb) No Pump Al/Cu*								
	A	B	C	D	E	F	G	H	Total
190	1094	1388	1484	1101	1479	2004	1938	1526	12,013

UNIT 30RB	MOUNTING WEIGHT (lb) No Pump Al/Cu*									
	A	B	C	D	E	F	G	H	Total	
210	916	1804	2139	853	1311	3044	2440	1228	13,734	
225	947	1836	2144	855	1313	3049	2569	1354	14,067	
250	1122	2271	2133	850	1307	3035	3166	1584	15,468	
275	627	2629	2805	1292	1866	3808	3169	1080	16,915	
300	899	2260	2792	1284	1859	3795	3640	1435	18,306	

### UNITS WITHOUT PUMP — SI

UNIT 30RB	MOUNTING WEIGHT (kg) No Pump Al/Cu*				
	A	B	C	D	Total
060	395	415	542	516	1869
070	405	425	580	552	1962
080	447	436	597	612	2091
090	527	635	839	696	2697
100	533	650	887	727	2798
110	600	658	893	813	2963
120	739	749	1011	997	3496
130	743	801	1097	1016	3657
150	894	863	1186	1227	4170

UNIT 30RB	MOUNTING WEIGHT (kg) No Pump Al/Cu*						
	A	B	C	D	E	F	Total
160	503	995	502	674	1328	665	4666
170	519	1009	503	676	1381	730	4819

UNIT 30RB	MOUNTING WEIGHT (kg) No Pump Al/Cu*								
	A	B	C	D	E	F	G	H	Total
190	497	631	674	500	672	911	881	694	5461

UNIT 30RB	MOUNTING WEIGHT (kg) No Pump Al/Cu*									
	A	B	C	D	E	F	G	H	Total	
210	416	820	972	388	596	1384	1109	558	6243	
225	431	835	975	389	597	1386	1168	615	6394	
250	510	1032	970	386	594	1380	1439	720	7031	
275	285	1032	1275	587	848	1731	1440	491	7689	
300	409	1183	1269	584	845	1725	1654	652	8321	

UNIT 30RB	MOUNTING WEIGHT (lb) No Pump Cu/Cu†				
	A	B	C	D	Total
060	992	1037	1311	1254	4,593
070	1014	1059	1393	1333	4,799
080	1106	1081	1431	1464	5,082
090	1342	1584	2020	1711	6,656
100	1355	1619	2126	1780	6,879
110	1503	1635	2139	1967	7,243
120	1841	1864	2429	2400	8,534
130	1879	2011	2647	2473	9,010
150	2213	2145	2845	2936	10,139

UNIT 30RB	MOUNTING WEIGHT (lb) No Pump Cu/Cu†						
	A	B	C	D	E	F	Total
160	1252	2497	1266	1642	3218	1599	11,472
170	1289	2528	1270	1645	3334	1742	11,807

UNIT 30RB	MOUNTING WEIGHT (lb) No Pump Cu/Cu†								
	A	B	C	D	E	F	G	H	Total
190	1257	1595	1691	1263	1638	2199	2133	1684	13,460

UNIT 30RB	MOUNTING WEIGHT (lb) No Pump Cu/Cu†									
	A	B	C	D	E	F	G	H	Total	
210	1018	2045	2410	978	1427	3297	2681	1326	15,181	
225	1049	2078	2415	981	1429	3301	2810	1452	15,514	
250	1283	2577	2404	976	1423	3288	3463	1744	17,157	
275	732	2554	3193	1501	2059	4185	3446	1175	18,845	
300	1064	2950	3179	1494	2053	4172	3974	1591	20,477	

UNIT 30RB	MOUNTING WEIGHT (kg) No Pump Cu/Cu†				
	A	B	C	D	Total
060	451	471	596	570	2088
070	461	481	633	606	2181
080	503	491	651	665	2310
090	610	720	918	778	3026
100	616	736	966	809	3127
110	683	743	972	894	3292
120	837	847	1104	1091	3879
130	854	914	1203	1124	4096
150	1006	975	1293	1334	4609

UNIT 30RB	MOUNTING WEIGHT (kg) No Pump Cu/Cu†						
	A	B	C	D	E	F	Total
160	569	1135	575	746	1463	727	5215
170	586	1149	577	748	1516	792	5367

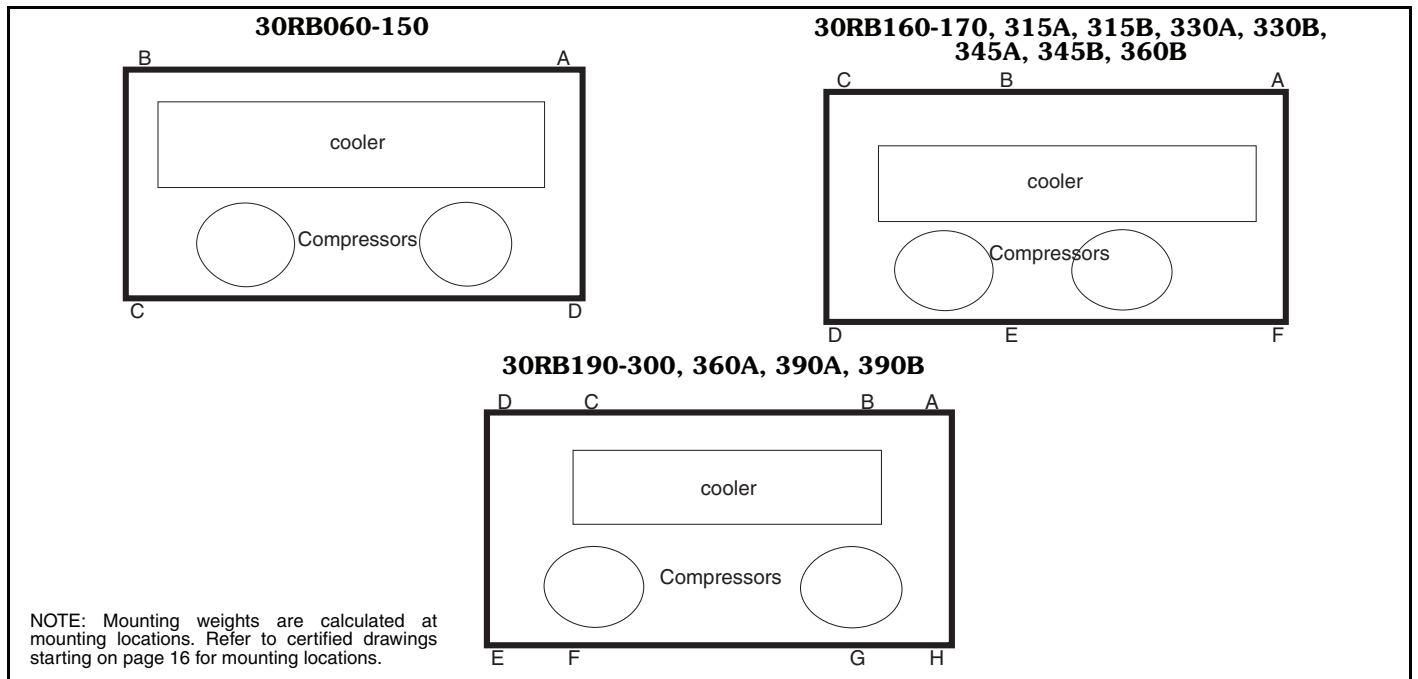
UNIT 30RB	MOUNTING WEIGHT (kg) No Pump Cu/Cu†								
	A	B	C	D	E	F	G	H	Total
190	571	725	769	574	744	1000	970	765	6118

UNIT 30RB	MOUNTING WEIGHT (kg) No Pump Cu/Cu†									
	A	B	C	D	E	F	G	H	Total	
210	463	930	1095	445	649	1498	1219	603	6901	
225	477	944	1098	446	650	1501	1277	660	7052	
250	583	1171	1093	444	647	1494	1574	793	7799	
275	333	1161	1451	682	936	1902	1566	534	8566	
300	484	1341	1445	679	933	1896	1807	723	9308	

\*Condenser Coil: Aluminum Fins/Copper Tubing.

†Condenser Coil: Copper Fins/Copper Tubing.





**UNIT WEIGHTS — SINGLE PUMP UNITS**

**SINGLE PUMP UNITS — ENGLISH**

UNIT 30RB	MOUNTING WEIGHT (lb) Single Pump Al/Cu*				
	A	B	C	D	Total
060	1085	1127	1230	1184	4626
070	1107	1150	1312	1263	4832
080	1193	1164	1354	1388	5100
090	1353	1620	1885	1575	6432
100	1366	1655	1991	1644	6655
110	1565	1653	1974	1868	7059
120	1822	1902	2302	2204	8230
130	1827	2021	2489	2250	8585
150	2214	2178	2696	2739	9827

UNIT 30RB	MOUNTING WEIGHT (lb) Single Pump Al/Cu*						
	A	B	C	D	E	F	Total
160	1238	2583	1104	1483	3155	1357	10,919
170	1279	2609	1108	1487	3276	1495	11,254

UNIT 30RB	MOUNTING WEIGHT (lb) Single Pump Al/Cu*								
	A	B	C	D	E	F	G	H	Total
190	1094	1510	1889	1101	1479	2178	1890	1526	12,666

UNIT 30RB	MOUNTING WEIGHT (lb) Single Pump Cu/Cu†				
	A	B	C	D	Total
060	1208	1250	1348	1302	5,108
070	1230	1273	1430	1381	5,314
080	1317	1287	1472	1506	5,582
090	1537	1806	2060	1753	7,156
100	1549	1841	2166	1823	7,379
110	1749	1839	2150	2045	7,783
120	2037	2119	2508	2411	9,074
130	2072	2269	2723	2487	9,550
150	2461	2425	2932	2975	10,792

UNIT 30RB	MOUNTING WEIGHT (lb) Single Pump Cu/Cu†						
	A	B	C	D	E	F	Total
160	1382	2894	1266	1642	3447	1495	12,125
170	1424	2920	1270	1645	3569	1633	12,460

UNIT 30RB	MOUNTING WEIGHT (lb) Single Pump Cu/Cu†								
	A	B	C	D	E	F	G	H	Total
190	1257	1718	2095	1263	1638	2374	2084	1684	14,113

\*Condenser Coil: Aluminum Fins/Copper Tubing.

**SINGLE PUMP UNITS — SI**

UNIT 30RB	MOUNTING WEIGHT (kg) Single Pump Al/Cu*				
	A	B	C	D	Total
060	493	512	559	538	2103
070	503	523	597	574	2196
080	542	529	616	631	2318
090	615	736	857	716	2924
100	621	752	905	747	3025
110	711	751	897	849	3209
120	828	865	1046	1002	3741
130	830	918	1131	1023	3902
150	1006	990	1225	1245	4467

UNIT 30RB	MOUNTING WEIGHT (kg) Single Pump Al/Cu*						
	A	B	C	D	E	F	Total
160	563	1174	502	674	1434	617	4963
170	582	1186	503	676	1489	679	5116

UNIT 30RB	MOUNTING WEIGHT (kg) Single Pump Al/Cu*								
	A	B	C	D	E	F	G	H	Total
190	497	686	858	500	672	990	859	694	5757

UNIT 30RB	MOUNTING WEIGHT (kg) Single Pump Cu/Cu†				
	A	B	C	D	Total
060	549	568	613	592	2322
070	559	579	650	628	2415
080	599	585	669	684	2537
090	699	821	937	797	3253
100	704	837	985	828	3354
110	795	836	977	930	3538
120	926	963	1140	1096	4125
130	942	1031	1238	1130	4341
150	1118	1102	1333	1352	4906

UNIT 30RB	MOUNTING WEIGHT (kg) Single Pump Cu/Cu†						
	A	B	C	D	E	F	Total
160	628	1315	575	746	1567	680	5511
170	647	1327	577	748	1622	742	5664

UNIT 30RB	MOUNTING WEIGHT (kg) Single Pump Cu/Cu†								
	A	B	C	D	E	F	G	H	Total
190	571	781	952	574	744	1079	947	765	6415

†Condenser Coil: Copper Fins/Copper Tubing.

**UNIT WEIGHTS — DUAL PUMP UNITS**

**DUAL PUMP UNITS — ENGLISH**

UNIT 30RB	MOUNTING WEIGHT (lb) Dual Pump Al/Cu*				
	A	B	C	D	Total
060	1218	1259	1254	1213	4,944
070	1240	1281	1336	1293	5,150
080	1372	1339	1389	1424	5,523
090	1518	1808	1919	1611	6,855
100	1530	1843	2025	1680	7,078
110	1741	1796	1983	1922	7,442
120	1959	2085	2356	2214	8,613
130	1962	2205	2541	2261	8,968
150	2436	2433	2773	2777	10,419

UNIT 30RB	MOUNTING WEIGHT (lb) Dual Pump Al/Cu*						
	A	B	C	D	E	F	Total
160	1336	2962	1104	1483	3344	1282	11,511
170	1383	2983	1108	1487	3471	1415	11,846

UNIT 30RB	MOUNTING WEIGHT (lb) Dual Pump Al/Cu*								
	A	B	C	D	E	F	G	H	Total
190	1094	1588	2288	1101	1479	2303	1879	1526	13,258

UNIT 30RB	MOUNTING WEIGHT (lb) Dual Pump Cu/Cu†				
	A	B	C	D	Total
060	1341	1382	1371	1331	5,426
070	1363	1405	1453	1411	5,632
080	1495	1462	1507	1541	6,005
090	1702	1994	2095	1788	7,579
100	1714	2030	2201	1858	7,802
110	1926	1982	2160	2099	8,166
120	2174	2301	2562	2420	9,457
130	2207	2453	2776	2498	9,933
150	2683	2680	3009	3012	11,384

UNIT 30RB	MOUNTING WEIGHT (lb) Dual Pump Cu/Cu†						
	A	B	C	D	E	F	Total
160	1481	3273	1266	1642	3637	1420	12,717
170	1527	3294	1270	1645	3763	1553	13,052

UNIT 30RB	MOUNTING WEIGHT (lb) Dual Pump Cu/Cu†								
	A	B	C	D	E	F	G	H	Total
190	1257	1799	2492	1263	1638	2502	2071	1684	14,705

\*Condenser Coil: Aluminum Fins/Copper Tubing.

**DUAL PUMP UNITS — SI**

UNIT 30RB	MOUNTING WEIGHT (kg) Dual Pump Al/Cu*				
	A	B	C	D	Total
060	554	572	570	552	2247
070	564	582	607	588	2341
080	624	609	631	647	2511
090	690	822	872	732	3116
100	695	838	920	764	3217
110	791	817	901	874	3383
120	890	948	1071	1006	3915
130	892	1002	1155	1028	4077
150	1107	1106	1260	1262	4736

UNIT 30RB	MOUNTING WEIGHT (kg) Dual Pump Al/Cu*						
	A	B	C	D	E	F	Total
160	607	1347	502	674	1520	583	5232
170	629	1356	503	676	1578	643	5385

UNIT 30RB	MOUNTING WEIGHT (kg) Dual Pump Al/Cu*								
	A	B	C	D	E	F	G	H	Total
190	497	722	1040	500	672	1047	854	1526	13,258

UNIT 30RB	MOUNTING WEIGHT (kg) Dual Pump Cu/Cu†				
	A	B	C	D	Total
060	610	628	623	605	2466
070	620	638	661	641	2560
080	680	665	685	701	2730
090	774	906	952	813	3445
100	779	923	1000	845	3547
110	875	901	982	954	3712
120	988	1046	1165	1100	4299
130	1003	1115	1262	1135	4515
150	1220	1218	1368	1369	5175

UNIT 30RB	MOUNTING WEIGHT (kg) Dual Pump Cu/Cu†						
	A	B	C	D	E	F	Total
160	673	1488	575	746	1653	646	5781
170	694	1497	577	748	1710	706	5933

UNIT 30RB	MOUNTING WEIGHT (kg) Dual Pump Cu/Cu†								
	A	B	C	D	E	F	G	H	Total
190	571	818	1133	574	744	1137	941	1684	14,705

†Condenser Coil: Copper Fins/Copper Tubing.

# Options and accessories



ITEM	FACTORY-INSTALLED OPTION	FIELD-INSTALLED ACCESSORY
<b>Condenser Coil and Sound Options</b>		
Aluminum Fins/Copper Tube, Pre-Coated	X	
Aluminum Fins/Copper Tube, E-Coat	X	
Copper Fins/Copper Tube, E-Coat	X	
Copper Fins/Copper Tube Condenser Coils	X	
Compressor Sound Reduction Enclosures	X	
<b>Controls/Communication Option</b>		
BACnet™ Translator Control	X	X
Chillervisor System Manager III Multi-Unit Control		X
DataLINK™ Control		X
DataPort™ Control		X
Energy Management Module	X	X
Convenience Outlet		X
LON Translator Control	X	X
Navigator™ Display		X
Remote Service Port		X
Remote Enhanced Display		X
Service Option	X	X
<b>Cooler Option</b>		
Freeze Protection — Cooler Heaters	X	
Medium Temperature Brine	X	
Remote Cooler	X	X
<b>Electrical Option</b>		
Unit-Mounted Main Disconnect, Non-Fused	X	
<b>Hydronics Option</b>		
Hydronic Pump Package	X	
Expansion Tank		X
<b>Refrigeration Circuit Option</b>		
Non-Removable Core Filter Drier (060-100)	X	
Compressor Suction Service Valve	X	
Low Ambient Temperature Head Pressure Control	X	X
Minimum Load Control	X	X
Suction Line Insulation	X	
<b>Security/Packaging Option</b>		
Condenser Coil Trim Panels	X	X
Condenser Coil Hail Guards	X	X
Security Grilles	X	X

LEGEND

LON — Local Operating Network

## Factory-installed options

**Condenser coil options** are available to match coil construction to the site conditions for the best durability. Refer to the Environmental Corrosion Protection white paper for more information.

**Filter drier** option exists for non-removable core filter driers for value engineering purposes. Standard units are equipped with a removable core filter drier. This option is not available with the Medium Temperature Brine option. The non-removable core filter drier is only available for sizes 30RB060-100.

**Compressor suction service valve** provides additional isolation of the compressor from the cooler vessel for service. Standard refrigerant discharge isolation and liquid valves enable service personnel to store the refrigerant charge in the cooler or condenser during servicing.

**Suction line insulation** is tubular closed-cell insulation. This option is required with the Medium Temperature Brine option and recommended for areas of high dew-points where condensation may be a concern.

**Hydronic pump package** option adds circulating pumps, a combination valve (isolation, modulation and check), strainer, victaulic field piping connections, insulation and heaters, and pressure/temperature taps (3). The pumps are available in single or dual (lead/lag controlled) cooler pump versions with total dynamic head external to the chiller from approximately 20 to 140 ft (6.1 m to 42.7 m). Also includes heater and insulation for freeze protection to -20 F (-29 C) with the freeze protection option. The hydronic pump package is only available for sizes 30RB060-190.

**Freeze protection** with cooler heaters provides protection from cooler freezeup to -20 F (-29 C).

**Energy Management Module** provides energy management capabilities to minimize chiller energy consumption. Several features are provided with this module including leaving fluid temperature reset, cooling set point reset or demand limit control from a 4 to 20 mA signal, 2-step demand limit control (from 0 to 100%) activated by a remote contact closure, and discrete input for “Ice Done” indication for ice storage system interface.

**Service option** provides a remote service port for Navigator™ display connection and a factory-installed convenience outlet includes 4-amp GFI (Ground Fault Interrupt) receptacle with independent fuse protection. Convenience outlet is 115-v female receptacle. Service option not available with 380-v.

**Low ambient temperature head pressure control** permits operation of the 30RB units to -20 F (-29 C) outdoor ambient temperature. The control is also available as a field-installed accessory and may require field-installed wind baffles.

**Medium temperature brine** option allows for leaving fluid temperatures to be set between 30 and 39 F (-1.1 and 3.9 C). Low ambient temperature head pressure control and suction line insulation are required.

**Unit-mounted non-fused disconnect** option provides non-fused disconnect capability for power and control located at the unit.

**Minimum load control** option allows additional capacity reduction for unit operation below the minimum step of unloading (down to 6% of the minimum unit capacity, depending on unit size). Minimum load control is also available as a field-installed accessory.

**Security grilles** protect the condenser coil from damage with coated wire grilles with openings of 1 by 4 in. (25 mm





x 102 mm). The security grille option requires the condenser coil trim panel option. Security grilles are also available as a field-installed accessory.

**Condenser coil trim panels** provide an aesthetic, finished appearance for the condenser coil ends of the cooler/pump connection side of the unit. Condenser coil trim panels are also available as a field-installed accessory.

**Hail guards** are comprised of sheet metal hoods that provide protection against damage from hail and flying debris. Hail guards are also available as a field-installed accessory.

**Compressor sound enclosures** provide sound reduction for the scroll compressors.

**BACnet™ Translator Control** provides an interface between the chiller and a BACnet Local Area Network (LAN, i.e., MS/TP EIA-485). BACnet Translator Control is also available as a field-installed accessory.

**LON Translator Control** interface between the chiller and a Local Operating Network (LON, i.e., LonWorks FT-10A ANSI/EIA-709.1). LON Translator Control is also available as a field-installed accessory.

**Remote cooler** option provides the additional hardware required to remotely mount the cooler from the unit. The cooler-unit separation is limited to 75 equivalent feet. The remote cooler option is also available as a field-installed accessory.

### Field-installed accessories

**Minimum load control** accessory allows additional capacity reduction for unit operation below the minimum step of unloading (down to 6% of the minimum unit capacity, depending on unit size) via hot gas bypass.

**Hail guards** are comprised of sheet metal hoods that provide protection against damage from hail and flying debris. Hail guards are also available as a field-installed option.

**Navigator™ display** accessory provides a portable handheld display for convenient access to unit status, operation, configuration and troubleshooting diagnostics capability. The four-line, 80-character LCD display provides clear language information in English, French, Spanish, or Portuguese. The weatherproof enclosure and industrial grade extension cord enables the Navigator display to be ideally suited for outdoor applications. Magnets located on the back of the module allow attachment to any sheet metal component for hands-free operation.

**Remote enhanced display** accessory kit contains a remotely mounted indoor 40-character per line, 16-line display panel for unit diagnostics.

**Chillervisor System Manager III multi-unit control** accessory allows sequencing of between two and eight chillers in parallel. Pump control is also provided.

**Low ambient temperature head pressure control** permits operation of the 30RB units to -20 F (-29 C) outdoor ambient temperature. The control is also available as

a factory-installed option and may require field-installed wind baffles.

**Energy Management Module** provides energy management capabilities to minimize chiller energy consumption. Several features are provided with this module including leaving fluid temperature reset, cooling set point reset or demand limit control from a 4 to 20 mA signal, 2-step demand limit control (from 0 to 100%) activated by a remote contact closure (one-step demand limit does not require the Energy Management Module), and discrete input for “Ice Done” indication for ice stage system interface.

**Expansion tank** enables the chilled water system to accommodate fluctuations in volume based on increases or decreases in fluid temperature.

**Remote service port** consists of a receptacle for Navigator connection. The port is housed in a waterproof enclosure conveniently located for easy access to information during operation and maintenance routines.

**Convenience outlet** includes 4-amp GFI (Ground Fault Interrupt) receptacle with independent fuse protection. Convenience outlet is 115V female receptacle. Not available with 380V.

**Remote cooler** accessory provides the additional hardware required to remotely mount the cooler from the unit. The cooler-unit separation is limited to 75 equivalent feet. The remote cooler accessory is also available as a factory-installed option.

**DataPort™ control** is an interface device that allows a non-Carrier controller to *read* values in the system elements connected to the Carrier Comfort Network® (CCN) Communication Bus using ASCII over a RS-232 connection. Externally remote mounted with power supply.

**DataLINK™ control** is an interface device that allows a non-Carrier controller to *read and write* values in the system elements connected to the CCN Communication Bus using ASCII over a RS-232 connection.

**BACnet Translator Control** provides an interface between the chiller and a BACnet Local Area Network (LAN, i.e., MS/TP EIA-485). BACnet Translator Control is also available as a factory-installed option.

**LON Translator Control** provides an interface between the chiller and a Local Operating Network (LON, i.e., LonWorks FT-10A ANSI/EIA-709.1). LON Translator Control is also available as a factory-installed option.

**Security grilles** protect the condenser coil from damage with coated wire grilles with openings of 1 by 4 in. (25 mm x 102 mm). The security grille accessory requires the condenser coil trim panel accessory. Security grilles are also available as a factory-installed option.

**Condenser coil trim panels** provide an aesthetic, finished appearance for the condenser coil ends of the cooler/pump connection side of the unit. Condenser coil trim panels are also available as a factory-installed option.

### CONDENSER COIL CORROSION PROTECTION OPTIONS

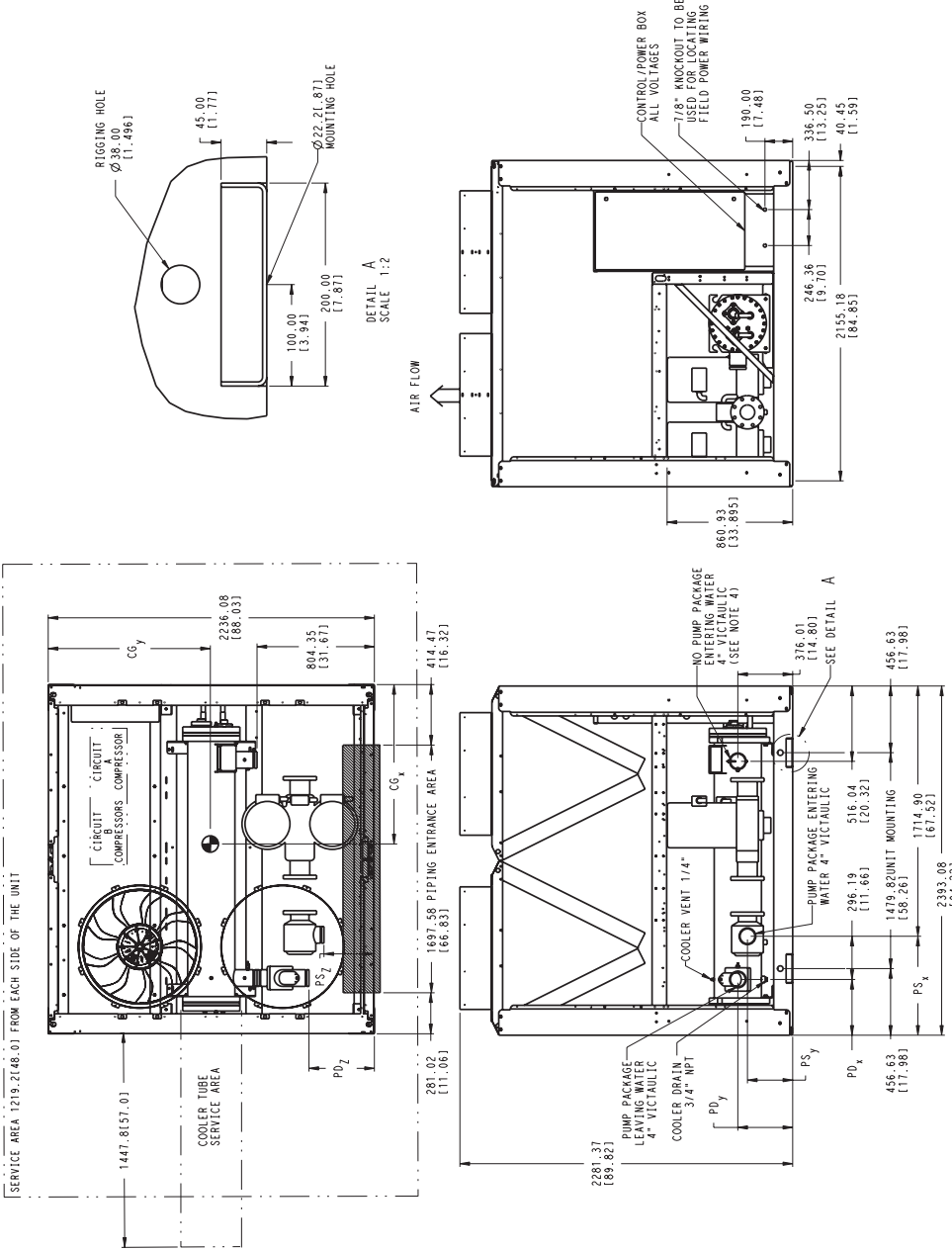
ENVIRO-SHIELD™ OPTION*	ENVIRONMENT				
	Standard	Mild Coastal	Severe Coastal	Industrial	Combined Industrial/Coastal
AL Fins (Standard Coils)	X				
CU Fins		X			
AL Fins, E-coat			X	X	X
CU Fins, E-coat			X		
AL Fins, Precoated		X			

#### LEGEND

AL — Aluminum  
CU — Copper

\*See selection guide “Environmental Corrosion Protection” for more information (Publication 811-20062).

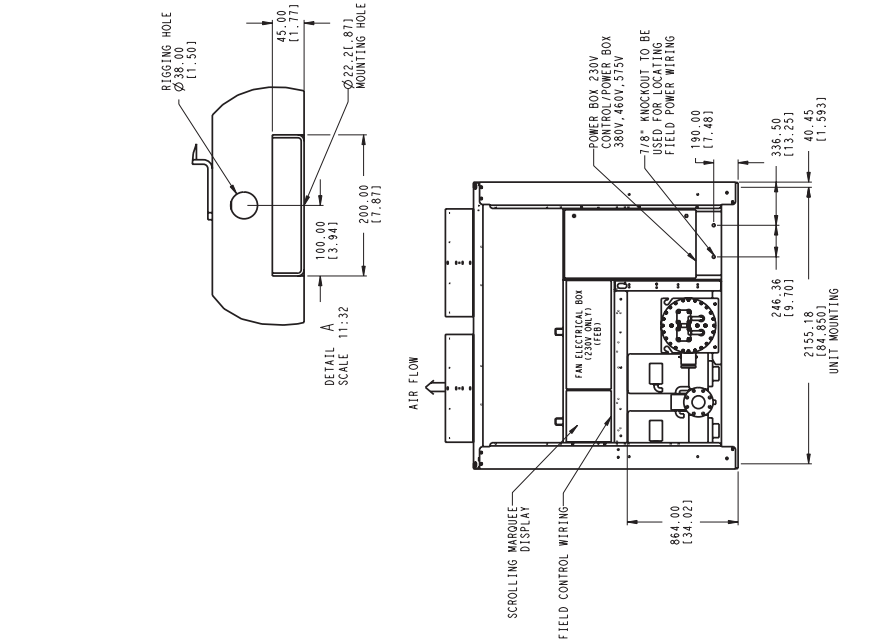
## 30RB060, 070 AIR-COOLED CHILLER



- NOTES:**
- Unit must have clearances as follows:  
Top — Do not restrict.  
Sides and End — 6' from solid surface.
  - All pumps have drains located at the bottom of volute for draining.
  - Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have 1/4" flare connection.
  - Units without a pump package have the same leaving water connection, Y and Z dimensions, (entering water) and Pump Discharge X dimensions as units with a pump package.
  - Dimensions are in mm [inches].

WEIGHT CU/AL lb/kg	MAX WEIGHT CU/AL PUMP lb/kg	MAX WEIGHT CU/CU PUMP lb/kg	CENTER OF GRAVITY			PUMP SUCTION (PS)			PUMP DISCHARGE (PD)				
			CGx MM [INCH.]	CGy MM [INCH.]	CGz MM [INCH.]	X ±.25	Y ±.25	Z ±.25	X ±.25	Y ±.25	Z ±.25		
30RB-060	3872	4705	1164	1038	675.6	305.9	353.1	381.0	482.6	188.0			
1756	2134	1915	145.82	140.86	126.6	112.2	113.9	119.0	119.0	117.4			
30RB-070	4077	4911	1165	1013	675.6	305.9	353.1	381.0	482.6	188.0			
1849	2228	2080	145.86	132.88	126.6	112.2	113.9	119.0	119.0	117.4			

### 30RB080 AIR-COOLED CHILLER



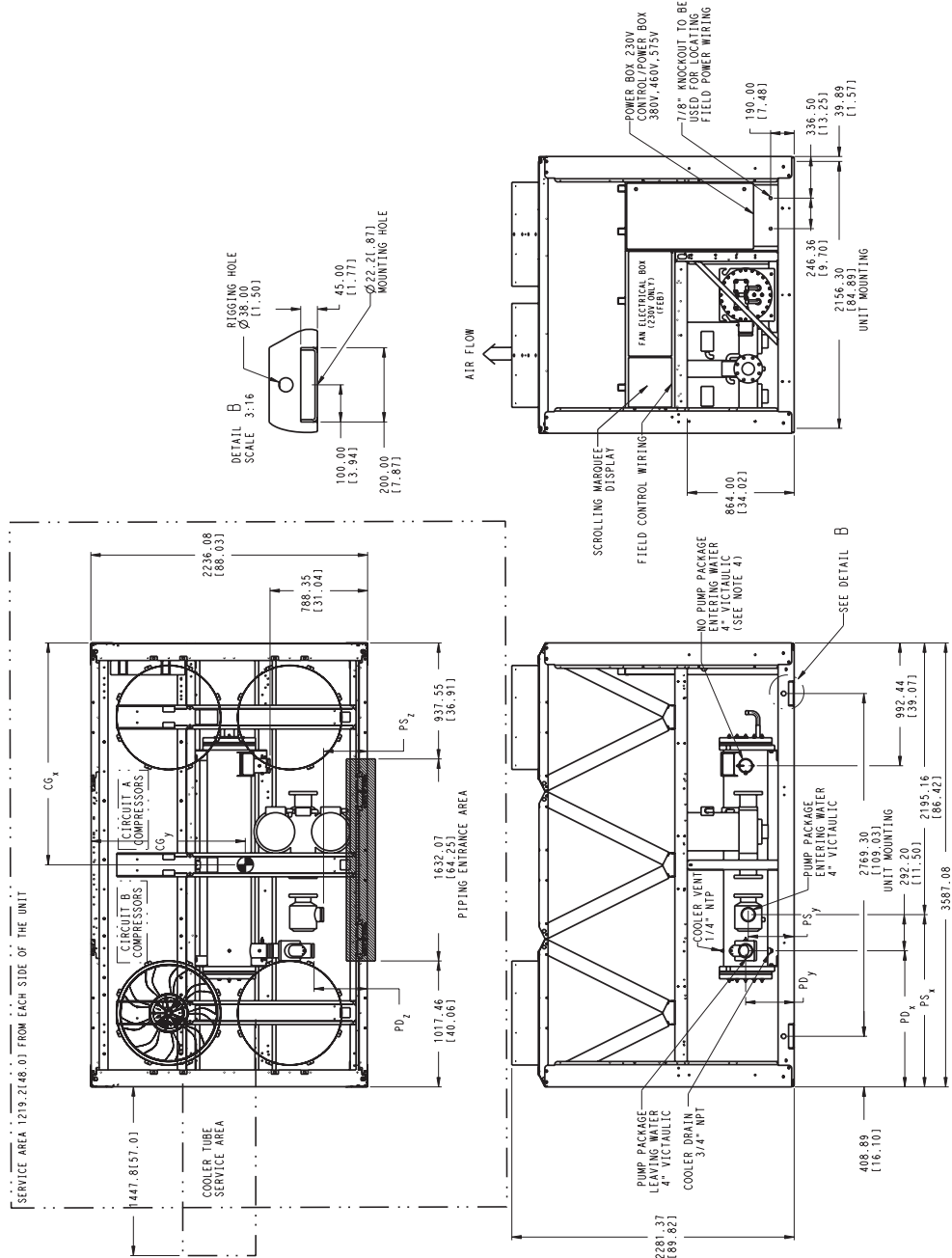
- NOTES:**
- Unit must have clearances as follows:  
 Top — Do not restrict.  
 Sides and End — 6' from solid surface.  
 All pumps have drains located at the bottom or volute for draining.
  - Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have 1/4" flare connection.
  - Units without a pump package have the same leaving water connection, Y and Z dimensions, (entering water) and Pump Discharge X dimensions as units with a pump package.
  - Dimensions are in mm [inches].

WEIGHT	MAX WEIGHT	WEIGHT	PUMP SUCTION (PS)			PUMP DISCHARGE (PD)			
			CU/AL	CU/AL	CU/AL	X	Y	Z	
4335	5258	4817	1012	675.6	309.9	353.1	381.0	497.8	170.2
1966	2385	2185	147.48	126.6	112.2	113.9	115.0	119.6	6.7

# Dimensions (cont)



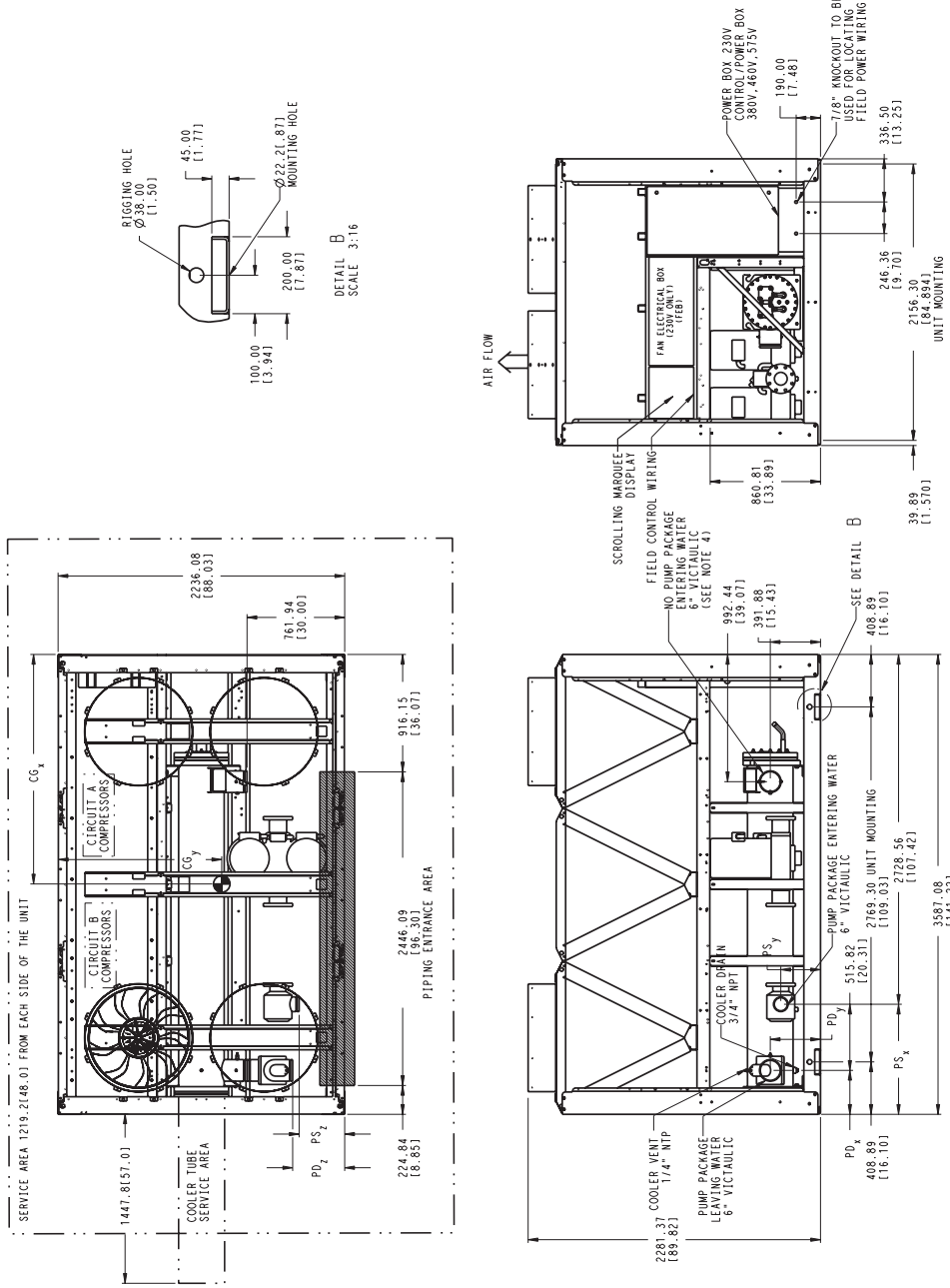
## 30RB090, 100 AIR-COOLED CHILLER



- NOTES:**
- Unit must have clearances as follows:  
Top — Do not restrict.  
Sides and End — 6" from solid surface.
  - All pumps have drains located at the bottom of volute for draining.
  - Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have 1/4" flare connection.
  - Units without a pump package have the same (entering water) and Pump Discharge X dimensions as units with a pump package.
  - Dimensions are in mm [inches].

WEIGHT (lb/kg)	MAX WEIGHT (lb/kg)	WEIGHT (lb/kg)	MAX WEIGHT (lb/kg)	CENTER OF GRAVITY (mm)	CENTER OF GRAVITY (mm)	PUMP SUCTION (PS)	PUMP DISCHARGE (PS)
5667	6580	5297	7312	1017	1525	309.9	353.1
2571	2989	2859	3318	40.01	64.01	112.2	133.9
5890	6813	6614	7537	1614	999	309.9	353.1
2612	3090	3000	3419	63.5	139.3	112.2	133.9

### 30RB110 AIR-COOLED CHILLER



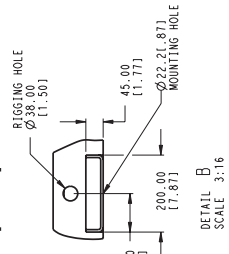
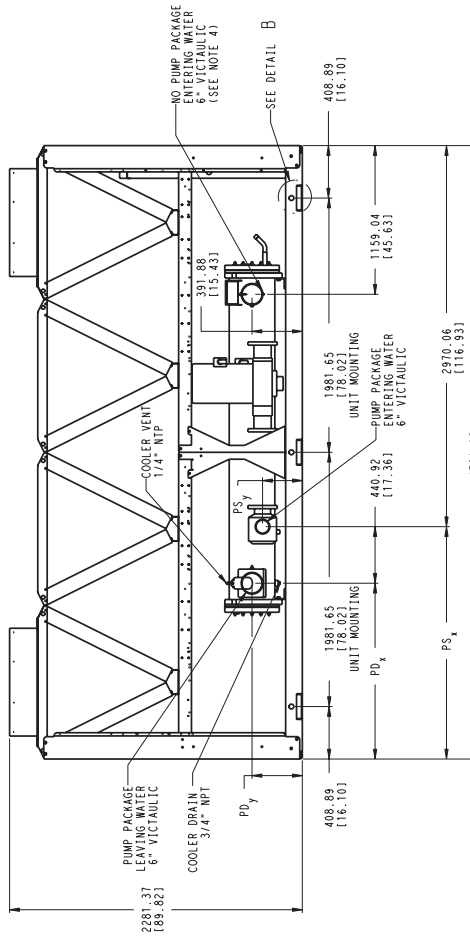
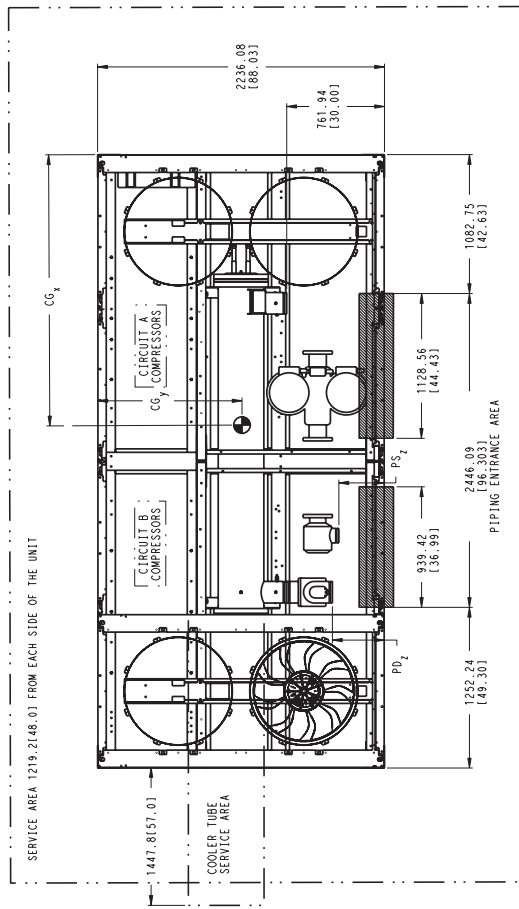
- NOTES:**
- Unit must have clearances as follows:  
Top — Do not restrict.  
Sides and End — 6' from solid surface.
  - All pumps have drains located at the bottom of volute for draining.
  - Temperature relief devices ocated on suction line, liquid line and filter drier of each circuit and have 1/4" flare connection.
  - Units without a pump package have the same leaving water connection, Y and Z dimensions, (entering water) and Pump Discharge X dimensions as units with a pump package.
  - Dimensions are in mm [inches].

	WEIGHT		CENTER OF GRAVITY		PUMP SUCTION (DS)		PUMP DISCHARGE (PD)	
	CU/AL	IB/KG	CU/AL	IB/KG	Y	Z	Y	Z
30RB-110	6144	7067	6868	7791	171.3	997	856.0	281.9
	2187	3206	3115	3534	±.25	±.25	±.25	±.25

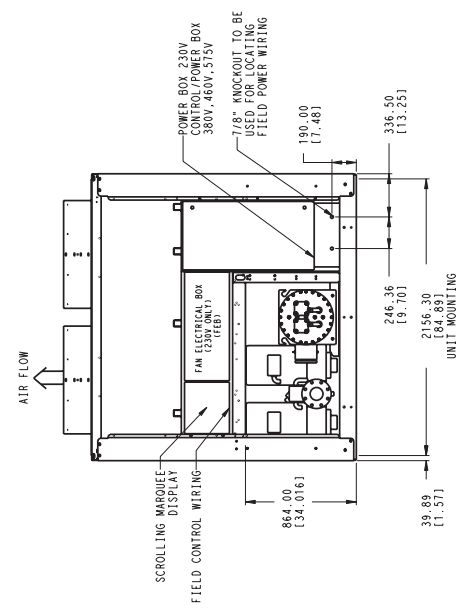
# Dimensions (cont)



## 30RB120 AIR-COOLED CHILLER



- NOTES:**
- Unit must have clearances as follows:  
Top — Do not restrict.  
Sides and End — 6' from solid surface.
  - All pumps have drains located at the bottom of volute for draining.
  - Temperature relier devices located on suction line, liquid line and filter drier of each circuit and have 1/4" flare connection.
  - Units without a pump package have the same leaving water connection, Y and Z dimensions, (entering water) and Pump Discharge X dimensions as units with a pump package.
  - Dimensions are in mm [inches].



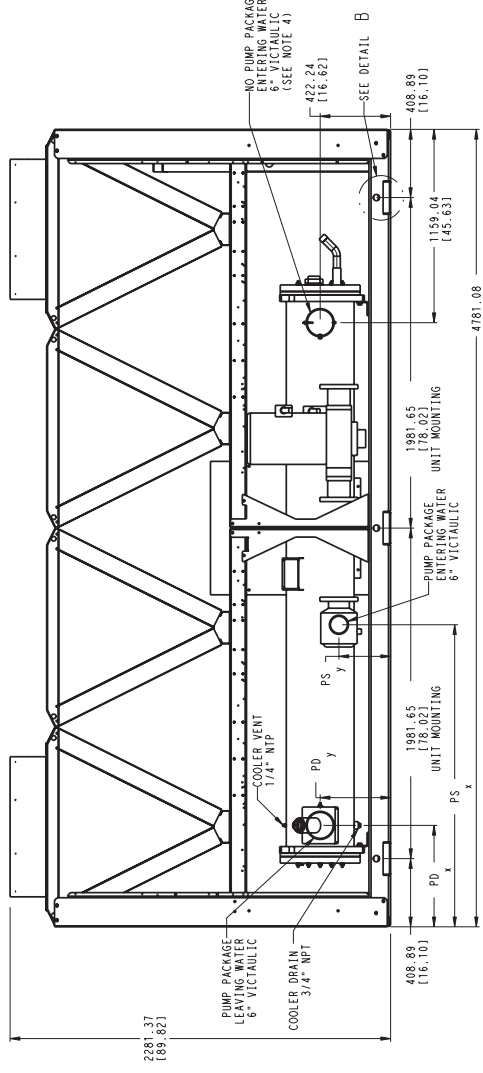
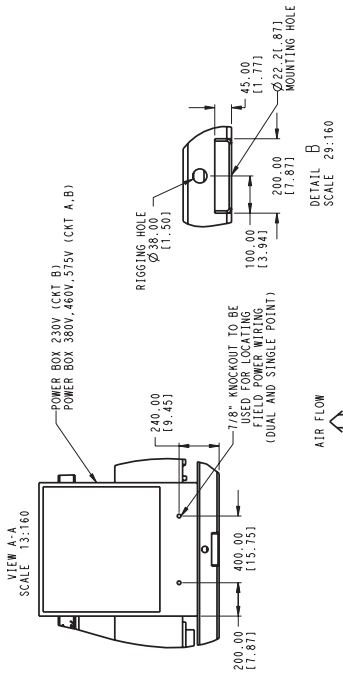
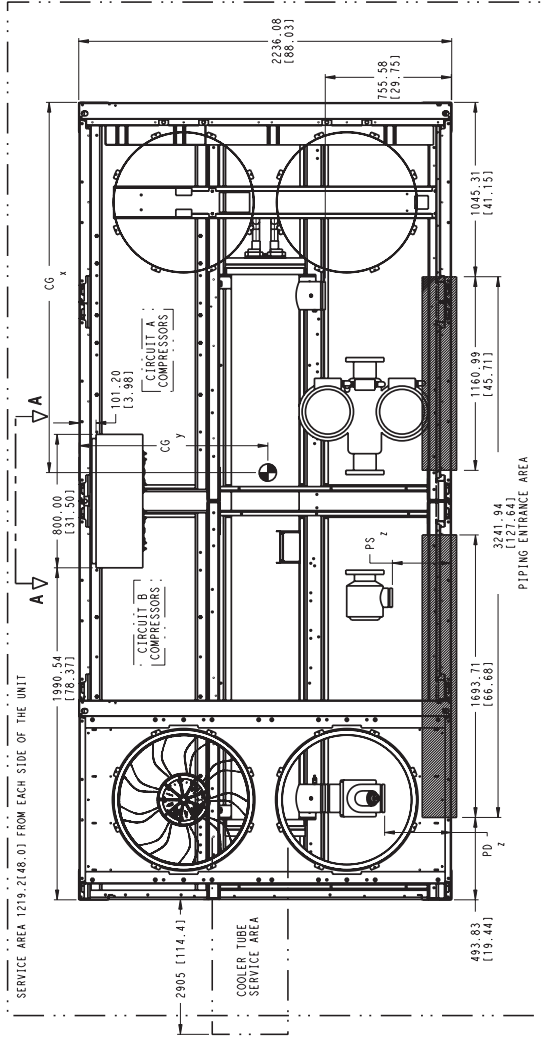
WEIGHT lb/kg	MAX WEIGHT CU (IMP) lb/kg	WEIGHT CU (IMP) lb/kg	MAX WEIGHT CU (IMP) lb/kg	CENTER OF GRAVITY MM (IN)	PUMP SUCTION (PS)		PUMP DISCHARGE (PD)		
					MM (IN)	MM (IN)	MM (IN)	MM (IN)	
731.5	823.8	815.9	908.2	2246.09 (88.03)	1808.5 (71.19)	281.9 (11.10)	60.9 (2.40)	1366.5 (53.57)	331.7
331.8	373.7	370.1	417.0	1447.81 (57.01)	171.2 (6.74)	171.2 (6.74)	171.2 (6.74)	533.8 (21.02)	192.2 (7.57)



### 30RB130, 150 AIR-COOLED CHILLER

**NOTES:**

1. Unit must have clearances as follows:  
Top — Do not restrict.  
Sides and End — 6' from solid surface.
2. All pumps have drains located at the bottom of volute for draining.
3. Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have 1/4" flare connection.
4. Units without a pump package have the same leaving water connection, Y and Z dimensions, (entering water) and Pump Discharge X dimensions as units with a pump package.
5. Dimensions are in mm [inches].

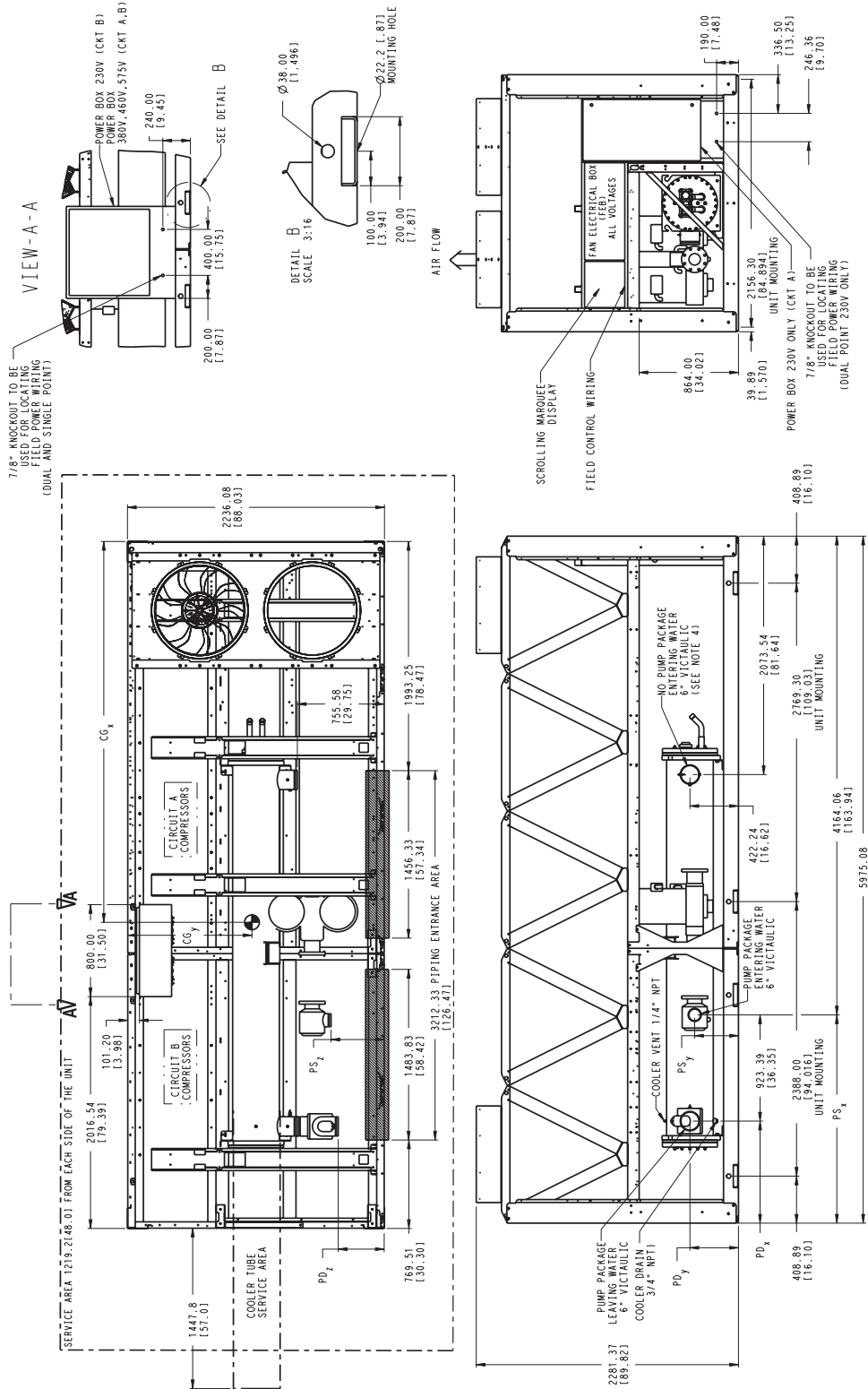


WEIGHT	MAX WEIGHT	CU/AL PUMP	CU/AL PUMP	CU/AL PUMP	CENTER OF GRAVITY			PUMP SUCTION (PS)			PUMP DISCHARGE (PD)			
					CG*	MM [INCH]	MM [INCH]	X	Y	Z	X	Y	Z	
1879	1879	10789	10789	10789	±.25	±.25	±.25	±.25	±.25	±.25	±.25	±.25	±.25	±.25
30RB-130	3079	5893	3615	4538	62 [2.45]	62 [2.45]	62 [2.45]	109 [4.30]	109 [4.30]	109 [4.30]	109 [4.30]	109 [4.30]	109 [4.30]	109 [4.30]
30RB-150	5854	9808	8529	10773	2392	983	1808.5	381	297.2	604.5	421.6	231.1	191.1	191.1
	3854	4449	4322	4887	(94.17)	(38.70)	(71.2)	(15.0)	(11.7)	(23.8)	(16.6)	(9.1)	(9.1)	(9.1)

# Dimensions (cont)



## 30RB160, 170, 315A/B, 330A/B, 345A/B, 360B AIR-COOLED CHILLER

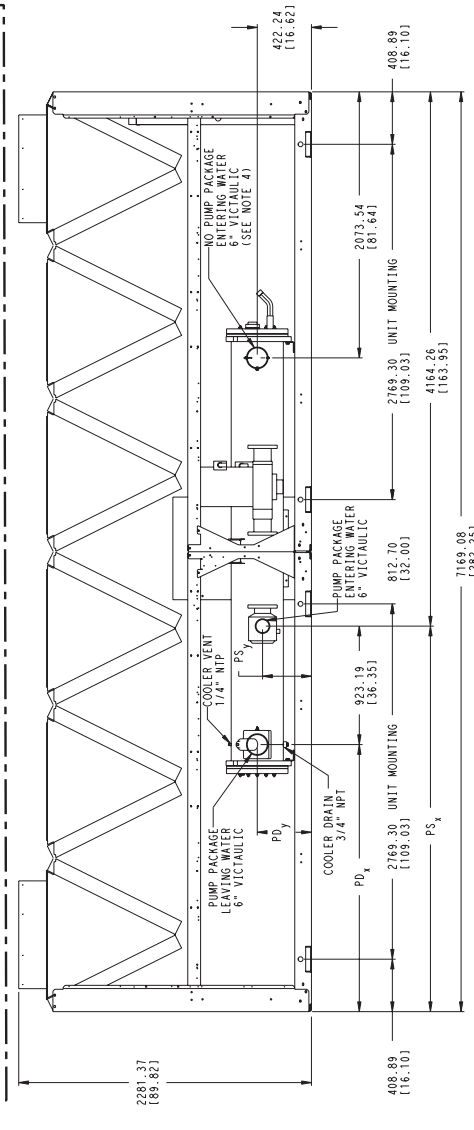
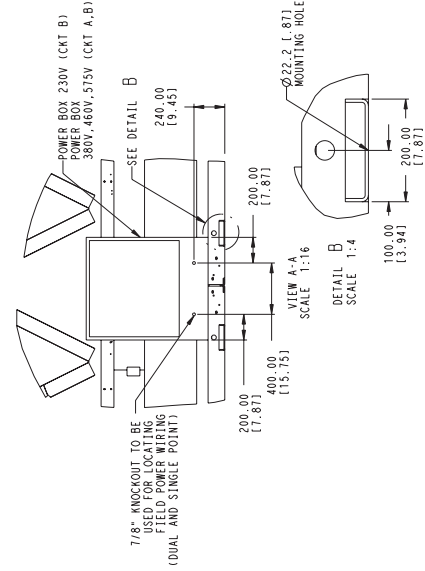
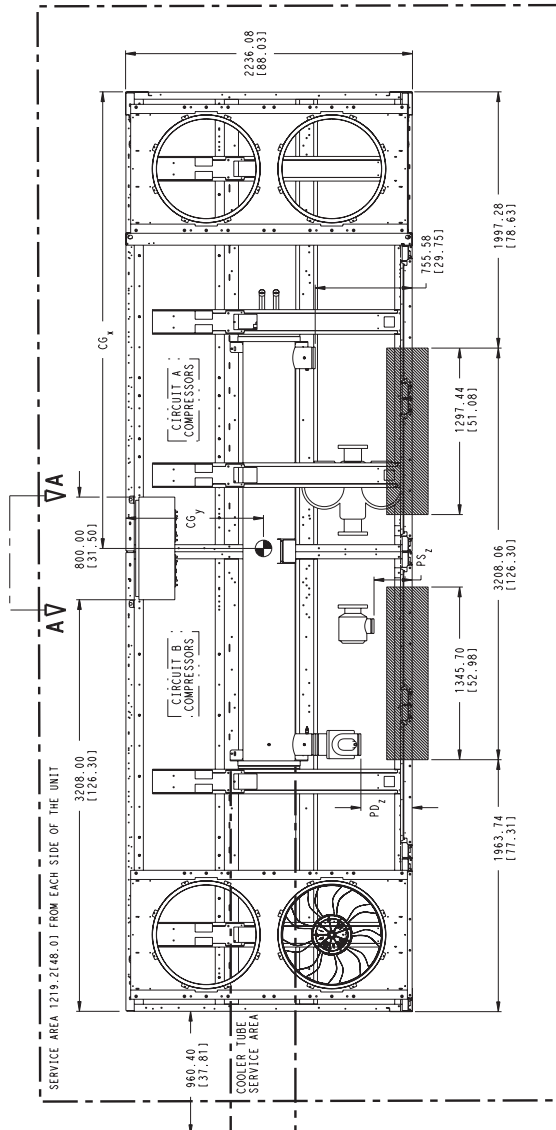


MODEL	WEIGHT CU/AL lb/kg	MAX WEIGHT CU/AL lb/kg	PUMP SUCTION (PS)	CENTER OF GRAVITY			PUMP DISCHARGE (PD)				
				MM (INCH)	CG <sub>x</sub>	CG <sub>y</sub>	CG <sub>z</sub>	X	Y	Z	
30RB-160	9556	10900	12106	3065	994	1808.48	381	297.2	883.92	421.64	231.14
315A/B, 330B	4380	4944	4927	5491	1720.65	139.13	171.2	115.0	111.7	134.6	116.6
30RB-170	9991	11235	11191	7244	1111	978	1808.48	381	297.2	883.92	421.64
330A, 345A/B, 360B	4532	5095	5073	5843	1722.59	139.73	171.2	115.0	111.7	134.6	116.6

- NOTES:**
- Unit must have clearances as follows:  
 Top — Do not restrict.  
 Sides and End — 6" from solid surface.
  - All pumps have drains located at the bottom of volute for draining.
  - Temperature reifer devices located on suction line, liquid line and filter drier of each circuit and have 1/4" flare connection.
  - Units without a pump package have the same leaving water connection, Y and Z dimensions, (entering water) and Pump Discharge X dimensions as units with a pump package.
  - Dimensions are in mm [inches].

### 30RB190, 360A, 390A/B AIR-COOLED CHILLER

- NOTES:**
- Unit must have clearances as follows:  
 Top — Do not restrict.  
 Sides and End — 6" from solid surface.
  - All pumps have drains located at the bottom of volute for draining.
  - Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have 1/4" flare connection.
  - Dimensions are in mm [inches].



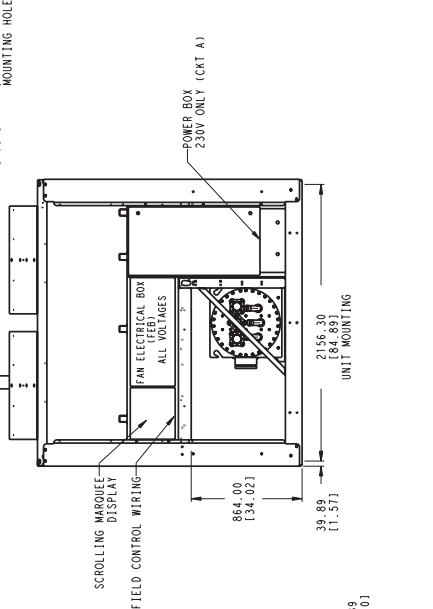
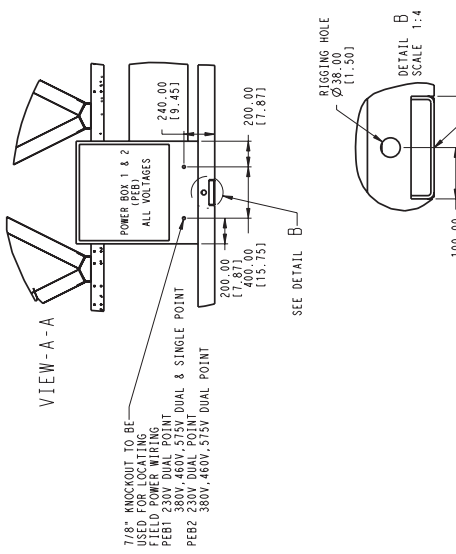
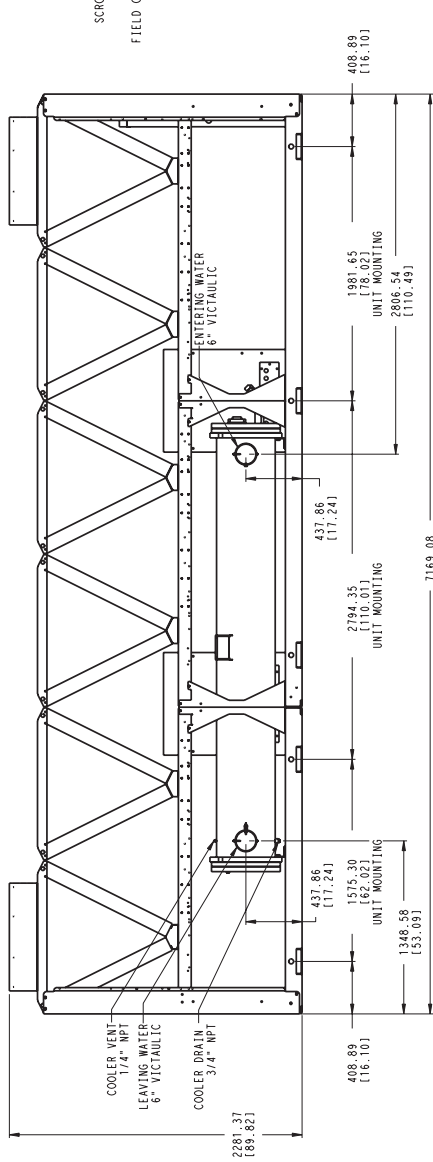
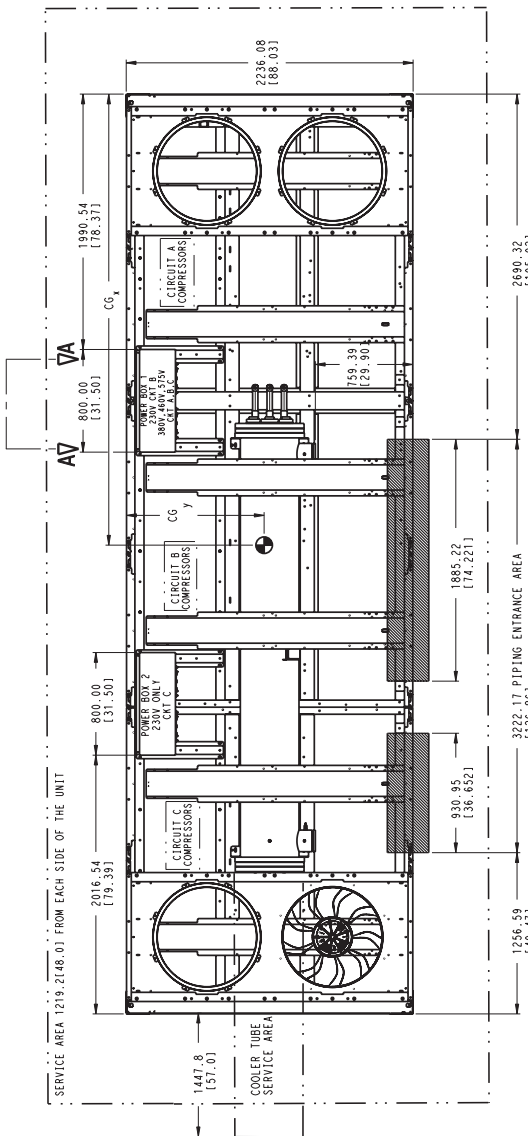
WEIGHT	MAX WEIGHT	CENTER OF GRAVITY	PUMP SUCTION (PS)			PUMP DISCHARGE (PD)		
			X	Y	Z	X	Y	Z
CU/AL	CU/AL	MM [INCH]	±.25	±.25	±.25	±.25	±.25	±.25
LB/KG	LB/KG	MM [INCH]	3002.381	297.2	2080.3	421.6	231.1	231.1
30RB-190	11402	3578	[116.2]	[15.0]	[11.7]	[61.3]	[16.6]	[9.1]
360A, 390A/B	3172	5823	[140.8]	[36.3]	[118.2]	[46.9]	[116.6]	[46.0]

# Dimensions (cont)



## 30RB210, 225 AIR-COOLED CHILLER

- NOTES:**
- Unit must have clearances as follows:  
 Top — Do not restrict.  
 Sides and End — 6" from solid surface.  
 Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have 1/4" flare connection.
  - Dimensions are in mm [inches].

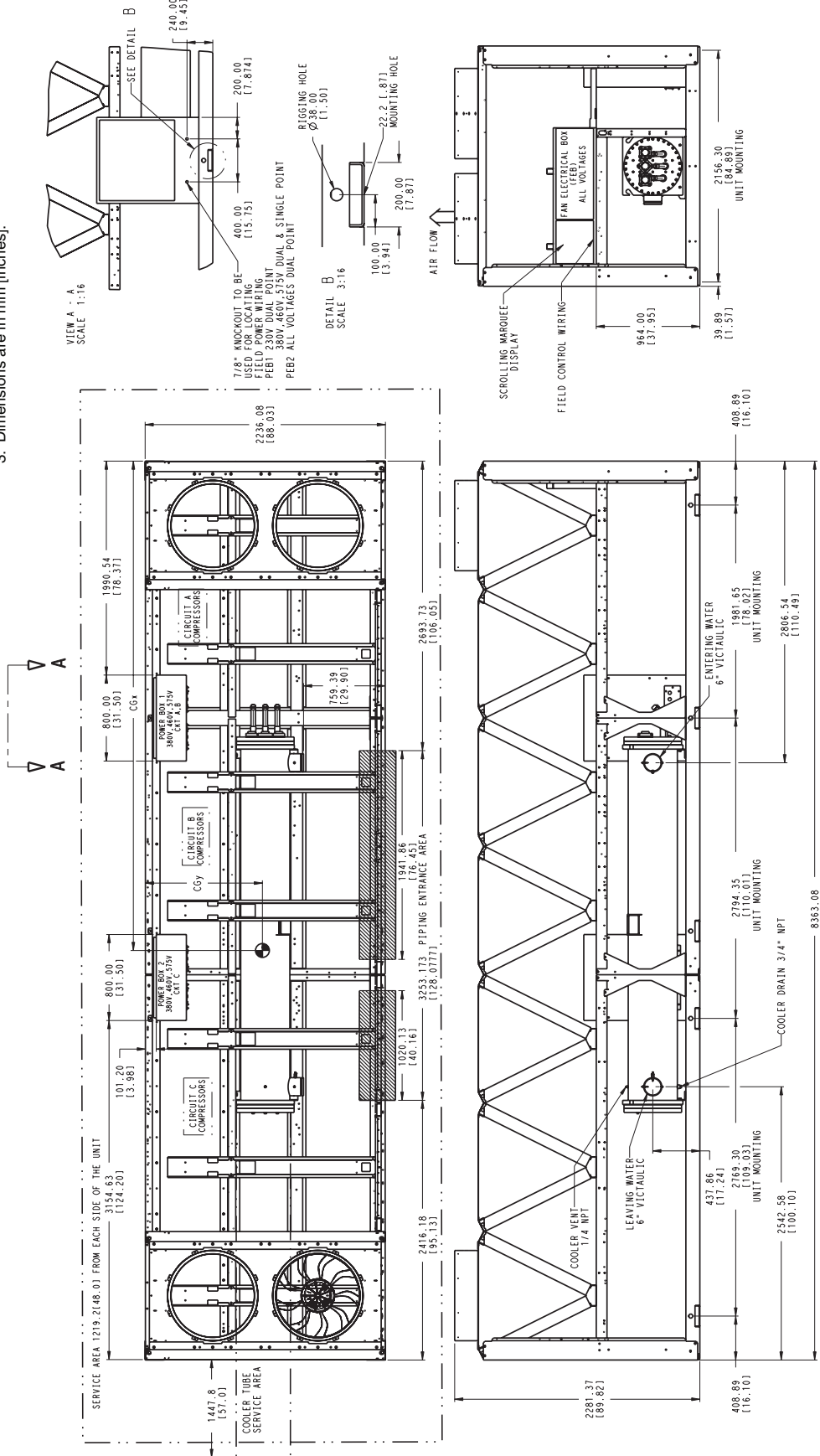


	WEIGHT	WEIGHT	WEIGHT	WEIGHT	WEIGHT	WEIGHT	WEIGHT	WEIGHT	WEIGHT	WEIGHT	WEIGHT	WEIGHT	WEIGHT	WEIGHT	WEIGHT	WEIGHT	WEIGHT	
	(lb)	(kg)	(lb)	(kg)	(lb)	(kg)	(lb)	(kg)	(lb)	(kg)	(lb)	(kg)	(lb)	(kg)	(lb)	(kg)	(lb)	(kg)
	1301.9	590.5	1446.5	656.2	1301.9	590.5	1446.5	656.2	1301.9	590.5	1446.5	656.2	1301.9	590.5	1446.5	656.2	1301.9	590.5
30RB-210	1301.9	590.5	1446.5	656.2	1301.9	590.5	1446.5	656.2	1301.9	590.5	1446.5	656.2	1301.9	590.5	1446.5	656.2	1301.9	590.5
30RB-225	1335.2	605.6	1479.9	671.3	1335.2	605.6	1479.9	671.3	1335.2	605.6	1479.9	671.3	1335.2	605.6	1479.9	671.3	1335.2	605.6

### 30RB250 AIR-COOLED CHILLER

**NOTES:**

1. Unit must have clearances as follows:  
 Top — Do not restrict.  
 Sides and End — 6" from solid surface.
2. Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have 1/4" flare connection.
3. Dimensions are in mm [inches].



WEIGHT	MAX WEIGHT	WEIGHT	MAX WEIGHT	CENTER OF GRAVITY
CU/AL	CU/AL	CU/CO	CU/CO	CG*
10/19	10/19	10/19	10/19	MM (INCH)
144.23	0	164.9	0	MM (INCH)
6622	0	7456	0	(1586.35) (62.86)

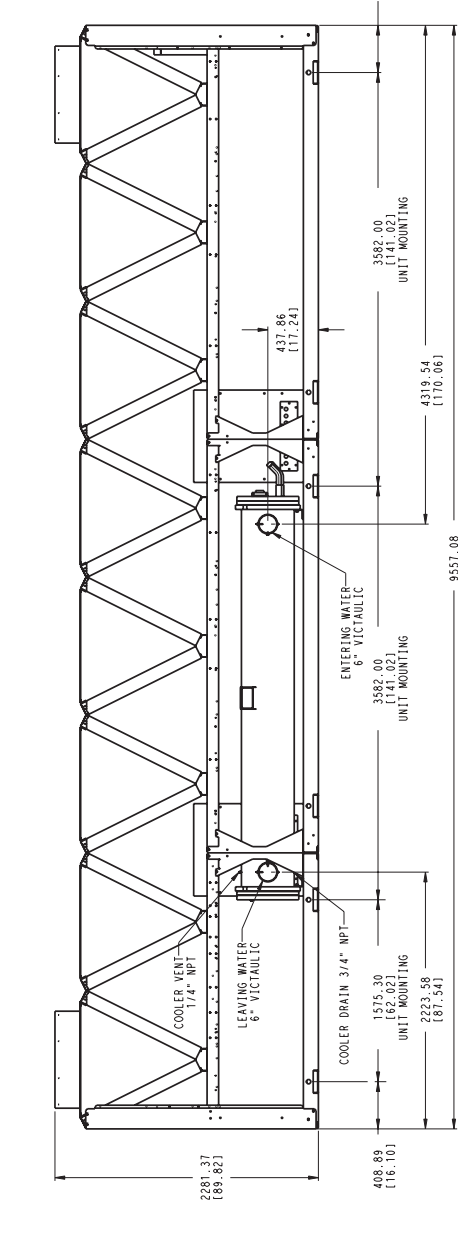
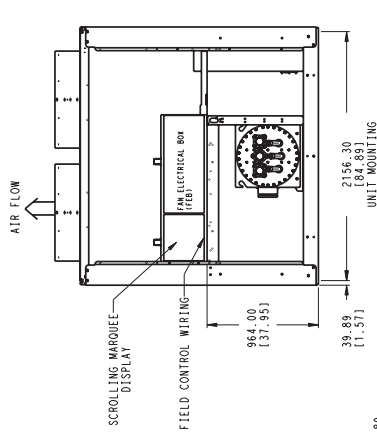
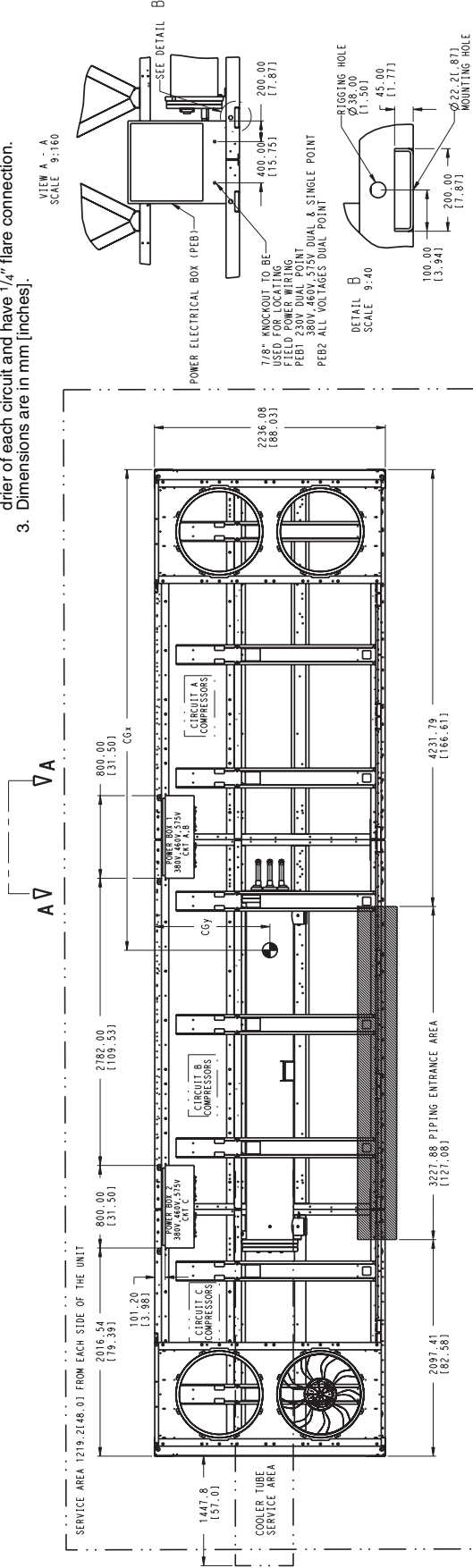
# Dimensions (cont)



## 30RB275 AIR-COOLED CHILLER

### NOTES:

- Unit must have clearances as follows:  
Top — Do not restrict.  
Sides and End — 6" from solid surface.
- Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have 1/4" flare connection.
- Dimensions are in mm [inches].

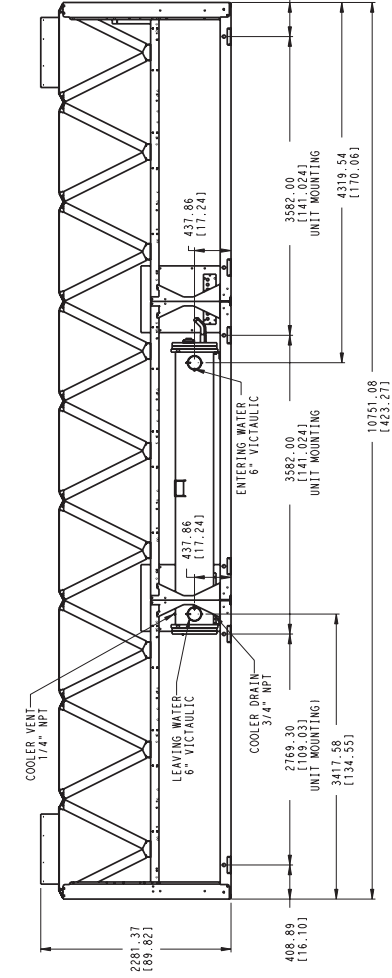
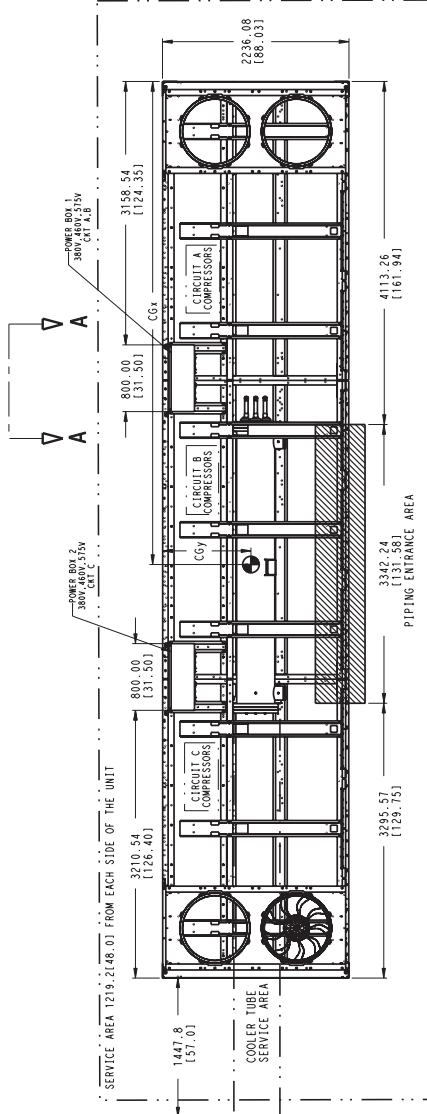
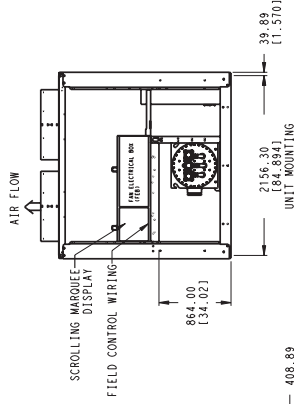
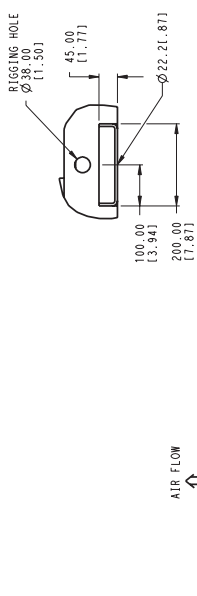
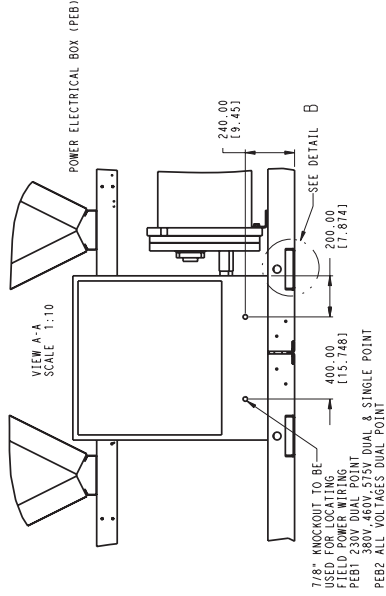


WEIGHT	MAX WEIGHT	MAX WEIGHT	CENTER OF GRAVITY	
			CGx	CGy
CU/AL	CU/AL	CU/AL	MM [INCH]	MM [INCH]
lb/kg	lb/kg	lb/kg	MM [INCH]	MM [INCH]
16200	18129	0	4857	914
7348	8223	0	[191.22]	[35.98]



### 30RB300 AIR-COOLED CHILLER

- NOTES:**
- Unit must have clearances as follows:
    - Top — Do not restrict.
    - Sides and End — 6" from solid surface.
  - Temperature relief devices located on suction line, liquid line and filter drier of each circuit and have 1/4" flare connection.
  - Dimensions are in mm [inches].



	WEIGHT CU/L lb/kg	MAX WEIGHT PUMP lb/kg	WEIGHT lb/kg	MAX WEIGHT CU/CU PUMP lb/kg	CENTER OF GRAVITY	
					CGx MM [INCH]	CGy MM [INCH]
30RB-300	17591 7979	0	8964	1962	5317	916 [36.06]

# Selection procedure



Carrier's Packaged Chiller Builder Program provides quick, easy selection of Carrier's air-cooled liquid chillers. The program considers specific temperature, fluid and flow requirements among other factors such as fouling and altitude corrections.

Before selecting a chiller, consider the following points:

## Leaving Water Temperature (LWT)

- If the LWT is less than 40 F (4.4 C), loop freeze protection to a minimum of 30° F (16.6° C) below the LWT set point is required. The medium temperature brine option is also required.
- If the LWT requirement is greater than 60 F (16 C), a mixing loop is required.

## Entering Water Temperature (EWT)

- If the EWT requirement is greater than 85 F (29 C), a mixing loop is required. The EWT cannot exceed 85 F (29 C) for extended operation. Pulldown can be accomplished from 95 F (35 C).

## Cooler Flow Rate or Cooler Delta-T

- The cooler delta-T must fall between 5 and 20° F (3 and 11° C).
- For larger or smaller delta-T applications, a mixing loop is required.
- If the cooler flow is variable and the rate of change of flow should not exceed 10% per minute, a loop volume of greater than 3 gallons per ton is recommended.

## Cooler Pressure Drop

- A high cooler pressure drop can be expected when the cooler delta-T is low. A mixing loop can help to alleviate this situation.

## Water Quality, Fouling factor

- Poor water quality can increase the cooler fouling.
- Higher than standard fouling factors lead to lower capacity and higher input kW from a given chiller size compared to running the same application with better quality water (and lower fouling factors).

## Operation below 32 F (0° C)

- Low ambient head pressure control is required.
- Consider wind baffles if average wind speed is greater than 5 mph.
- Consider higher loop volumes, 6 to 10 gallons per nominal ton.
- Loop freeze protection with glycol is strongly recommended to a minimum of 15° F (8° C) below lowest anticipated ambient temperature.

- Cooler Heater option is required if no glycol is used.
- Chilled water pump control is strongly recommended; otherwise override capability is required.
- Consider the Remote Cooler Option.

## Chiller idle below 32 F (0° C)

- Loop freeze protection with glycol is strongly recommended to a minimum of 15° F (8° C) below lowest anticipated ambient temperature.
- Cooler Heater option is required if no glycol is used.
- Chilled water pump control is strongly recommended; otherwise override capability is required.
- Drain the cooler — This will require a small amount of glycol for residual water. Cooler heaters (if provided) will need to be disconnected.
- Consider the Remote Cooler Option.

Highest allowable ambient air temperature is 125 F (52 C).

## Cooling Capacity Requirement

- Do not oversize the chillers by more than 15% at design conditions.
- If close capacity control is required below the standard minimum step of unloading, the Minimum Load Control option should be employed.

## Coil Corrosion Requirements

- Coastal Application
- Industrial Application
- Coastal/industrial Application
- Urban Application
- Farming

## Chilled Water Pump External Head Requirement

## Capacity Control

- Temperature Reset
- Return Water Reset
- Outside Air Temperature Reset
- Space Temperature Reset
- 4 to 20 mA Temperature Reset (requires an Energy Management Module)

## Demand Limit

- 2-step (requires an Energy Management Module)
- 4 to 20 mA (requires an Energy Management Module)
- CCN Loadshed

To select a chiller, use the Packaged Chiller Builder Program or follow one of the procedures starting on page 29.



**ENGLISH**

**I Determine 30RB unit size and operating conditions required to meet given capacity at given conditions.**

Given:

- Capacity . . . . . 126 Tons
- Leaving Chilled Water Temp (LCWT) . . . . . 44 F
- Cooler Water Temp Rise . . . . . 10° F
- Condenser Entering Air Temp . . . . . 95 F
- Fouling Factor (Cooler) . . . . . 0.00010
- External System Pressure Drop . . . . . 40 ft wg (118 kPa)

NOTE: For other than 10° F (5.6° C) temperature rise, unit selection must be made using the chiller program in the electronic catalog.

**II From Chiller Ratings table on page 40 and pressure drop curves on page 31, determine operating data for selected unit.**

- Unit . . . . . 30RB130
- Capacity . . . . . 127.3 Tons
- Power Input . . . . . 158.3 kW
- Cooler Water Flow . . . . . 304.3 gpm
- Pressure Drop . . . . . 12.7 ft of water

**SI**

**I Determine unit size and operating conditions required to meet given capacity at given conditions.**

Given:

- Capacity . . . . . 270 kW
- Leaving Chilled Water Temp (LCWT) . . . . . 7 C
- Cooler Water Temp Rise . . . . . 5.6° C
- Condenser Entering Air Temp . . . . . 35 C
- Fouling Factor (Cooler) . . . . . 0.018
- External System Pressure Drop . . . . . 200 kPa

NOTE: For other than approx. 5 to 6° C temperature rise, unit selection must be made using the chiller program in the electronic catalog.

**II From Chiller Ratings table on page 43 and pressure drop curves on page 31, determine operating data for selected unit.**

- Unit . . . . . 30RB080
- Capacity . . . . . 270.3 kW
- Power Input . . . . . 95.7 kW
- Cooler Water Flow . . . . . 11.6 L/s
- Pressure Drop . . . . . 22.4 kPa

**PUMP IMPELLER SIZES**

UNIT 30RB	PUMP Hp	SINGLE PUMP				DUAL PUMP			
		Option Code*	Rpm	Impeller Dia. (in.)	Pump Curve	Option Code*	Rpm	Impeller Dia. (in.)	Pump Curve
060 070	3	0	1750	6.5	I	6	1750	6.5	V
	5	1	1750	7.3	I	7	1750	7.3	V
	7.5	2	1750	8.15	I	8	1750	8.15	V
						9	3450	5.25	VI
10	3	3450	5.4	II	B	3450	5.9	VI	
080 090 100	5	1	1750	7.3	I	7	1750	7.3	V
	7.5	2	1750	8.15	I	8	1750	8.15	V
	10	3	3450	5.4	II	B	3450	5.4	VII
	15	4	3450	6.1	II	C	3450	6.1	VII
110 120 130	5	1	1750	7.3	I	7	1750	7.3	V
	7.5	2	1750	8.15	I	8	1750	8.15	V
	10	3	3450	5.4	II	B	3450	5.4	VII
	15	4	3450	6.1	II	C	3450	6.1	VII
150 160 170 190	5	1	1750	6.5	III	—	—	—	—
	7.5	2	3450	4.6	IV	9	3450	4.6	VIII
	10	3	3450	5.0	IV	B	3450	5.0	VIII
	15	4	3450	5.5	IV	C	3450	5.5	VIII

\*Option Code refers to the Hydronics Option (position 11) in the model number. See the 30RB nomenclature on page 4 for option identification.

NOTE: Pump Selections are chiller size dependent. For example, dual pump "C" on a 30RB170 chiller is not the same as dual pump "C" on a 30RB130 chiller.

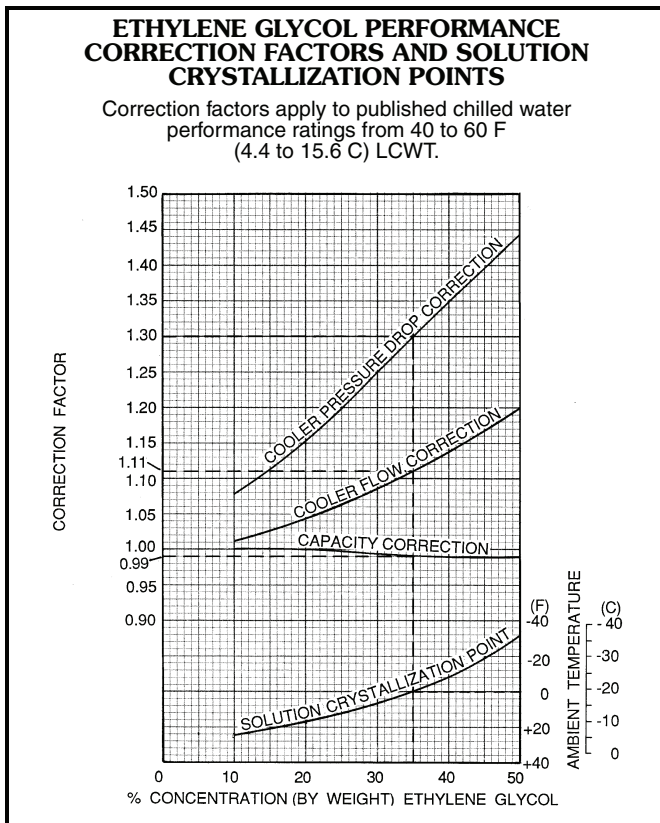
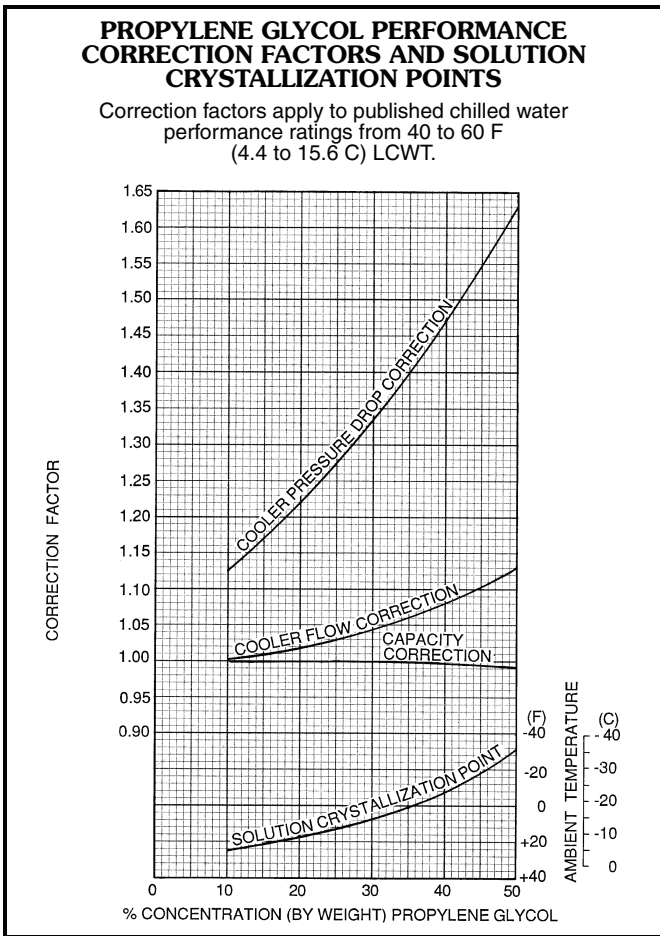
# Selection procedure (cont)



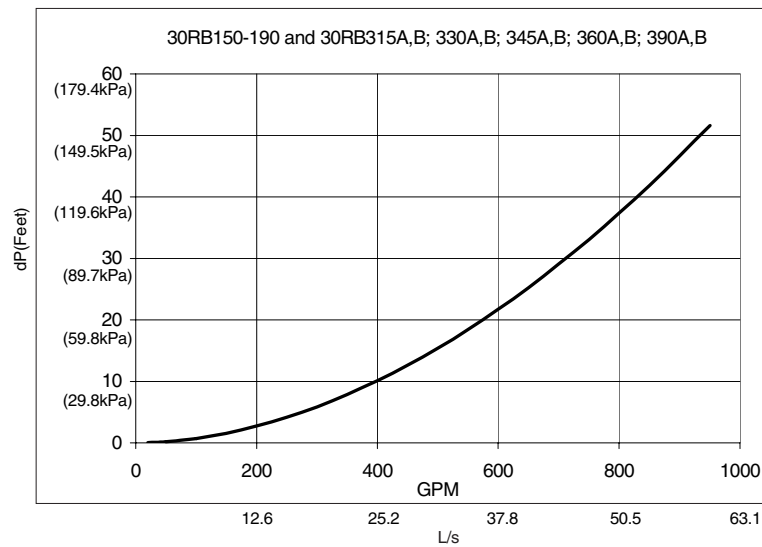
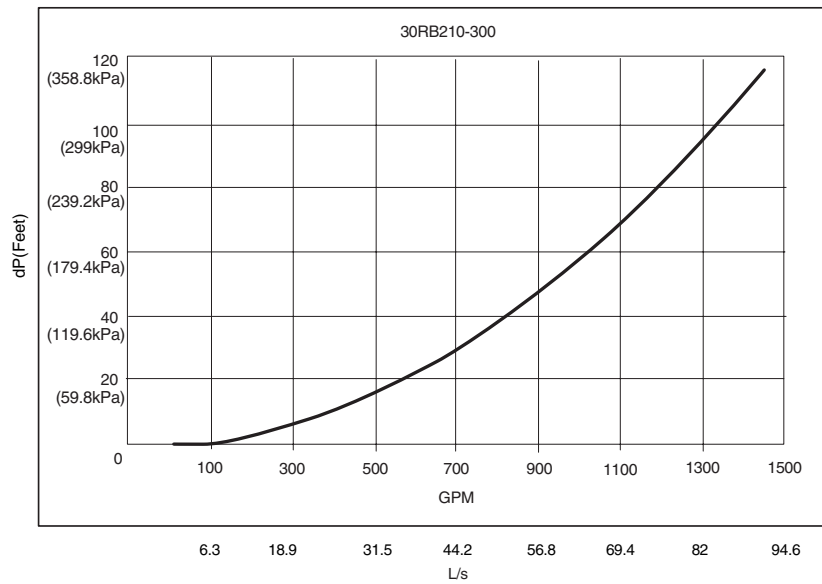
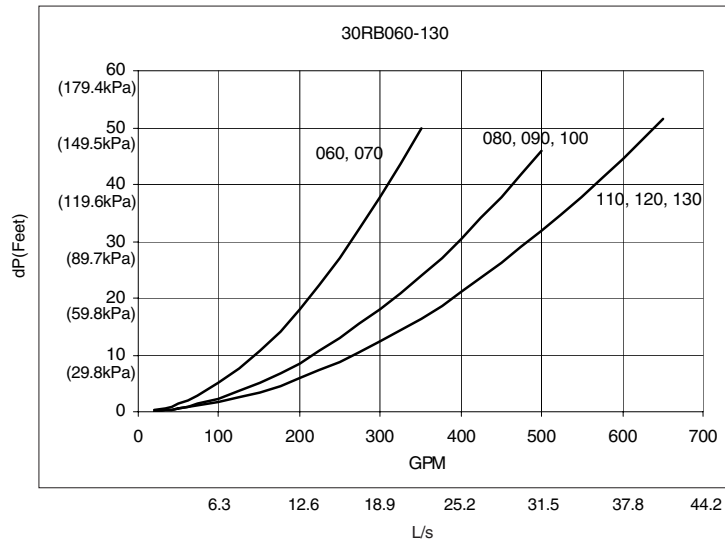
## AquaSnap® pump selection

Several pump sizes are available for each AquaSnap chiller size to provide flexibility in matching water system requirements. A dual pump option is also available for primary/standby operation. The Carrier Packaged Chiller Builder Program must be used for pump selection.

Proper water system design is critical; cooling loads, water pressure drops and proper water line sizing must be accounted for in order to ensure proper system operation. Incorrect or incomplete analysis/design of the water loop could lead to low water flow, loss of water temperature control, and excessive cycling of chiller compressors.



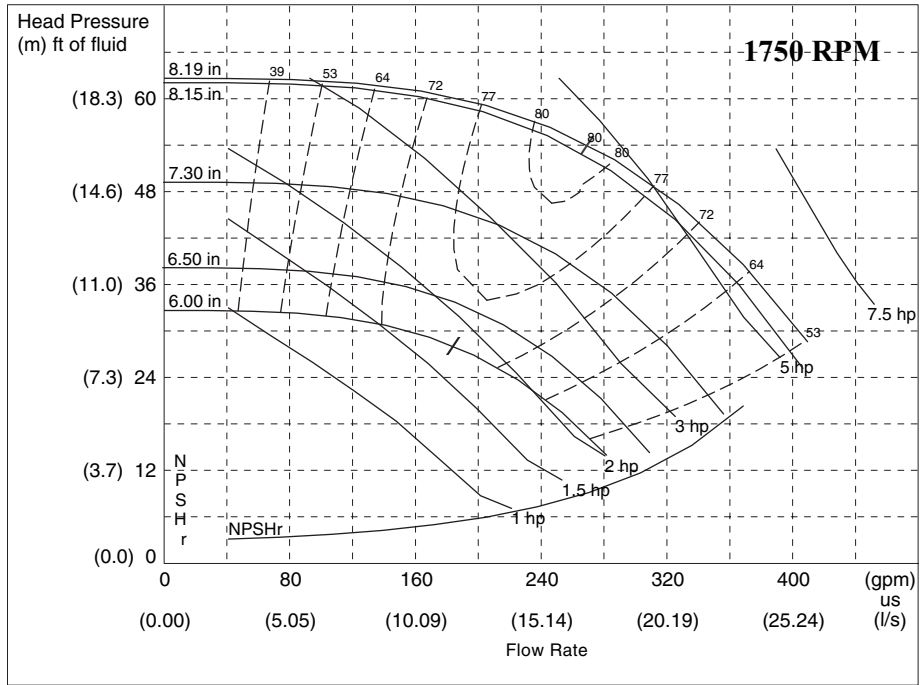
### COOLER PRESSURE DROP CURVES



# Selection procedure (cont)



**PUMP CURVE I FOR HYDRONIC PACKAGE SINGLE PUMP (Fresh Water)**

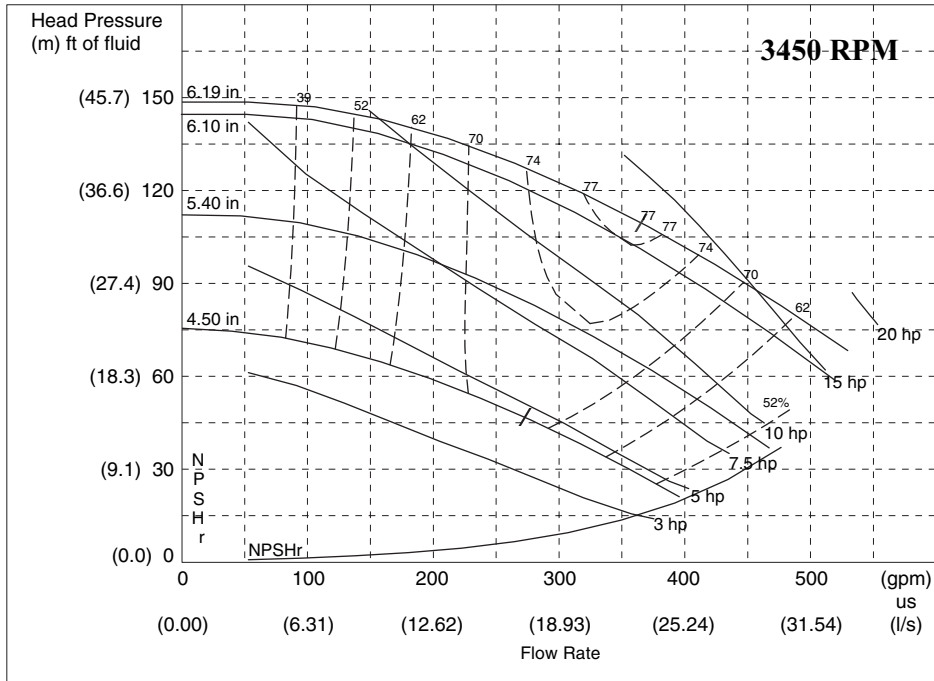


**LEGEND**

**NPSHr** — Net Positive Suction Head (Pressure) Required

NOTE: Refer to the 30RB nomenclature on page 4 for option identification. Refer to the Pump Impeller Sizes table on page 29 for more information.

**PUMP CURVE II FOR HYDRONIC PACKAGE SINGLE PUMP (Fresh Water)**



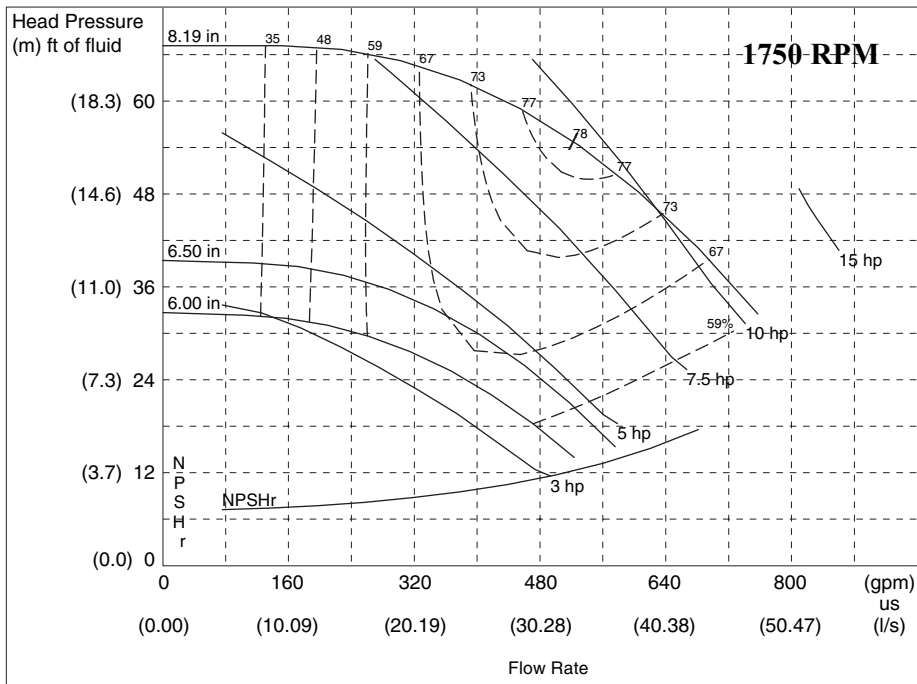
**LEGEND**

**NPSHr** — Net Positive Suction Head (Pressure) Required

NOTE: Refer to the 30RB nomenclature on page 4 for option identification. Refer to the Pump Impeller Sizes table on page 29 for more information.



### PUMP CURVE III FOR HYDRONIC PACKAGE SINGLE PUMP (Fresh Water)

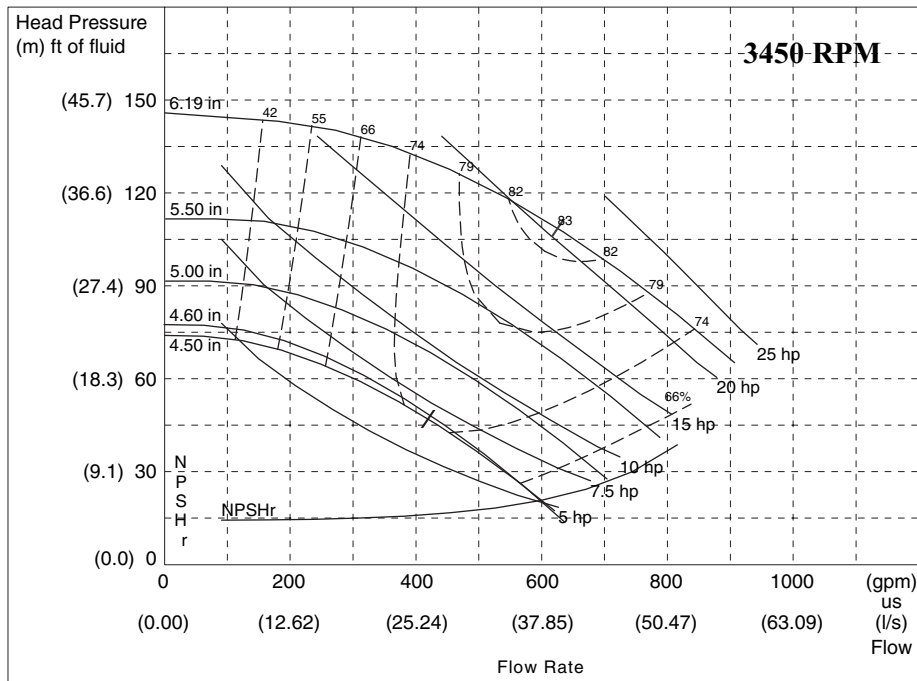


**LEGEND**

**NPSHr** — Net Positive Suction Head (Pressure) Required

NOTE: Refer to the 30RB nomenclature on page 4 for option identification. Refer to the Pump Impeller Sizes table on page 29 for more information.

### PUMP CURVE IV FOR HYDRONIC PACKAGE SINGLE PUMP (Fresh Water)



**LEGEND**

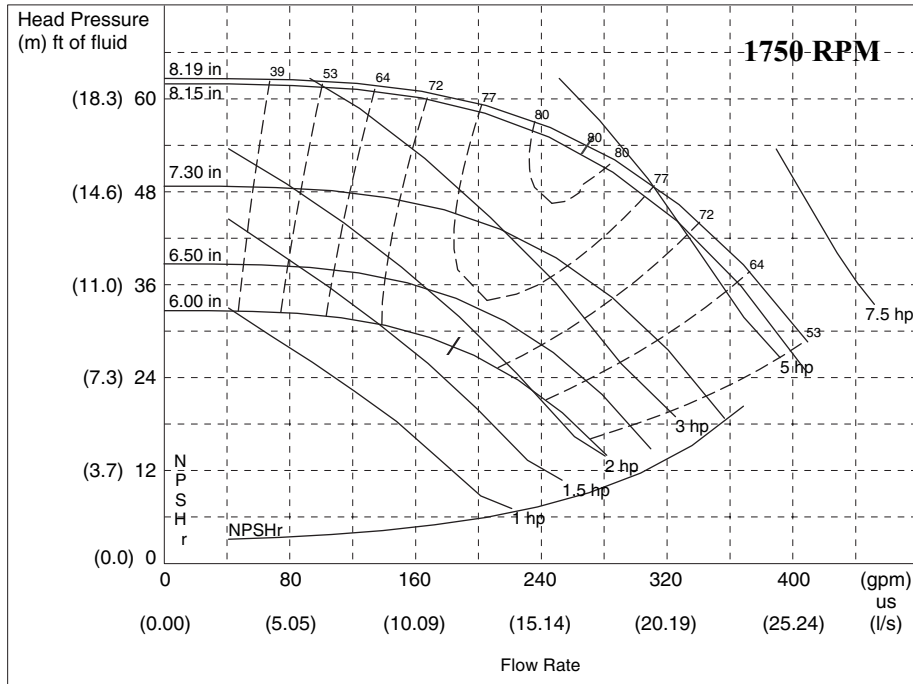
**NPSHr** — Net Positive Suction Head (Pressure) Required

NOTE: Refer to the 30RB nomenclature on page 4 for option identification. Refer to the Pump Impeller Sizes table on page 29 for more information.

# Selection procedure (cont)



**PUMP CURVE V FOR HYDRONIC PACKAGE DUAL PUMP (Fresh Water)**

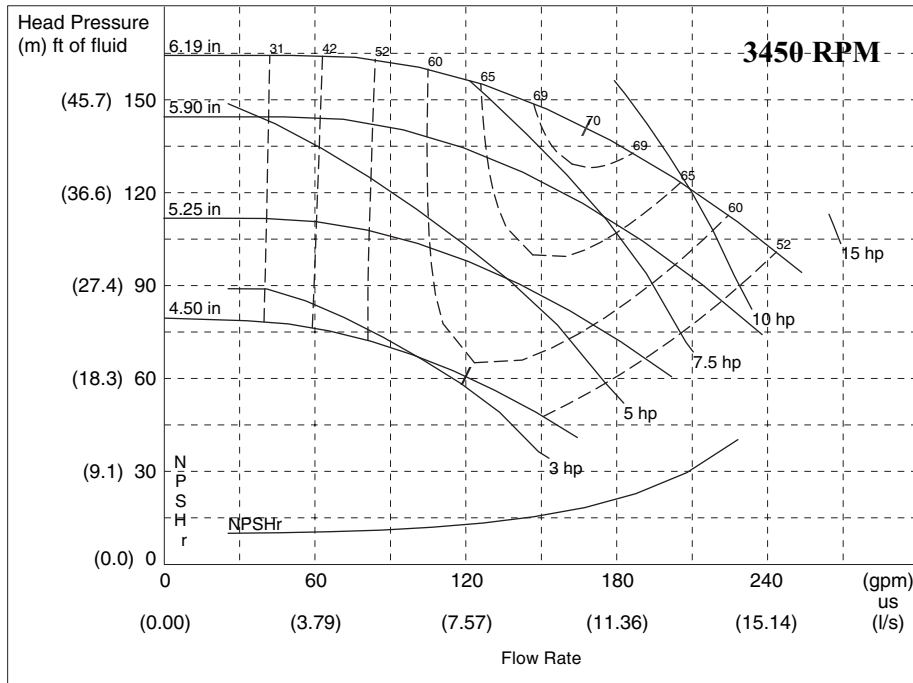


**LEGEND**

**NPSHr** — Net Positive Suction Head (Pressure) Required

NOTE: Refer to the 30RB nomenclature on page 4 for option identification. Refer to the Pump Impeller Sizes table on page 29 for more information.

**PUMP CURVE VI FOR HYDRONIC PACKAGE DUAL PUMP (Fresh Water)**

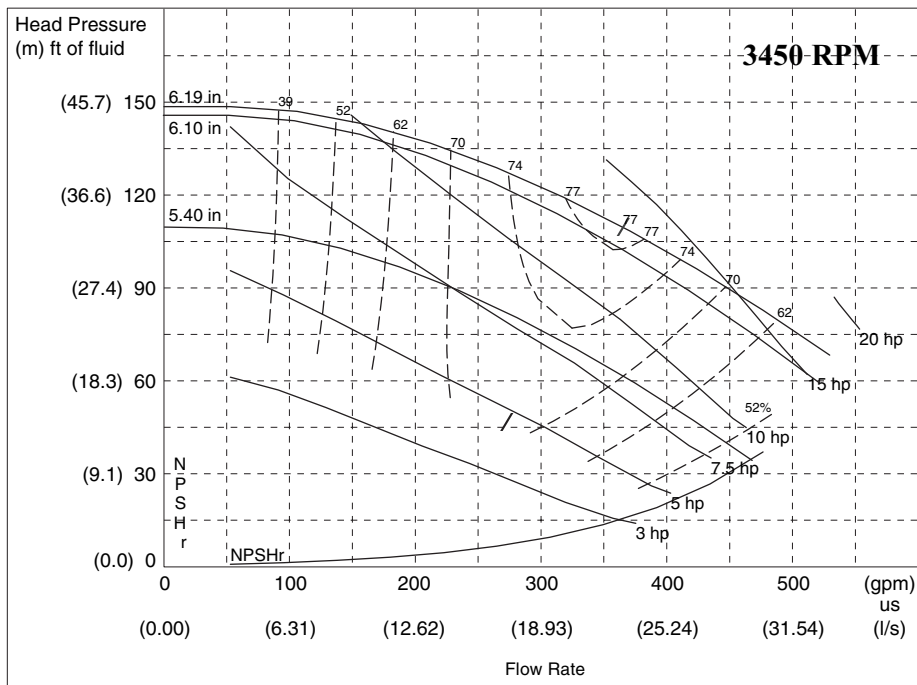


**LEGEND**

**NPSHr** — Net Positive Suction Head (Pressure) Required

NOTE: Refer to the 30RB nomenclature on page 4 for option identification. Refer to the Pump Impeller Sizes table on page 29 for more information.

### PUMP CURVE VII FOR HYDRONIC PACKAGE DUAL PUMP (Fresh Water)

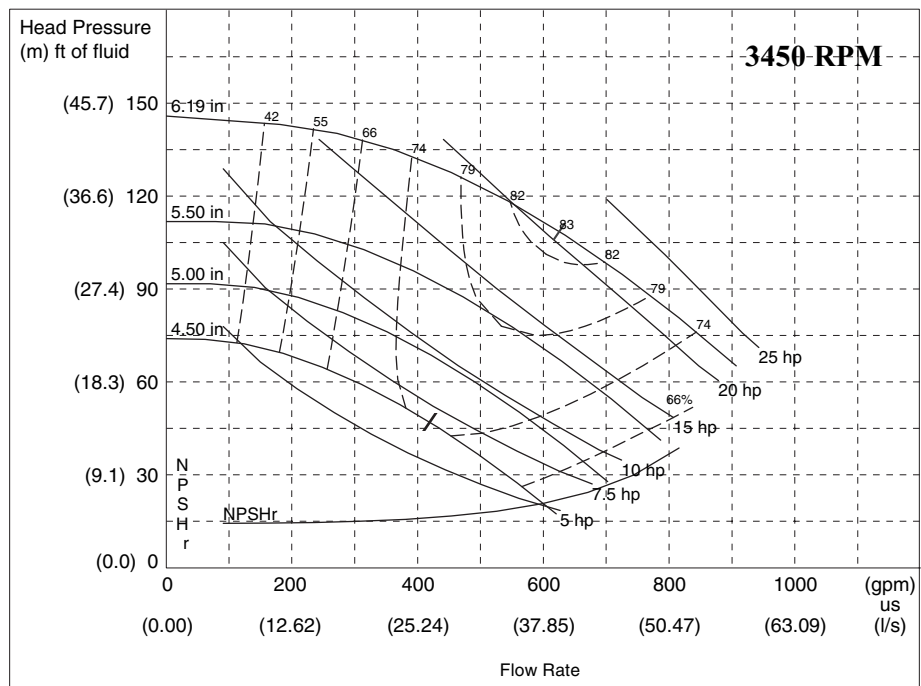


**LEGEND**

**NPSHr** — Net Positive Suction Head (Pressure) Required

NOTE: Refer to the 30RB nomenclature on page 4 for option identification. Refer to the Pump Impeller Sizes table on page 29 for more information.

### PUMP CURVE VIII FOR HYDRONIC PACKAGE DUAL PUMP (Fresh Water)



**LEGEND**

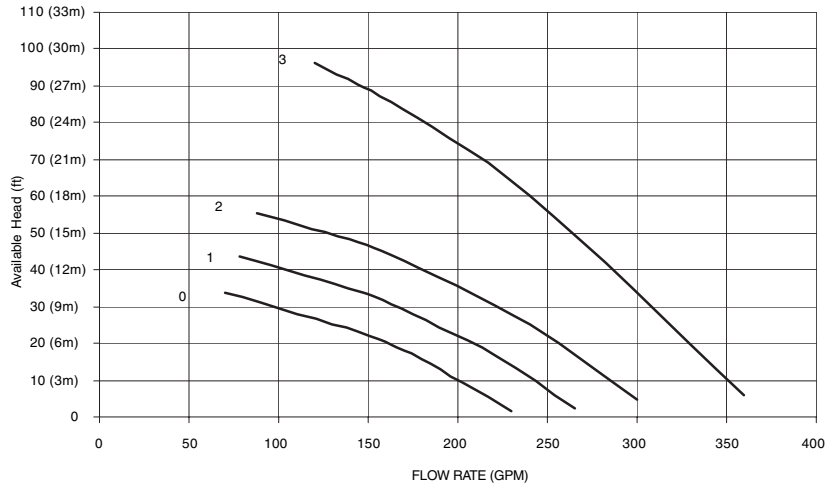
**NPSHr** — Net Positive Suction Head (Pressure) Required

NOTE: Refer to the 30RB nomenclature on page 4 for option identification. Refer to the Pump Impeller Sizes table on page 29 for more information.

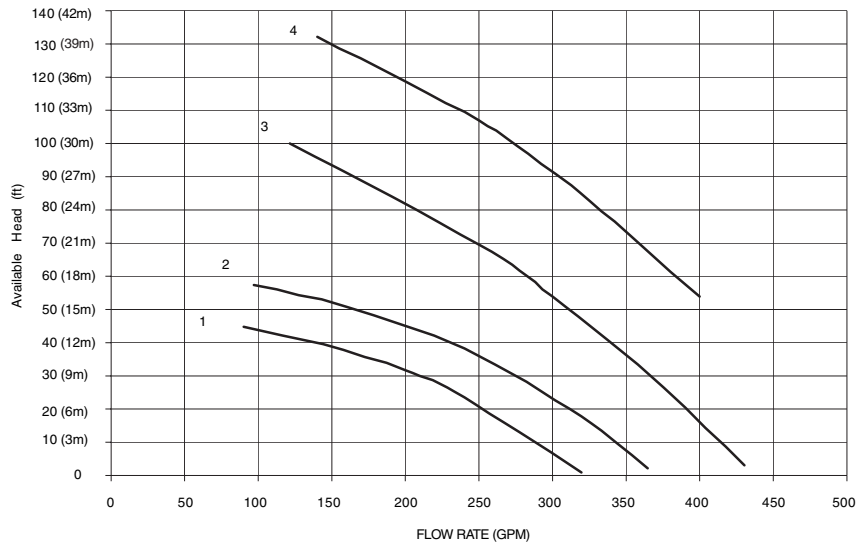
# Selection procedure (cont)



## 30RB060, 070 — SINGLE PUMP ENVELOPE CURVES

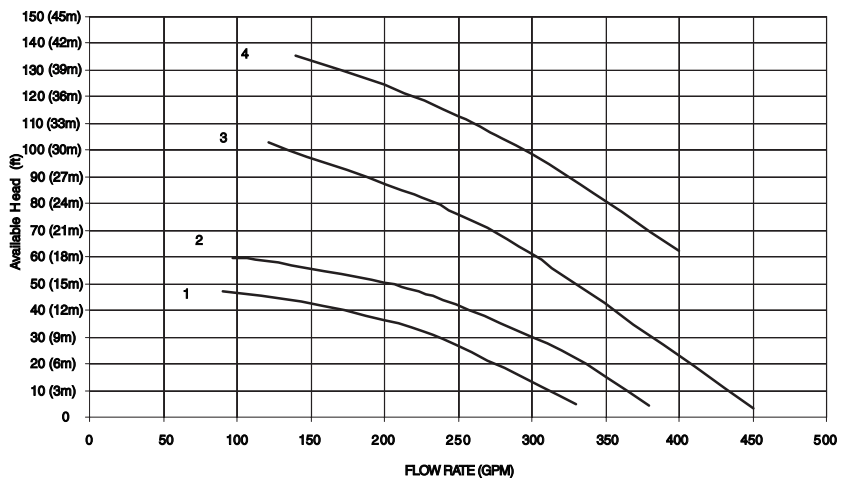


## 30RB080, 090, 100 — SINGLE PUMP ENVELOPE CURVES

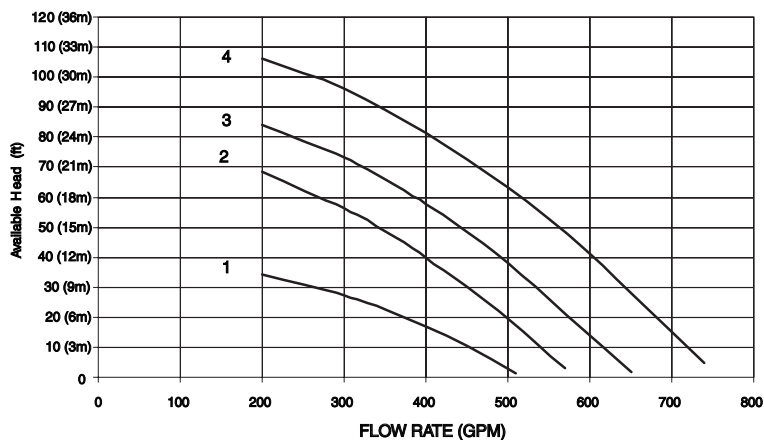


NOTE: Refer to the 30RB nomenclature on page 4 for pump envelope curve option identification.

### 30RB110, 120, 130 — SINGLE PUMP ENVELOPE CURVES



### 30RB150, 160, 170, 190 — SINGLE PUMP ENVELOPE CURVES

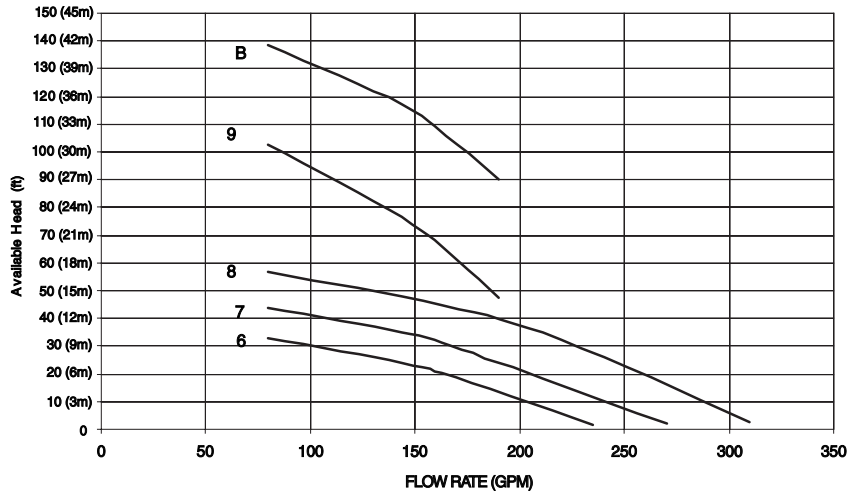


NOTE: Refer to the 30RB nomenclature on page 4 for pump envelope curve option identification.

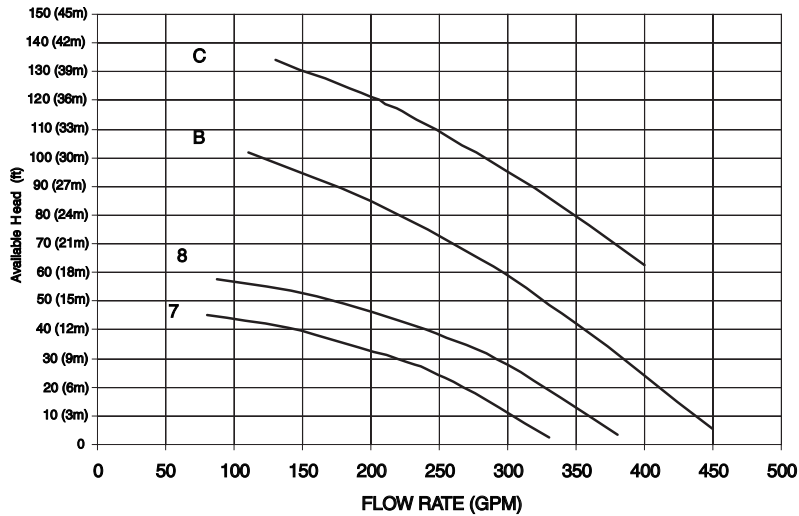
# Selection procedure (cont)



**30RB060, 070 —  
DUAL PUMP ENVELOPE CURVES**



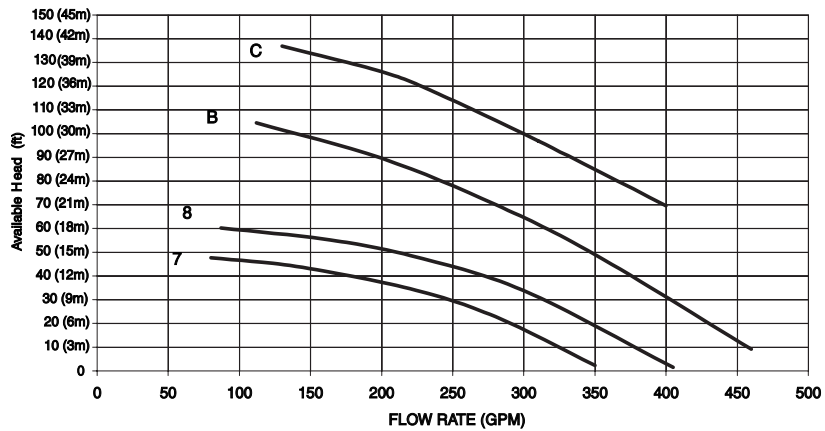
**30RB080, 090, 100 —  
DUAL PUMP ENVELOPE CURVES**



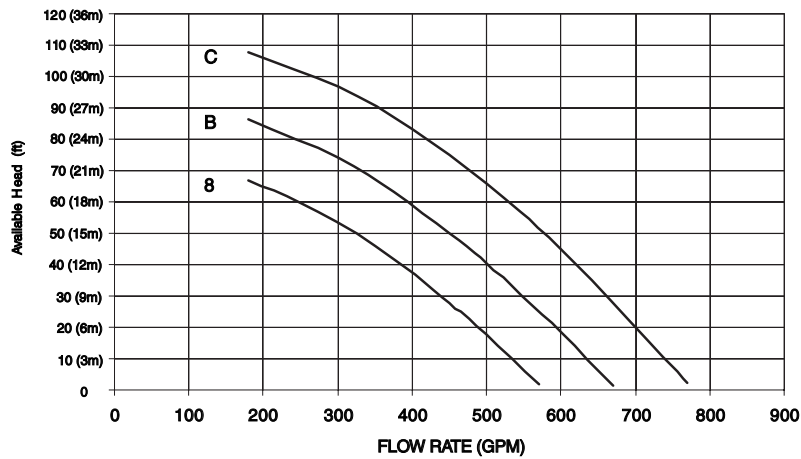
NOTE: Refer to the 30RB nomenclature on page 4 for pump envelope curve option identification.



### 30RB110, 120, 130 — DUAL PUMP ENVELOPE CURVES



### 30RB150, 160, 170, 190 — DUAL PUMP ENVELOPE CURVES



NOTE: Refer to the 30RB nomenclature on page 4 for pump envelope curve option identification.

# Performance data



## 30RB PACKAGED AIR-COOLED CHILLER RATINGS TABLE — ENGLISH

LCWT (F)	UNIT SIZE	CONDENSER ENTERING AIR TEMPERATURE (F)														
		85			95			105			115			120		
		Cap. (Tons)	Input kW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input kW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input kW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input kW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input kW	Cooler Flow Rate (gpm)
40	30RB060	56.4	63.4	134.8	52.9	69.2	126.4	49.1	75.8	117.3	45.1	83.2	107.6	42.9	87.2	102.5
	30RB070	65.9	74.9	157.4	61.8	81.9	147.7	57.5	89.8	137.4	52.8	98.5	126.2	50.3	103.3	120.1
	30RB080	75.0	85.1	179.2	70.1	93.1	167.4	64.9	102.1	154.9	59.2	112.1	141.3	56.2	117.6	134.1
	30RB090	85.5	96.0	204.1	80.3	104.9	191.7	74.7	114.8	178.3	68.6	125.9	163.8	65.3	131.8	156.0
	30RB100	94.9	107.6	226.6	89.1	117.6	212.8	83.0	128.8	198.2	76.3	141.3	182.3	72.7	148.0	173.7
	30RB110	104.6	118.3	249.7	98.0	129.5	234.2	91.1	142.2	217.4	83.6	156.3	199.7	79.7	164.0	190.2
	30RB120	117.4	132.4	280.3	110.3	144.8	263.3	102.6	158.7	244.9	94.2	174.0	224.9	89.7	182.3	214.2
	30RB130	125.9	142.3	300.7	118.2	155.4	282.2	109.9	170.1	262.4	100.8	186.4	240.7	95.9	195.2	229.0
	30RB150	142.8	160.7	340.9	133.9	175.5	319.9	124.4	192.0	297.1	114.0	210.4	272.2	108.3	220.2	258.7
	30RB160	150.7	169.6	359.8	141.6	185.1	338.1	131.7	202.4	314.6	121.0	221.7	288.8	115.1	232.1	274.9
	30RB170	164.3	186.9	392.2	154.4	204.1	368.6	143.5	223.3	342.6	131.6	244.6	314.1	125.2	256.0	299.0
	30RB190	185.9	212.8	443.8	174.7	232.1	417.1	162.7	253.8	388.4	149.5	277.8	356.9	142.3	290.7	339.7
	30RB210	199.1	223.2	475.4	187.2	243.8	446.9	174.1	266.8	415.8	159.8	292.4	381.6	152.1	306.1	363.1
	30RB225	211.6	240.2	505.2	198.9	262.5	475.2	185.0	287.4	441.7	169.8	315.0	405.3	161.5	329.8	385.6
	30RB250	235.0	267.3	561.1	221.0	292.0	527.7	205.6	319.5	490.5	188.8	350.0	450.8	179.7	366.4	429.1
	30RB275	257.0	292.5	613.8	241.8	319.2	577.5	225.3	349.3	538.1	207.0	382.4	494.5	197.1	400.3	470.5
	30RB300	279.2	319.1	666.6	262.7	348.1	627.2	244.8	380.7	584.5	225.2	416.9	537.8	214.5	436.3	512.3
	30RB315	301.4	339.2	719.6	283.0	370.2	676.2	263.4	404.8	629.2	242.0	443.4	577.6	230.2	464.2	549.8
	30RB330	315.0	356.5	752.0	296.0	389.2	706.7	275.2	445.0	631.4	246.7	466.3	602.9	240.3	488.1	573.9
	30RB345	328.6	373.8	784.4	309.0	408.2	737.2	287.0	446.6	685.2	263.2	489.2	628.2	250.4	512.0	598.0
30RB360	350.2	399.7	836.0	329.0	436.2	785.7	306.2	477.1	731.0	281.1	522.4	671.0	267.5	546.7	638.7	
30RB390	371.8	425.6	887.6	349.0	464.2	834.2	325.4	507.6	776.8	297.0	555.6	713.8	284.6	581.4	679.4	
42	30RB060	58.6	64.0	140.1	55.0	69.8	131.4	51.1	76.4	122.1	46.9	83.8	112.0	44.6	87.8	106.7
	30RB070	68.4	75.7	163.3	64.2	82.7	153.3	59.7	90.6	142.7	54.9	99.4	131.2	52.3	104.2	125.0
	30RB080	78.1	86.1	186.5	72.9	94.1	174.3	67.5	103.2	161.3	61.6	113.3	147.2	58.5	118.7	139.8
	30RB090	88.7	96.9	211.9	83.3	105.7	199.1	77.6	115.7	185.3	71.3	126.8	170.3	67.9	132.8	162.2
	30RB100	98.4	108.5	235.2	92.4	118.6	220.8	86.1	129.9	205.7	79.2	142.4	189.4	75.5	149.1	180.5
	30RB110	108.5	119.6	259.2	101.8	130.8	243.2	94.6	143.5	226.0	86.9	157.7	207.6	82.7	165.3	197.8
	30RB120	121.7	133.8	290.7	114.4	146.1	273.3	106.5	160.1	254.5	97.8	175.5	233.7	93.1	183.8	222.7
	30RB130	130.6	143.7	312.2	122.7	156.8	293.1	114.1	171.6	272.6	104.8	188.0	250.3	99.7	196.8	238.2
	30RB150	148.2	162.4	354.0	139.1	177.3	332.3	129.2	194.0	308.8	118.4	212.4	283.0	112.6	222.3	269.1
	30RB160	156.6	171.3	374.2	147.2	186.9	351.8	137.0	204.3	327.4	125.9	223.7	300.7	119.8	234.1	286.3
	30RB170	170.6	188.8	407.5	160.3	206.1	383.0	149.1	225.4	356.3	136.9	246.8	327.0	130.2	258.3	311.1
	30RB190	193.1	214.9	461.4	181.5	234.4	433.8	169.1	256.2	404.0	155.5	280.4	371.5	148.0	293.3	353.7
	30RB210	206.8	225.5	493.9	194.4	246.2	464.6	181.0	269.4	432.4	166.2	295.1	397.1	158.2	308.9	378.0
	30RB225	219.6	242.8	524.7	206.5	265.2	493.0	192.2	290.3	459.1	176.4	318.0	421.5	167.9	332.9	401.2
	30RB250	243.7	270.1	582.3	229.3	294.9	548.0	213.5	322.6	510.2	196.2	353.3	468.7	186.8	369.7	446.2
	30RB275	266.6	295.4	637.1	250.9	322.3	599.5	233.9	352.5	558.8	215.0	385.9	513.8	204.8	403.8	489.2
	30RB300	289.6	322.2	692.0	272.5	351.5	651.2	254.1	384.2	607.1	233.9	420.6	558.8	222.9	440.1	532.7
	30RB315	313.2	342.6	748.4	294.4	373.8	703.6	274.0	408.6	654.8	251.8	447.4	601.4	239.6	468.2	572.6
	30RB330	327.2	360.1	781.7	307.5	393.0	734.8	286.2	429.7	683.7	262.7	470.5	627.8	250.0	492.4	597.4
	30RB345	341.1	377.6	815.1	321.0	412.2	766.0	298.3	450.9	712.7	273.7	493.7	654.1	260.4	516.7	622.3
30RB360	363.7	403.7	868.9	341.8	440.5	816.8	318.2	481.6	760.3	292.3	527.2	698.5	278.2	551.7	664.8	
30RB390	386.2	429.9	922.8	363.0	468.8	867.5	338.1	512.4	807.9	310.9	560.7	742.9	296.0	586.7	707.4	
44	30RB060	60.8	64.8	145.3	57.1	70.5	136.6	53.1	77.1	126.9	48.7	84.5	116.5	46.4	88.5	111.0
	30RB070	70.8	76.5	169.4	66.5	83.5	159.1	61.9	91.5	148.0	57.0	100.3	136.3	54.3	105.1	129.8
	30RB080	81.3	87.2	194.3	76.0	95.3	181.6	70.2	104.4	167.9	64.1	114.5	153.3	60.8	119.9	145.5
	30RB090	92.0	98.1	220.1	86.5	106.7	206.8	80.6	116.6	192.6	74.0	127.7	177.0	70.5	133.7	168.6
	30RB100	101.9	109.8	243.9	95.8	119.6	229.1	89.2	131.0	213.4	82.2	143.6	196.6	78.4	150.3	187.5
	30RB110	112.3	121.0	268.6	105.5	132.2	252.3	98.1	144.8	234.6	90.1	159.0	215.5	85.9	166.7	205.4
	30RB120	126.0	135.4	301.3	118.5	147.7	283.2	110.4	161.5	264.0	101.5	177.1	242.7	96.7	185.4	231.3
	30RB130	135.5	145.1	324.0	127.3	158.3	304.3	118.4	173.1	283.1	108.8	189.6	260.2	103.6	198.5	247.7
	30RB150	153.9	164.3	368.0	144.5	179.3	345.4	134.2	196.0	320.9	123.0	214.5	294.2	117.0	224.4	279.8
	30RB160	162.7	173.0	388.9	153.1	188.7	366.0	142.5	206.2	340.6	130.9	225.6	313.0	124.7	236.1	298.1
	30RB170	177.1	190.8	423.5	166.5	208.2	398.1	155.0	227.7	370.6	142.3	249.2	340.2	135.4	260.7	323.7
	30RB190	200.6	217.2	479.3	188.6	236.7	450.9	175.6	258.7	419.9	161.5	283.0	386.2	153.9	296.0	368.0
	30RB210	214.7	227.9	513.2	201.9	248.7	482.5	188.0	272.0	449.4	172.7	297.8	412.9	164.4	311.7	393.1
	30RB225	228.0	245.5	545.1	214.4	268.1	512.5	199.5	293.3	476.7	183.2	321.1	438.1	174.4	336.0	416.9
	30RB250	252.9	273.0	604.6	238.0	298.0	569.0	221.8	325.8	530.2	203.7	356.6	486.7	194.0	373.2	463.9
	30RB275	276.6	298.5	661.3	260.3	325.6	622.4	242.7	355.9	580.2	223.3	389.5	533.9	212.7	407.5	508.6
	30RB300	300.4	325.5	718.2	282.7	354.9	675.9	263.6	387.8	630.3	242.7	424.4	580.3	231.4	444.0	553.4
	30RB315	325.3	346.0	777.8	306.0	377.4	731.9	284.9	412.4	681.3	261.8	451.3	626.0	249.3	472.2	596.1
	30RB330	339.8	363.8	812.4	319.6	396.9	764.0	297.5	433.9	711.2	273.2	474.8	653.2	260.0	496.8	621.7
	30RB345	354.3	381.7	847.0	333.0	416.5	796.2	310.0	455.4	741.2	284.6	498.4	680.4	270.8	521.4	647.4
30RB360	377.7	408.0	902.8	355.1	445.0	849.0	330.6	486.4	790.5	303.8	532.2	726.4	289.3	556.7	691.7	
30RB390	401.2	434.4	958.5	377.2	473.5	901.8	351.3	517.3	839.9	323.1	565.9	772.5	307.8	592.0	736.1	

**LEGEND**

LCWT — Leaving Chilled Water Temperature



**30RB PACKAGED AIR-COOLED CHILLER RATINGS TABLE — ENGLISH (cont)**

LCWT (F)	UNIT SIZE	CONDENSER ENTERING AIR TEMPERATURE (F)														
		85			95			105			115			120		
		Cap. (Tons)	Input kW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input kW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input kW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input kW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input kW	Cooler Flow Rate (gpm)
46	30RB060	63.1	65.7	151.0	59.3	71.5	141.9	55.2	77.9	132.1	50.7	85.2	121.2	48.3	89.2	115.5
	30RB070	73.4	77.6	175.5	68.9	84.5	164.9	64.2	92.4	153.6	59.1	101.3	141.4	56.3	106.1	134.8
	30RB080	84.5	88.4	202.2	79.1	96.5	189.3	73.2	105.7	175.2	66.8	115.8	159.9	63.4	121.3	151.8
	30RB090	95.4	99.4	228.3	89.7	108.0	214.6	83.6	117.7	200.0	76.9	128.7	184.1	73.3	134.7	175.4
	30RB100	105.5	111.2	252.5	99.2	121.0	237.4	92.5	132.1	221.3	85.2	144.7	203.9	81.3	151.6	194.5
	30RB110	116.3	122.8	278.2	109.3	133.8	261.4	101.7	146.3	243.3	93.5	160.5	223.7	89.1	168.2	213.2
	30RB120	130.5	137.0	312.1	122.7	149.4	293.5	114.3	163.2	273.6	105.3	178.6	251.9	100.3	187.0	240.1
	30RB130	140.5	146.5	336.0	132.0	159.8	315.7	122.8	174.7	293.9	112.9	191.3	270.2	107.6	200.2	257.5
	30RB150	159.8	166.2	382.2	150.1	181.3	359.0	139.5	198.1	333.7	127.9	216.7	306.0	121.6	226.6	291.0
	30RB160	168.8	174.7	403.8	158.9	190.5	380.1	148.0	208.2	354.2	136.1	227.7	325.6	129.6	238.2	310.1
	30RB170	183.8	192.9	439.7	172.8	210.4	413.4	160.9	230.0	384.9	147.9	251.6	353.7	140.7	263.2	336.7
	30RB190	208.0	219.5	497.4	195.6	239.1	468.0	182.3	261.2	436.0	167.7	285.6	401.2	159.9	298.7	382.4
	30RB210	222.9	230.4	533.1	209.6	251.4	501.4	195.2	274.8	467.1	179.4	300.7	429.3	170.9	314.6	408.8
	30RB225	236.6	248.3	566.0	222.7	271.1	532.6	207.3	296.4	495.5	190.4	324.4	455.4	181.2	339.4	433.6
	30RB250	262.3	276.0	627.6	246.9	301.1	590.7	230.2	329.2	550.7	211.6	360.2	506.3	201.6	376.7	482.4
	30RB275	286.9	301.6	686.2	270.0	328.9	645.9	251.7	359.4	602.2	231.8	393.2	554.4	220.9	411.2	528.5
	30RB300	311.5	328.8	745.1	293.2	358.4	701.3	273.4	391.5	654.0	251.8	428.2	602.4	240.2	447.9	574.5
	30RB315	337.6	349.5	807.6	317.8	381.0	760.2	296.1	416.3	708.3	272.2	455.4	651.2	259.3	476.4	620.3
	30RB330	352.6	367.6	843.5	331.7	400.9	793.5	309.0	438.2	739.1	284.0	479.3	679.3	270.4	501.4	646.8
	30RB345	367.6	385.8	879.4	345.6	420.8	826.8	321.8	460.0	769.9	295.7	503.3	707.5	281.5	526.4	673.3
	30RB360	391.9	412.4	937.2	368.4	449.5	881.4	343.2	491.2	821.0	315.6	537.2	755.0	300.6	561.9	719.1
30RB390	416.1	438.9	994.9	391.3	478.3	936.0	364.5	522.3	872.0	335.4	571.2	802.4	319.7	597.4	764.9	
48	30RB060	65.5	66.6	156.9	61.6	72.5	147.4	57.4	78.9	137.4	52.7	86.0	126.2	50.2	89.9	120.2
	30RB070	75.9	78.6	181.8	71.3	85.6	170.8	66.5	93.4	159.1	61.3	102.2	146.6	58.4	107.0	139.9
	30RB080	87.7	90.1	209.9	82.3	97.9	196.9	76.3	107.0	182.5	69.6	117.2	166.7	66.1	122.6	158.2
	30RB090	98.9	100.8	236.8	93.0	109.4	222.6	86.7	119.1	207.4	79.8	129.8	191.2	76.1	135.7	182.3
	30RB100	109.2	112.8	261.5	102.7	122.6	245.8	95.8	133.6	229.2	88.3	146.0	211.3	84.2	152.8	201.6
	30RB110	120.4	124.8	288.2	113.1	135.8	270.8	105.3	148.1	252.1	96.9	162.1	232.0	92.4	169.6	221.2
	30RB120	135.0	138.6	323.2	126.9	151.1	303.9	118.4	165.1	283.4	109.1	180.5	261.1	104.0	188.7	249.1
	30RB130	145.6	148.0	348.4	136.8	161.4	327.5	127.4	176.4	304.9	117.2	193.0	280.5	111.7	202.0	267.3
	30RB150	165.8	168.2	396.9	155.8	183.4	373.0	144.9	200.4	346.8	132.9	219.0	318.1	126.4	229.0	302.6
	30RB160	175.1	176.5	419.1	164.9	192.4	394.6	153.8	210.2	368.0	141.4	229.8	338.5	134.7	240.3	322.5
	30RB170	190.7	195.1	456.4	179.3	212.7	429.2	167.0	232.4	399.7	153.6	254.1	367.6	146.2	265.7	349.9
	30RB190	215.7	221.8	516.4	202.9	241.6	485.3	189.1	263.8	452.6	174.0	288.3	416.6	165.9	301.4	397.1
	30RB210	231.2	233.0	553.5	217.7	254.1	521.0	202.7	277.6	485.0	186.4	303.7	446.2	177.6	317.6	425.0
	30RB225	245.5	251.3	587.7	231.1	274.2	553.2	215.3	299.7	515.2	197.8	327.8	473.4	188.3	342.8	450.7
	30RB250	272.2	279.2	651.5	256.2	304.4	613.3	238.9	332.7	571.8	219.8	363.8	526.1	209.4	380.5	500.8
	30RB275	297.6	305.0	712.2	280.1	332.4	670.4	261.2	363.1	625.2	240.5	397.0	575.7	229.3	415.1	549.0
	30RB300	323.1	332.4	772.9	304.1	362.1	727.9	283.6	395.4	678.4	261.3	432.3	625.5	249.2	452.0	596.6
	30RB315	350.2	353.1	838.2	329.7	384.8	789.3	307.5	420.3	736.1	282.8	459.6	676.9	269.4	480.6	644.9
	30RB330	365.8	371.6	875.5	344.2	405.1	823.8	320.7	442.5	767.8	295.0	483.9	706.1	280.9	506.0	672.4
	30RB345	381.4	390.1	912.9	358.6	425.4	858.3	334.0	464.7	799.4	307.1	508.3	735.2	292.4	531.5	699.8
	30RB360	406.4	416.9	972.8	382.2	454.3	914.4	356.1	496.1	852.3	327.6	542.4	784.2	312.1	567.2	747.0
30RB390	431.5	443.7	1032.7	405.8	483.2	970.5	378.1	527.5	905.2	348.1	576.6	833.2	331.8	602.8	794.2	
50	30RB060	67.9	67.6	162.7	63.8	73.4	152.9	59.5	80.0	142.4	54.8	87.1	131.1	52.2	90.9	125.1
	30RB070	78.6	79.7	188.2	73.8	86.8	176.8	68.8	94.6	164.8	63.4	103.3	151.9	60.5	108.0	145.1
	30RB080	90.7	91.8	217.1	85.2	99.7	204.0	79.2	108.4	189.8	72.5	118.6	173.6	68.8	124.0	164.8
	30RB090	102.4	102.2	245.2	96.3	110.9	230.6	89.8	120.6	214.9	82.7	131.3	198.1	79.0	137.0	189.1
	30RB100	113.0	114.3	270.7	106.3	124.3	254.5	99.1	135.4	237.3	91.4	147.5	218.9	87.2	154.1	209.0
	30RB110	124.6	126.8	298.3	117.1	138.0	280.3	109.0	150.3	261.2	100.3	163.9	240.3	95.7	171.5	229.1
	30RB120	139.6	140.3	334.4	131.3	152.9	314.5	122.5	166.9	293.4	112.9	182.4	270.4	107.7	190.7	258.1
	30RB130	150.8	149.6	361.2	141.8	163.0	339.5	132.0	178.1	316.2	121.5	194.8	291.0	115.8	203.8	277.5
	30RB150	172.1	170.4	412.1	161.7	185.6	387.3	150.5	202.7	360.4	138.0	221.4	330.6	131.3	231.4	314.5
	30RB160	181.6	178.4	434.9	171.0	194.4	409.6	159.5	212.2	382.1	146.9	231.9	351.7	139.9	242.5	335.1
	30RB170	197.7	197.4	473.5	186.0	215.0	445.4	173.2	234.8	414.9	159.3	256.7	381.6	151.8	268.4	363.5
	30RB190	223.7	224.3	535.7	210.4	244.2	503.8	196.1	266.4	469.6	180.5	291.0	432.3	172.1	304.2	412.2
	30RB210	239.8	235.6	574.3	225.9	256.9	541.0	210.5	280.6	503.8	193.6	306.7	463.5	184.4	320.7	441.6
	30RB225	254.7	254.3	609.4	239.8	277.4	574.2	223.5	303.1	535.2	205.3	331.3	491.4	195.6	346.4	468.3
	30RB250	282.3	282.5	675.5	265.8	307.9	636.2	247.8	336.3	593.5	228.1	367.6	546.4	217.4	384.3	520.6
	30RB275	308.6	308.5	738.6	290.5	336.0	695.8	270.9	366.9	648.5	249.5	400.9	597.6	238.0	419.1	569.9
	30RB300	335.1	336.1	802.3	315.4	366.0	755.1	294.2	399.5	704.2	271.1	436.5	648.7	258.6	456.3	619.3
	30RB315	363.2	356.8	869.9	342.1	388.8	819.3	319.1	424.5	764.2	293.7	463.9	703.4	279.9	485.0	670.3
	30RB330	379.3	375.8	908.5	357.0	409.4	855.0	332.8	447.1	797.0	306.2	488.6	733.4	291.7	510.9	698.7
	30RB345	395.4	394.9	947.1	371.9	430.1	890.8	346.5	469.6	829.8	318.7	513.4	763.3	303.6	536.7	727.0
	30RB360	421.4	421.7	1009.2	396.3	459.2	949.2	369.3	501.3	884.5	339.9	547.7	814.0	323.9	572.6	775.7
30RB390	447.4	448.6	1071.4	420.8	488.3	1007.7	392.1	532.9	939.2	361.0	582.1	864.6	344.2	608.5	824.3	

LEGEND

LCWT — Leaving Chilled Water Temperature

# Performance data (cont)



## 30RB PACKAGED AIR-COOLED CHILLER RATINGS TABLE — ENGLISH (cont)

LCWT (F)	UNIT SIZE	CONDENSER ENTERING AIR TEMPERATURE (F)														
		85			95			105			115			120		
		Cap. (Tons)	Input kW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input kW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input kW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input kW	Cooler Flow Rate (gpm)	Cap. (Tons)	Input kW	Cooler Flow Rate (gpm)
55	30RB060	74.0	70.0	177.4	69.6	76.0	166.8	64.8	82.6	155.6	59.6	89.8	149.5	56.8	93.6	147.1
	30RB070	85.4	82.6	204.8	80.3	89.8	192.5	74.8	97.8	179.5	69.0	106.6	165.5	65.9	111.3	158.0
	30RB080	98.4	96.5	235.9	92.4	104.5	221.5	85.9	113.3	209.0	78.6	122.6	207.5	74.7	127.4	208.0
	30RB090	111.5	106.0	267.3	104.8	114.9	251.3	97.6	124.7	240.0	89.8	135.4	228.5	85.6	141.1	222.2
	30RB100	122.8	118.5	294.5	115.5	128.7	277.0	107.7	140.0	258.4	99.4	152.4	238.4	94.9	158.9	227.6
	30RB110	135.3	132.3	324.5	127.2	143.8	305.0	118.6	156.4	284.4	109.1	170.1	268.3	103.9	177.3	260.9
	30RB120	151.4	145.2	363.1	142.7	157.6	342.1	133.0	171.8	322.9	122.4	187.4	306.4	116.8	195.6	297.5
	30RB130	163.8	154.6	392.8	154.5	167.5	370.5	144.2	182.6	345.7	132.8	199.5	318.5	126.7	208.5	303.8
	30RB150	186.1	179.9	446.1	175.6	194.2	421.0	164.4	209.7	394.2	150.8	227.4	382.0	143.0	237.2	381.7
	30RB160	198.7	183.4	476.4	186.7	199.5	456.9	173.7	217.4	435.8	159.7	237.2	413.2	152.2	247.8	401.1
	30RB170	215.1	205.4	515.7	202.6	222.8	485.6	189.1	241.8	457.6	173.9	263.1	434.2	165.5	274.8	421.7
	30RB190	244.5	230.8	586.3	230.1	251.0	551.7	214.5	273.6	514.3	197.6	298.4	473.7	188.4	311.7	451.8
	30RB210	260.1	246.7	623.7	245.8	266.9	589.4	230.1	289.0	555.8	211.6	314.7	522.9	201.2	328.5	511.9
	30RB225	275.6	268.1	661.0	260.5	289.4	624.6	244.3	312.6	586.2	225.2	340.6	540.1	214.5	355.7	518.4
	30RB250	306.7	295.1	735.6	289.4	319.6	694.0	270.8	346.7	649.4	249.9	377.5	599.1	238.0	394.2	578.5
	30RB275	336.4	320.4	806.7	317.0	347.5	760.3	296.2	377.6	710.4	273.2	411.4	656.4	260.4	429.6	632.7
	30RB300	366.5	346.0	879.0	345.3	376.4	827.9	322.1	410.3	771.9	296.9	447.6	711.9	283.3	467.6	678.8
	30RB315	397.5	366.8	952.8	373.4	398.9	913.8	347.5	434.8	871.5	319.4	474.4	826.4	304.3	495.6	802.2
	30RB330	413.8	388.8	992.1	389.3	422.3	942.5	362.9	459.2	893.4	333.6	500.3	847.4	317.7	522.6	822.8
	30RB345	430.2	410.9	1031.4	405.2	445.6	971.3	378.3	483.6	915.3	347.8	526.3	868.4	331.0	549.6	843.4
30RB360	459.6	436.3	1102.0	432.7	473.8	1037.4	403.6	515.4	972.0	371.4	561.6	907.9	353.9	586.5	873.5	
30RB390	489.0	461.7	1172.6	460.2	502.1	1103.5	429.0	547.1	1028.7	395.1	596.8	947.4	376.8	623.4	903.5	
60	30RB060	75.9	70.8	182.3	71.0	76.7	170.3	65.7	83.1	157.7	60.1	90.1	144.3	57.2	93.9	137.2
	30RB070	89.2	84.2	214.0	83.3	91.2	199.8	77.1	99.1	185.0	70.5	107.6	169.3	67.1	112.1	161.0
	30RB080	99.6	97.2	239.0	92.9	105.0	223.1	86.0	113.4	206.4	78.6	122.6	188.7	74.7	127.4	179.4
	30RB090	115.0	107.5	276.0	107.4	116.2	257.9	99.5	125.7	238.8	91.0	136.2	218.5	86.6	141.7	207.8
	30RB100	128.2	120.9	307.7	119.7	130.8	287.4	110.9	141.7	266.0	101.5	153.6	243.5	96.5	160.0	231.6
	30RB110	139.5	134.6	334.7	130.1	145.6	312.2	120.3	157.6	288.6	109.9	170.8	263.7	104.4	177.6	250.5
	30RB120	159.1	150.3	381.7	148.9	161.9	357.3	138.3	174.7	331.9	126.6	189.3	303.9	120.3	197.3	288.6
	30RB130	172.2	159.1	413.4	161.2	171.6	386.8	149.5	185.4	358.9	136.7	201.2	328.2	129.8	210.0	311.4
	30RB150	189.1	182.1	453.8	177.2	195.5	425.3	164.8	210.1	395.5	150.8	227.4	362.0	143.0	237.2	343.3
	30RB160	206.1	186.6	494.7	192.8	201.6	462.7	178.3	219.2	427.8	162.8	238.5	390.7	154.6	248.9	370.9
	30RB170	223.0	209.2	535.3	208.9	225.2	501.3	193.6	243.6	464.6	176.9	264.5	424.5	167.9	275.9	402.9
	30RB190	256.9	236.4	616.5	240.4	254.7	577.0	222.2	276.6	533.4	202.9	300.8	487.0	192.7	313.7	462.4
	30RB210	266.5	250.9	639.7	249.6	269.8	599.1	231.9	290.6	556.5	212.1	314.9	509.1	201.2	328.5	483.0
	30RB225	283.4	273.8	680.2	265.6	293.7	637.6	247.2	315.3	593.2	226.2	341.0	542.9	214.5	355.7	514.8
	30RB250	319.6	302.2	766.9	299.4	324.7	718.6	277.8	350.3	666.7	254.2	379.4	610.0	241.1	395.7	578.7
	30RB275	353.4	328.7	848.2	331.2	353.2	794.8	306.7	382.0	736.2	280.4	414.5	672.9	266.1	432.2	638.7
	30RB300	388.0	355.8	931.2	363.4	383.0	872.2	336.0	415.7	806.4	306.8	452.0	736.3	291.3	471.3	699.2
	30RB315	412.2	373.2	989.3	385.6	403.3	925.3	356.5	438.4	855.6	325.5	477.1	781.3	309.1	497.8	741.9
	30RB330	429.1	395.8	1029.9	401.6	426.8	963.9	371.8	462.7	892.4	339.7	503.0	815.2	322.4	524.8	773.8
	30RB345	446.1	418.5	1070.6	417.7	450.3	1002.6	387.1	487.1	929.1	353.8	528.9	849.0	335.7	551.8	805.7
30RB360	479.9	445.7	1151.8	449.3	479.9	1078.3	415.8	520.2	997.9	379.8	565.2	911.5	360.5	589.5	865.2	
30RB390	513.7	472.8	1233.0	480.8	509.4	1154.0	444.5	553.2	1066.8	405.8	601.5	974.0	385.3	627.3	924.7	

LEGEND

LCWT — Leaving Chilled Water Temperature



**30RB PACKAGED AIR-COOLED CHILLER RATINGS TABLE — SI**

LCWT (C)	UNIT SIZE	CONDENSER ENTERING AIR TEMPERATURE (C)														
		30.0			35.0			40.0			45.0			50.0		
		Cap. (kW)	Input kW	Cooler Flow Rate (L/s)	Cap. (kW)	Input kW	Cooler Flow Rate (L/s)	Cap. (kW)	Input kW	Cooler Flow Rate (L/s)	Cap. (kW)	Input kW	Cooler Flow Rate (L/s)	Cap. (kW)	Input kW	Cooler Flow Rate (L/s)
5.0	30RB060	200.9	64.2	8.6	189.5	69.5	8.1	177.4	75.4	7.6	164.5	82.0	7.1	150.6	89.2	6.5
	30RB070	234.4	76.0	10.1	221.3	82.3	9.5	207.5	89.4	8.9	192.6	97.2	8.3	176.5	105.7	7.6
	30RB080	267.2	86.3	11.5	251.3	93.6	10.8	234.4	101.7	10.1	216.4	110.6	9.3	196.8	120.4	8.4
	30RB090	304.1	97.2	13.0	287.4	105.3	12.3	269.5	114.2	11.6	250.1	124.0	10.7	229.2	134.8	9.8
	30RB100	337.5	109.0	14.5	318.9	118.1	13.7	299.2	128.1	12.8	278.2	139.2	11.9	255.2	151.3	11.0
	30RB110	372.0	119.9	16.0	351.0	130.1	15.1	328.7	141.5	14.1	305.0	154.0	13.1	279.4	167.8	12.0
	30RB120	417.6	134.3	17.9	394.6	145.5	16.9	370.1	157.9	15.9	343.4	171.6	14.7	314.5	186.5	13.5
	30RB130	448.0	144.2	19.2	423.1	156.1	18.2	396.5	169.3	17.0	367.8	183.8	15.8	336.2	199.6	14.4
	30RB150	508.0	163.0	21.8	479.6	176.4	20.6	449.1	191.3	19.3	416.1	207.6	17.8	379.8	225.3	16.3
	30RB160	536.7	171.9	23.0	507.3	186.0	21.8	475.7	201.5	20.4	441.5	218.7	18.9	404.1	237.4	17.3
	30RB170	584.7	189.5	25.1	552.7	205.1	23.7	518.1	222.3	22.2	480.4	241.3	20.6	439.1	261.9	18.8
	30RB190	661.9	215.7	28.4	625.7	233.2	26.8	587.1	252.7	25.2	545.5	274.1	23.4	499.2	297.4	21.4
	30RB210	708.9	226.3	30.4	670.4	245.0	28.8	628.7	265.7	27.0	583.4	288.4	25.0	533.5	313.2	22.9
	30RB225	753.2	243.6	32.3	712.1	263.9	30.5	667.8	286.2	28.6	619.5	310.7	26.6	566.3	337.5	24.3
	30RB250	836.1	271.1	35.9	791.2	293.4	33.9	742.0	318.1	31.8	688.8	345.3	29.5	630.2	374.8	27.0
	30RB275	914.6	296.5	39.2	865.5	320.8	37.1	812.8	347.7	34.9	754.9	377.2	32.4	691.2	409.4	29.6
	30RB300	993.4	323.4	42.6	940.2	349.8	40.3	883.0	379.0	37.9	821.0	411.2	35.2	752.5	446.3	32.3
	30RB315	1073.5	343.8	46.0	1014.7	371.9	43.5	951.5	403.1	40.8	883.1	437.3	37.9	808.1	474.8	34.7
	30RB330	1121.4	361.4	48.1	1060.1	391.0	45.5	993.8	423.9	42.6	922.0	459.9	39.6	843.2	499.3	36.2
	30RB345	1169.4	378.9	50.2	1105.5	410.2	47.4	1036.1	444.7	44.4	960.9	482.5	41.2	878.2	523.8	37.7
30RB360	1246.5	405.1	53.5	1178.5	438.3	50.6	1105.2	475.0	47.4	1025.9	515.3	44.0	938.3	559.3	40.3	
30RB390	1323.7	431.4	56.8	1251.5	466.4	53.7	1174.3	505.4	50.4	1091.0	548.2	46.8	998.4	594.8	42.8	
6.0	30RB060	207.8	64.9	8.9	196.2	70.1	8.4	183.7	76.0	7.9	170.4	82.5	7.3	156.0	89.8	6.7
	30RB070	242.2	76.6	10.4	228.7	83.0	9.8	214.5	90.1	9.2	199.3	98.0	8.6	182.6	106.5	7.8
	30RB080	276.8	87.3	11.9	260.4	94.6	11.2	242.9	102.7	10.4	224.3	111.7	9.6	204.1	121.5	8.8
	30RB090	314.3	98.2	13.5	297.1	106.0	12.8	278.7	115.0	12.0	258.8	124.8	11.1	237.3	135.6	10.2
	30RB100	348.7	109.9	15.0	329.5	119.0	14.1	309.2	129.1	13.3	287.5	140.2	12.3	263.9	152.4	11.3
	30RB110	384.2	121.2	16.5	362.9	131.3	15.6	339.9	142.7	14.6	315.5	155.2	13.5	289.1	169.1	12.4
	30RB120	431.1	135.6	18.5	407.6	146.7	17.5	382.5	159.2	16.4	355.2	172.9	15.2	325.4	187.9	14.0
	30RB130	463.1	145.5	19.9	437.5	157.4	18.8	410.1	170.6	17.6	380.7	185.2	16.3	348.2	201.1	14.9
	30RB150	525.5	164.6	22.6	496.1	178.1	21.3	464.6	193.0	19.9	430.5	209.4	18.5	393.1	227.2	16.9
	30RB160	555.5	173.4	23.8	525.5	187.6	22.6	492.8	203.2	21.2	457.5	220.4	19.6	418.8	239.2	18.0
	30RB170	604.9	191.3	26.0	571.9	206.9	24.5	536.4	224.3	23.0	497.5	243.3	21.4	454.8	264.0	19.5
	30RB190	685.0	217.7	29.4	647.7	235.3	27.8	607.8	254.9	26.1	564.8	276.4	24.2	517.3	299.8	22.2
	30RB210	733.2	228.4	31.5	693.6	247.2	29.8	650.7	268.0	27.9	604.0	290.8	25.9	552.6	315.7	23.7
	30RB225	778.7	246.0	33.4	736.3	266.3	31.6	690.6	288.8	29.6	641.0	313.5	27.5	586.3	340.3	25.2
	30RB250	864.1	273.6	37.1	817.9	296.1	35.1	767.6	321.0	32.9	712.6	348.2	30.6	652.3	377.9	28.0
	30RB275	945.3	299.2	40.6	894.8	323.6	38.4	840.3	350.7	36.1	781.1	380.4	33.5	715.4	412.7	30.7
	30RB300	1026.7	326.3	44.1	971.8	352.8	41.7	912.9	382.2	39.2	849.1	414.5	36.4	778.9	449.7	33.4
	30RB315	1111.0	346.9	47.7	1050.9	375.2	45.1	985.6	406.4	42.3	915.0	440.8	39.3	837.6	478.4	36.0
	30RB330	1160.5	364.7	49.8	1097.3	394.5	47.1	1029.2	427.5	44.2	955.0	463.7	41.0	873.6	503.2	37.5
	30RB345	1209.9	382.5	51.9	1143.8	413.9	49.1	1072.8	448.6	46.0	995.0	486.6	42.7	909.6	528.0	39.0
30RB360	1290.0	408.9	55.4	1219.6	442.3	52.3	1144.2	479.2	49.1	1062.3	519.7	45.6	972.1	563.8	41.7	
30RB390	1370.0	435.4	58.8	1295.4	470.6	55.6	1215.6	509.7	52.2	1129.6	552.7	48.5	1034.6	599.5	44.4	
7.0	30RB060	214.8	65.6	9.2	203.0	70.8	8.7	190.2	76.6	8.2	176.4	83.1	7.6	161.6	90.4	6.9
	30RB070	250.1	77.5	10.7	236.3	83.8	10.2	221.6	90.9	9.5	206.0	98.8	8.8	188.9	107.4	8.1
	30RB080	287.2	88.3	12.3	270.3	95.7	11.6	252.1	103.8	10.8	232.5	112.8	10.0	211.6	122.6	9.1
	30RB090	325.0	99.3	14.0	307.3	107.1	13.2	288.4	115.8	12.4	268.0	125.7	11.5	245.6	136.5	10.5
	30RB100	359.8	111.1	15.5	340.2	120.0	14.6	319.3	130.1	13.7	297.0	141.3	12.8	272.9	153.5	11.7
	30RB110	396.5	122.5	17.0	374.7	132.7	16.1	351.2	143.9	15.1	326.0	156.5	14.0	298.9	170.3	12.8
	30RB120	444.8	137.0	19.1	420.7	148.2	18.1	395.0	160.5	17.0	367.2	174.3	15.8	336.5	189.3	14.5
	30RB130	478.5	146.8	20.5	452.1	158.8	19.4	424.0	172.0	18.2	393.7	186.7	16.9	360.5	202.7	15.5
	30RB150	543.7	166.3	23.3	513.4	179.9	22.0	480.9	194.9	20.7	445.6	211.3	19.1	407.0	229.1	17.5
	30RB160	574.7	175.0	24.7	544.0	189.2	23.4	510.4	204.9	21.9	473.9	222.2	20.4	434.0	241.0	18.6
	30RB170	625.8	193.1	26.9	591.7	208.9	25.4	555.1	226.3	23.8	515.2	245.5	22.1	471.1	266.2	20.2
	30RB190	708.5	219.7	30.4	670.0	237.5	28.8	628.9	257.1	27.0	584.5	278.7	25.1	535.8	302.2	23.0
	30RB210	758.4	230.6	32.6	717.5	249.5	30.8	673.2	270.4	28.9	625.1	293.3	26.8	572.2	318.3	24.6
	30RB225	805.5	248.5	34.6	761.9	269.0	32.7	714.6	291.5	30.7	663.3	316.3	28.5	606.8	343.2	26.1
	30RB250	893.3	276.3	38.4	845.6	298.9	36.3	794.1	323.9	34.1	737.4	351.3	31.7	675.2	381.0	29.0
	30RB275	977.0	302.0	42.0	924.8	326.6	39.7	868.7	353.7	37.3	807.8	383.6	34.7	740.3	416.0	31.8
	30RB300	1060.9	329.3	45.6	1004.2	355.9	43.1	943.5	385.5	40.5	877.7	417.9	37.7	805.7	453.3	34.6
	30RB315	1149.5	350.0	49.4	1088.0	378.5	46.7	1020.7	409.9	43.8	947.8	444.4	40.7	867.9	482.1	37.3
	30RB330	1200.5	368.1	51.6	1135.7	398.1	48.8	1065.4	431.3	45.8	989.1	467.7	42.5	905.1	507.3	38.9
	30RB345	1251.6	386.2	53.7	1183.3	417.8	50.8	1110.2	452.7	47.7	1030.3	490.9	44.2	942.2	532.4	40.5
30RB360	1334.3	412.8	57.3	1261.7	446.3	54.2	1184.0	483.5	50.8	1099.7	524.1	47.2	1006.9	568.4	43.2	
30RB390	1417.0	439.5	60.8	1340.0	474.9	57.5	1257.8	514.2	54.0	1169.0	557.4	50.2	1071.6	604.4	46.0	

**LEGEND**

LCWT — Leaving Chilled Water Temperature

# Performance data (cont)



## 30RB PACKAGED AIR-COOLED CHILLER RATINGS TABLE — SI (cont)

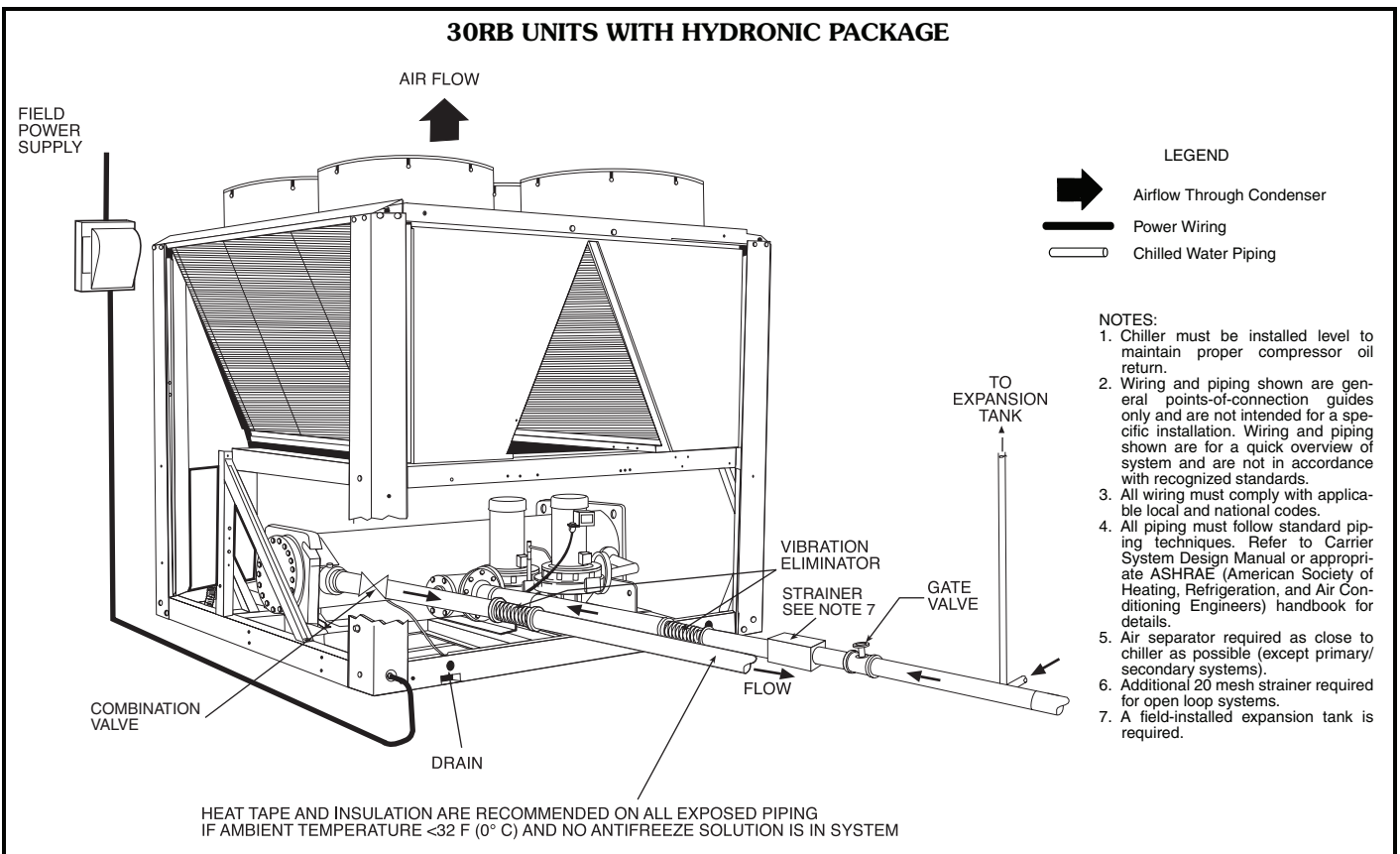
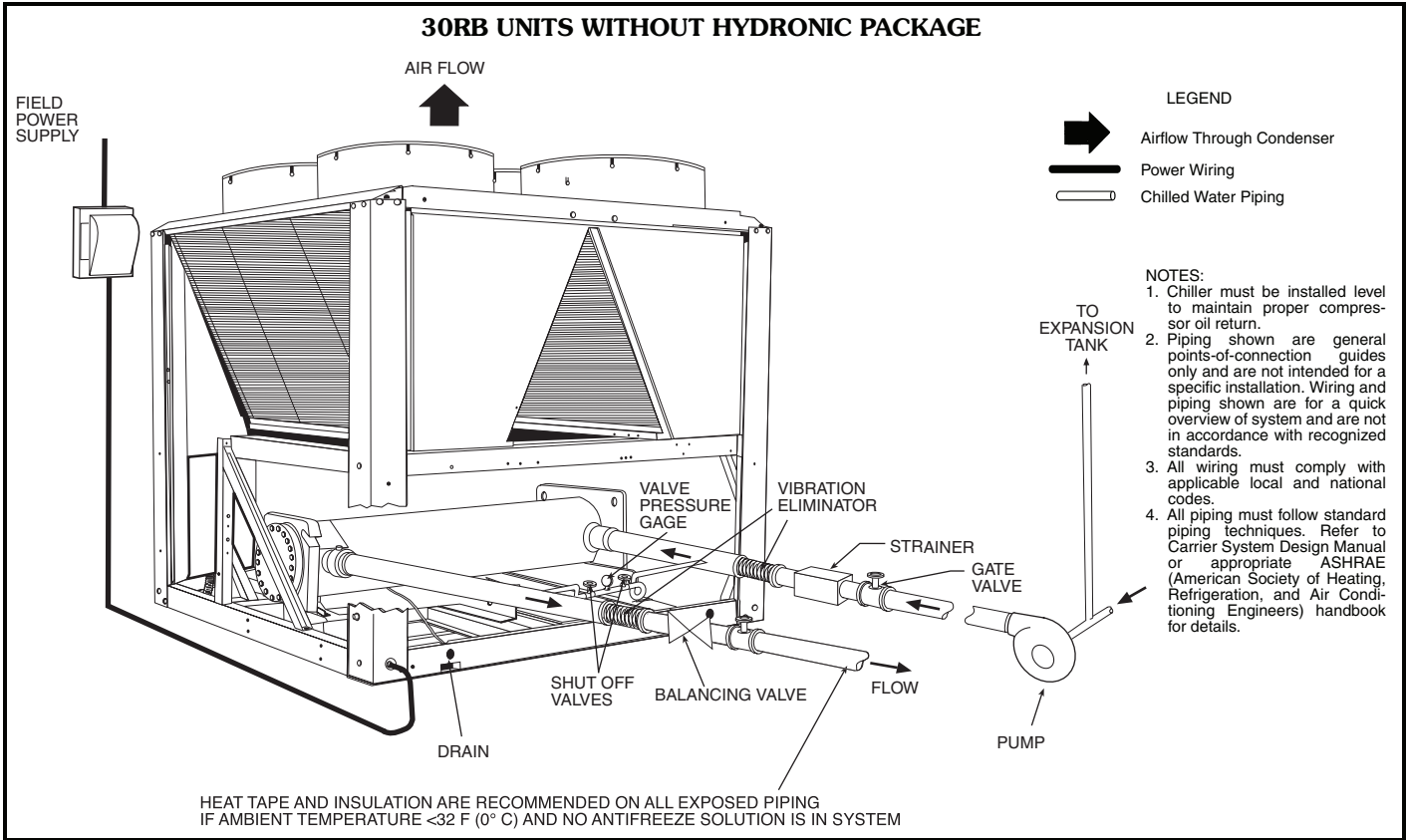
LCWT (C)	UNIT SIZE	CONDENSER ENTERING AIR TEMPERATURE (C)														
		30.0			35.0			40.0			45.0			50.0		
		Cap. (kW)	Input kW	Cooler Flow Rate (L/s)	Cap. (kW)	Input kW	Cooler Flow Rate (L/s)	Cap. (kW)	Input kW	Cooler Flow Rate (L/s)	Cap. (kW)	Input kW	Cooler Flow Rate (L/s)	Cap. (kW)	Input kW	Cooler Flow Rate (L/s)
8.0	30RB060	222.2	66.4	9.5	210.0	71.7	9.0	197.0	77.4	8.5	182.8	83.8	7.9	167.4	91.0	7.2
	30RB070	258.0	78.4	11.1	243.8	84.7	10.5	228.9	91.7	9.8	212.8	99.6	9.2	195.4	108.2	8.4
	30RB080	297.4	89.5	12.8	280.2	96.8	12.0	261.5	105.0	11.2	241.5	114.0	10.4	219.7	123.8	9.4
	30RB090	335.7	100.5	14.4	317.5	108.3	13.6	298.1	116.9	12.8	277.3	126.5	11.9	254.3	137.4	10.9
	30RB100	371.3	112.5	16.0	351.1	121.3	15.1	329.7	131.1	14.2	306.8	142.3	13.2	281.9	154.6	12.1
	30RB110	409.1	124.2	17.6	386.6	134.1	16.6	362.6	145.4	15.6	336.9	157.8	14.5	308.9	171.6	13.3
	30RB120	458.9	138.5	19.7	434.0	149.7	18.6	407.6	162.1	17.5	379.3	175.7	16.3	347.8	190.8	14.9
	30RB130	494.2	148.1	21.2	467.1	160.1	20.1	438.1	173.5	18.8	407.0	188.2	17.5	373.0	204.2	16.0
	30RB150	562.2	168.0	24.2	531.3	181.7	22.8	497.8	196.8	21.4	461.4	213.3	19.8	421.5	231.2	18.1
	30RB160	594.1	176.6	25.5	562.4	190.9	24.2	528.2	206.7	22.7	490.7	224.0	21.1	449.5	242.9	19.3
	30RB170	646.9	195.0	27.8	611.7	210.9	26.3	574.0	228.4	24.7	533.2	247.6	22.9	487.8	268.5	21.0
	30RB190	732.1	221.8	31.4	692.4	239.6	29.8	650.0	259.4	27.9	604.4	281.0	26.0	554.3	304.6	23.8
	30RB210	784.4	232.9	33.7	742.2	251.9	31.9	696.5	272.9	29.9	647.0	295.9	27.8	592.4	320.9	25.5
	30RB225	832.8	251.1	35.8	788.3	271.7	33.9	739.4	294.4	31.8	686.5	319.2	29.5	628.2	346.2	27.0
	30RB250	923.4	279.0	39.7	874.1	301.8	37.6	821.0	326.9	35.3	762.9	354.4	32.8	698.7	384.3	30.0
	30RB275	1009.6	304.9	43.4	955.7	329.6	41.1	897.8	356.9	38.6	835.1	386.9	35.9	765.9	419.5	32.9
	30RB300	1096.2	332.4	47.1	1037.7	359.1	44.6	975.0	388.8	41.9	907.2	421.4	39.0	832.9	456.9	35.8
	30RB315	1188.2	353.2	51.1	1124.9	381.8	48.3	1056.3	413.4	45.4	981.3	448.1	42.2	899.0	485.9	38.6
	30RB330	1240.9	371.6	53.3	1174.1	401.8	50.4	1102.1	435.1	47.4	1023.8	471.7	44.0	937.3	511.4	40.3
	30RB345	1293.7	390.0	55.6	1223.3	421.7	52.6	1148.0	456.8	49.3	1066.4	495.3	45.8	975.5	536.9	41.9
30RB360	1378.9	416.8	59.2	1304.1	450.5	56.0	1224.0	487.8	52.6	1137.6	528.7	48.9	1042.1	573.1	44.8	
30RB390	1464.1	443.6	62.9	1384.8	479.2	59.5	1300.1	518.7	55.9	1208.8	562.1	51.9	1108.7	609.3	47.6	
10.0	30RB060	237.2	68.1	10.2	224.3	73.4	9.6	210.6	79.3	9.1	195.9	85.6	8.4	179.8	92.5	7.7
	30RB070	274.4	80.4	11.8	259.4	86.8	11.2	243.6	93.8	10.5	226.7	101.5	9.8	208.5	110.0	9.0
	30RB080	316.8	92.6	13.6	299.2	99.7	12.9	280.6	107.5	12.1	259.7	116.4	11.2	236.5	126.3	10.2
	30RB090	357.7	103.0	15.4	338.3	110.9	14.5	317.7	119.6	13.7	295.8	129.1	12.7	271.9	139.4	11.7
	30RB100	394.9	115.3	17.0	373.4	124.3	16.1	350.7	134.2	15.1	326.6	145.0	14.0	300.5	156.9	12.9
	30RB110	435.1	127.9	18.7	411.3	138.0	17.7	386.1	149.1	16.6	358.9	161.0	15.4	329.4	174.6	14.2
	30RB120	487.7	141.5	21.0	461.4	152.9	19.8	433.5	165.5	18.7	403.7	179.2	17.4	371.0	194.1	16.0
	30RB130	526.8	150.9	22.7	498.1	163.0	21.4	467.5	176.5	20.1	434.6	191.3	18.7	398.7	207.5	17.2
	30RB150	601.1	171.8	25.9	568.3	185.6	24.4	532.9	200.9	22.9	494.1	217.5	21.2	451.6	235.5	19.4
	30RB160	634.6	179.9	27.3	601.0	194.4	25.8	564.8	210.4	24.3	525.3	227.9	22.6	481.6	246.8	20.7
	30RB170	690.8	199.1	29.7	653.5	215.0	28.1	613.3	232.8	26.4	570.0	252.1	24.5	522.2	273.1	22.5
	30RB190	781.4	226.2	33.6	739.2	244.2	31.8	694.1	264.1	29.9	645.6	285.9	27.8	592.4	309.7	25.5
	30RB210	837.9	237.7	36.0	793.7	256.9	34.1	745.2	278.1	32.1	692.4	301.3	29.8	634.5	326.5	27.3
	30RB225	889.9	256.5	38.2	842.4	277.4	36.2	791.2	300.4	34.0	734.8	325.4	31.6	672.8	352.6	28.9
	30RB250	986.4	284.9	42.4	933.8	307.9	40.1	877.3	333.3	37.7	816.0	361.1	35.1	748.0	391.2	32.2
	30RB275	1078.3	311.1	46.3	1020.8	336.0	43.9	959.1	363.6	41.2	892.4	393.8	38.4	819.2	426.6	35.2
	30RB300	1170.8	339.0	50.3	1108.3	366.0	47.6	1041.5	396.0	44.8	969.3	428.8	41.7	890.4	464.5	38.3
	30RB315	1269.2	359.8	54.6	1202.0	388.8	51.7	1129.6	420.7	48.6	1050.7	455.7	45.2	963.2	493.7	41.4
	30RB330	1325.4	379.0	57.0	1254.5	409.4	54.0	1178.1	443.1	50.7	1095.4	480.0	47.1	1003.8	520.0	43.2
	30RB345	1381.6	398.1	59.4	1306.9	430.1	56.2	1226.6	465.5	52.8	1140.0	504.3	49.0	1044.3	546.3	44.9
30RB360	1472.2	425.2	63.3	1392.7	459.2	59.9	1307.5	496.8	56.2	1215.6	538.1	52.3	1114.6	582.8	47.9	
30RB390	1562.8	452.3	67.2	1478.4	488.3	63.6	1388.3	528.2	59.7	1291.2	571.9	55.5	1184.9	619.3	51.0	

LEGEND

LCWT — Leaving Chilled Water Temperature



# Typical piping and wiring

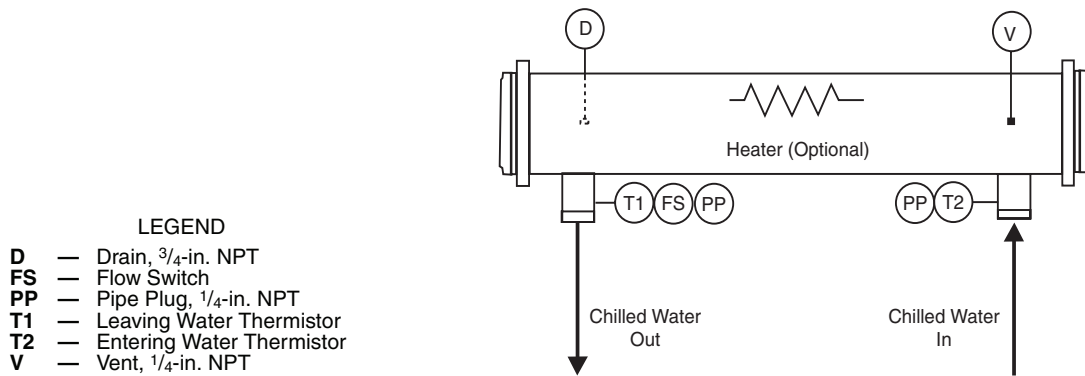




# Typical piping and wiring (cont)



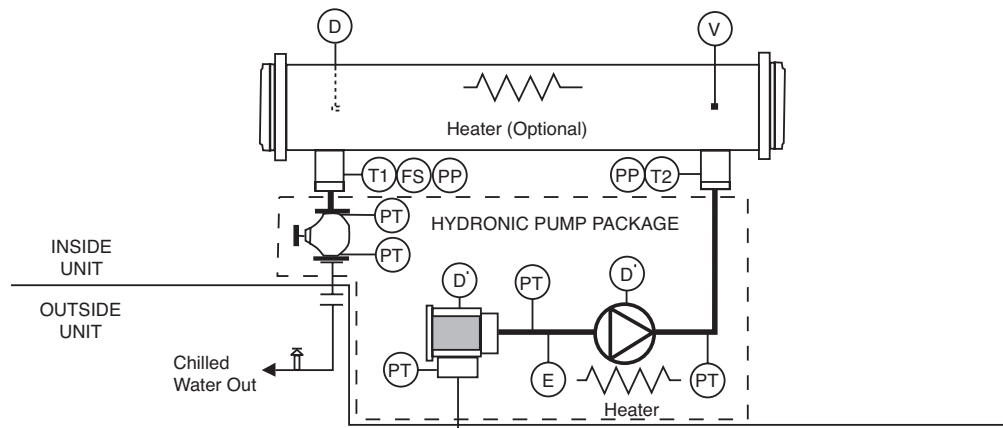
**TYPICAL PIPING DIAGRAM ON 30RB UNITS WITHOUT HYDRONIC PACKAGE**



**LEGEND**

- D** — Drain, 3/4-in. NPT
- FS** — Flow Switch
- PP** — Pipe Plug, 1/4-in. NPT
- T1** — Leaving Water Thermistor
- T2** — Entering Water Thermistor
- V** — Vent, 1/4-in. NPT

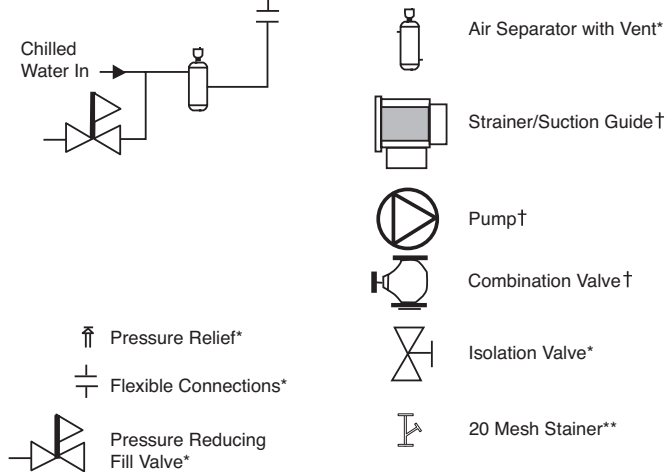
**TYPICAL PIPING DIAGRAM ON 30RB UNITS WITH HYDRONIC PACKAGE — SINGLE PUMP**



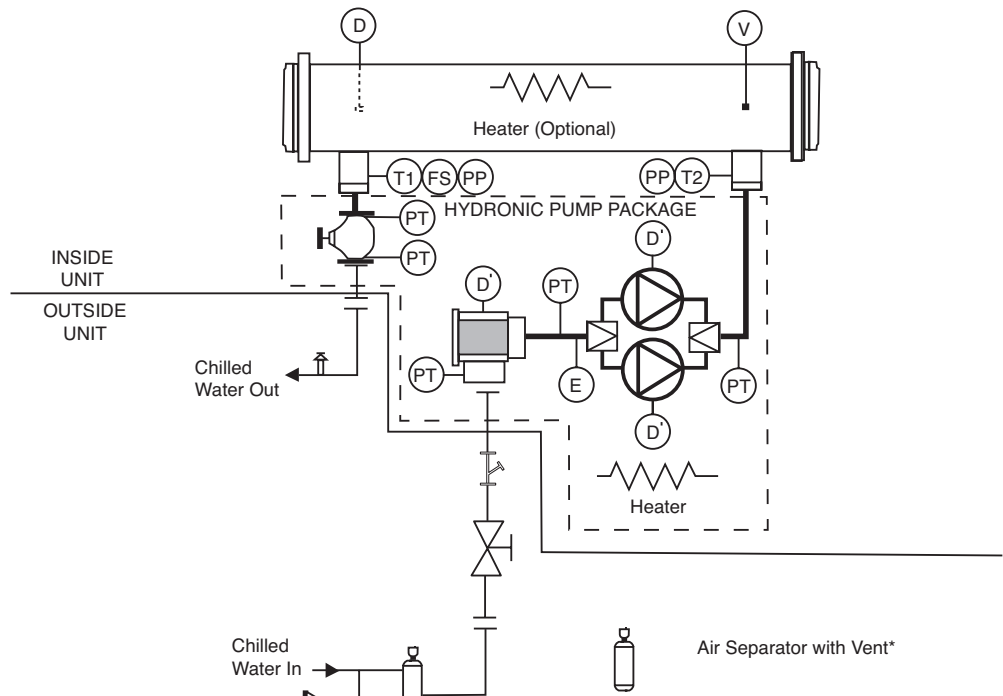
**LEGEND**

- D** — Drain, 3/4-in. NPT
- D'** — Drain, 1/4-in. NPT
- E** — Expansion Tank Connection, 3/4-in. NPT
- FS** — Flow Switch
- PP** — Pipe Plug, 1/4-in. NPT
- PT** — Pressure/Temperature Tap
- T1** — Leaving Water Thermistor
- T2** — Entering Water Thermistor
- V** — Vent, 1/4-in. NPT
- Indicates items provided with the optional hydronic pump package.

\*Field-supplied and installed.  
 †Factory-installed option.  
 \*\*Required for open loop systems.



**TYPICAL PIPING DIAGRAM ON 30RB UNITS WITH HYDRONIC PACKAGE — DUAL PUMPS**














**LEGEND**

- D** — Drain, 3/4-in. NPT
- D'** — Drain, 1/4-in. NPT
- E** — Expansion Tank Connection, 3/4-in. NPT
- FS** — Flow Switch
- PP** — Pipe Plug, 1/4-in. NPT
- PT** — Pressure/Temperature Tap
- T1** — Leaving Water Thermistor
- T2** — Entering Water Thermistor
- V** — Vent, 1/4-in. NPT

\*Field-supplied and installed.

†Factory-installed option.

\*\*Required for open loop systems.

-  Pressure Relief\*
-  Air Separator with Vent\*
-  Flexible Connections\*
-  Strainer/Suction Guide †
-  Pressure Reducing Fill Valve\*
-  Reverse Flow Check Valve/Service Valve †
-  Service Valve †
-  Pump †
-  Combination Valve †
-  Isolation Valve\*
-  20 Mesh Strainer\*\*

## 30RB ELECTRICAL DATA — SINGLE POINT UNITS

UNIT 30RB	UNIT VOLTAGE		NO HYDRONIC PACKAGE					3 HP PUMP, 1750 RPM				5 HP PUMP, 1750 RPM			
	V-Hz (3 Ph)	Supplied		MCA	MOCP	ICF	Rec Fuse	MCA	MOCP	ICF	Rec Fuse	MCA	MOCP	ICF	Rec Fuse
		Min	Max	XL	XL	XL	Size	XL	XL	XL	Size	XL	XL	XL	Size
060	208/230-60	187	253	291.5	350	682.8	350	302.4	350	693.6	350	309.2	350	700.5	350
	380-60	342	418	150.9	175	362.9	175	156.9	175	368.8	175	160.6	175	372.6	175
	460-60	414	506	127.9	150	302.0	150	132.8	150	306.9	150	135.9	150	310.0	150
	575-60	518	633	102.4	125	244.7	110	106.4	125	248.6	125	108.8	125	251.1	125
070	208/230-60	187	253	334.7	400	777.0	400	345.6	400	787.8	400	352.4	400	794.7	400
	380-60	342	418	175.5	200	428.8	200	181.4	225	434.7	200	185.2	225	438.5	200
	460-60	414	506	147.9	175	355.9	175	152.8	175	360.8	175	155.9	175	363.9	175
	575-60	518	633	119.8	150	287.4	150	123.7	150	291.3	150	126.2	150	293.8	150
080	208/230-60	187	253	366.5	400	757.8	400	—	—	—	—	384.2	450	775.5	450
	380-60	342	418	189.3	225	401.3	200	—	—	—	—	199.0	225	411.0	225
	460-60	414	506	160.6	175	334.7	175	—	—	—	—	168.6	200	342.7	200
	575-60	518	633	128.6	150	270.9	150	—	—	—	—	135.0	150	277.3	150
090	208/230-60	187	253	433.6	500	875.9	500	—	—	—	—	451.3	500	893.6	500
	380-60	342	418	226.9	250	480.3	250	—	—	—	—	236.6	250	490.0	250
	460-60	414	506	191.4	225	399.4	225	—	—	—	—	199.4	225	407.4	225
	575-60	518	633	154.6	175	322.2	175	—	—	—	—	161.0	175	328.6	175
100	208/230-60	187	253	472.0	500	914.3	500	—	—	—	—	489.7	500	932.0	500
	380-60	342	418	248.7	250	502.1	250	—	—	—	—	258.4	300	511.8	300
	460-60	414	506	209.2	250	417.2	225	—	—	—	—	217.2	250	425.2	250
	575-60	518	633	170.0	200	337.6	200	—	—	—	—	176.4	200	344.0	200
110	208/230-60	187	253	508.6	600	950.9	600	—	—	—	—	526.3	600	968.6	600
	380-60	342	418	265.3	300	518.7	300	—	—	—	—	275.0	300	528.4	300
	460-60	414	506	224.1	250	432.1	250	—	—	—	—	232.1	250	440.1	250
	575-60	518	633	180.8	200	348.4	200	—	—	—	—	187.2	200	354.8	200
120	208/230-60	187	253	578.1	600	1020.4	600	—	—	—	—	595.8	600	1038.1	700
	380-60	342	418	304.6	350	538.0	350	—	—	—	—	314.3	350	567.6	350
	460-60	414	506	256.2	300	464.2	300	—	—	—	—	264.2	300	472.2	300
	575-60	518	633	208.2	225	325.8	225	—	—	—	—	214.6	225	382.2	250
130	208/230-60	187	253	626.7	700	1068.9	700	—	—	—	—	644.4	700	1086.6	700
	380-60	342	418	327.7	350	581.1	350	—	—	—	—	337.4	350	590.8	350
	460-60	414	506	276.5	300	484.5	300	—	—	—	—	284.5	300	492.5	300
	575-60	518	633	223.3	250	391.0	250	—	—	—	—	229.7	250	397.4	250
150	208/230-60	187	253	684.3	700	1126.5	700	—	—	—	—	702.0	800	1144.2	800
	380-60	342	418	360.4	400	613.8	400	—	—	—	—	370.1	400	623.5	400
	460-60	414	506	303.2	350	511.2	350	—	—	—	—	311.2	350	519.2	350
	575-60	518	633	246.4	250	414.1	250	—	—	—	—	252.8	300	420.5	300
160	208/230-60	187	253	744.8	800	1187.0	800	—	—	—	—	762.5	800	1204.7	800
	380-60	342	418	390.1	400	643.5	400	—	—	—	—	399.8	400	653.2	400
	460-60	414	506	328.9	350	536.9	350	—	—	—	—	336.9	350	544.9	350
	575-60	518	633	265.9	300	433.5	300	—	—	—	—	272.3	300	439.9	300
170	208/230-60	187	253	802.4	1000	1244.6	1000	—	—	—	—	820.1	1000	1262.3	1000
	380-60	342	418	422.8	450	676.2	450	—	—	—	—	432.5	450	685.9	450
	460-60	414	506	355.6	400	563.6	400	—	—	—	—	363.6	400	571.6	400
	575-60	518	633	289.0	300	456.6	300	—	—	—	—	295.4	300	463.0	300
190	208/230-60	187	253	920.5	1000	1362.7	1000	—	—	—	—	938.2	1000	1380.4	1000
	380-60	342	418	485.2	500	738.5	500	—	—	—	—	494.9	500	748.2	500
	460-60	414	506	408.0	450	616.0	450	—	—	—	—	416.0	450	624.0	450
	575-60	518	633	331.5	350	499.1	350	—	—	—	—	337.9	350	505.5	350
210	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
	380-60	342	418	501.8	600	755.1	600	—	—	—	—	—	—	—	—
	460-60	414	506	422.9	450	630.9	450	—	—	—	—	—	—	—	—
	575-60	518	633	342.3	350	509.9	350	—	—	—	—	—	—	—	—
225	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
	380-60	342	418	534.5	600	787.8	600	—	—	—	—	—	—	—	—
	460-60	414	506	449.6	450	657.6	450	—	—	—	—	—	—	—	—
	575-60	518	633	365.4	400	533.0	400	—	—	—	—	—	—	—	—
250	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
	380-60	342	418	596.8	600	850.2	600	—	—	—	—	—	—	—	—
	460-60	414	506	502.0	600	710.0	600	—	—	—	—	—	—	—	—
	575-60	518	633	408.0	450	575.6	450	—	—	—	—	—	—	—	—
275	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
	380-60	342	418	659.2	700	912.6	700	—	—	—	—	—	—	—	—
	460-60	414	506	554.4	600	762.4	600	—	—	—	—	—	—	—	—
	575-60	518	633	450.5	500	618.1	500	—	—	—	—	—	—	—	—
300	208/230-60	187	253	—	—	—	—	—	—	—	—	—	—	—	—
	380-60	342	418	721.6	800	975.0	800	—	—	—	—	—	—	—	—
	460-60	414	506	606.8	700	814.8	700	—	—	—	—	—	—	—	—
	575-60	518	633	493.0	500	660.7	500	—	—	—	—	—	—	—	—

**LEGEND**

**ICF** — Instantaneous Current Flow    **MOCP** — Maximum Overcurrent Protection  
**MCA** — Minimum Circuit Amps        **XL** — Across-the-Line Start

**NOTES:**

- Units are suitable for use on electrical systems where voltage supplied to the unit terminals is not below or above the listed minimum and maximum limits. Maximum allowable phase imbalance is: voltage, 2%; amps 10%.
- All units or modules have single point primary power connection. (Each unit or module requires its own power supply.) Main power must be supplied from a field-supplied disconnect.
- Cooler heater is wired into the control circuit so it is always operable as long as the power supply disconnect is on, even if any safety device is open.
- For MCA that is less than or equal to 380 amps, 3 conductors are required.  
 For MCA between 381 and 760 amps, 6 conductors are required.  
 For MCA between 761 and 1140 amps, 9 conductors are required.  
 For MCA between 1141 and 1520 amps, 12 conductors are required.  
 Calculation of conductors required is based on 75 C copper wire.

- Wiring for main field supply must be rated 75 C minimum. Use copper for all units.
  - Incoming wire size range for the terminal block is no. 4 AWG (American Wire Gauge) to 500 kcmil.
  - Incoming wire size range of non-fused disconnect with MCA up to 599.9 amps is 3/0 to 500 kcmil.
  - Incoming wire size range of non-fused disconnect with MCA from 600 to 799.9 amps is 1/0 to 500 kcmil.
  - Incoming wire size range of non-fused disconnect with MCA from 800 to 1199.9 amps is 250 kcmil to 500 kcmil.
- Hydronic pump packages are not available as a factory-installed option for units 30RB210-390.
- Power draw includes both crankcase heaters and cooler heaters (where used). Each compressor has a crankcase heater which draws 56 watts of power. Units ordered with the cooler heater option have 1 (060-150) or 2 (160-300) cooler heaters, 825 watts each.



208/230  
460  
575 v only



### 30RB ELECTRICAL DATA — SINGLE POINT UNITS (cont)

UNIT 30RB	UNIT VOLTAGE				NO HYDRONIC PACKAGE				3 HP PUMP, 1750 RPM				5 HP PUMP, 1750 RPM			
	V-Hz (3 Ph)	Supplied		MCA	MOCP	ICF	Rec Fuse	MCA	MOCP	ICF	Rec Fuse	MCA	MOCP	ICF	Rec Fuse	
		Min	Max	XL	XL	XL	Size	XL	XL	XL	Size	XL	XL	XL	Size	
315	A	208/230-60	187	253	744.8	800	1187.0	800	—	—	—	—	—	—	—	—
		380-60	342	418	390.1	400	643.5	400	—	—	—	—	—	—	—	—
		460-60	414	506	328.9	350	536.9	350	—	—	—	—	—	—	—	—
		575-60	518	633	265.9	300	433.5	300	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	744.8	800	1187.0	800	—	—	—	—	—	—	—	—
		380-60	342	418	390.1	400	643.5	400	—	—	—	—	—	—	—	—
		460-60	414	506	328.9	350	536.9	350	—	—	—	—	—	—	—	—
		575-60	518	633	265.9	300	433.5	300	—	—	—	—	—	—	—	—
330	A	208/230-60	187	253	802.4	1000	1244.6	1000	—	—	—	—	—	—	—	—
		380-60	342	418	422.8	450	676.2	450	—	—	—	—	—	—	—	—
		460-60	414	506	355.6	400	563.6	400	—	—	—	—	—	—	—	—
		575-60	518	633	289.0	300	456.6	300	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	744.8	800	1187.0	800	—	—	—	—	—	—	—	—
		380-60	342	418	390.1	400	643.5	400	—	—	—	—	—	—	—	—
		460-60	414	506	328.9	350	536.9	350	—	—	—	—	—	—	—	—
		575-60	518	633	265.9	300	433.5	300	—	—	—	—	—	—	—	—
345	A	208/230-60	187	253	802.4	1000	1244.6	1000	—	—	—	—	—	—	—	—
		380-60	342	418	422.8	450	676.2	450	—	—	—	—	—	—	—	—
		460-60	414	506	355.6	400	563.6	400	—	—	—	—	—	—	—	—
		575-60	518	633	289.0	300	456.6	300	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	802.4	1000	1244.6	1000	—	—	—	—	—	—	—	—
		380-60	342	418	422.8	450	676.2	450	—	—	—	—	—	—	—	—
		460-60	414	506	355.6	400	563.6	400	—	—	—	—	—	—	—	—
		575-60	518	633	289.0	300	456.6	300	—	—	—	—	—	—	—	—
360	A	208/230-60	187	253	920.5	1000	1362.7	1000	—	—	—	—	—	—	—	—
		380-60	342	418	485.2	500	738.5	500	—	—	—	—	—	—	—	—
		460-60	414	506	408.0	450	616.0	450	—	—	—	—	—	—	—	—
		575-60	518	633	331.5	350	499.1	350	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	802.4	1000	1244.6	1000	—	—	—	—	—	—	—	—
		380-60	342	418	422.8	450	676.2	450	—	—	—	—	—	—	—	—
		460-60	414	506	355.6	400	563.6	400	—	—	—	—	—	—	—	—
		575-60	518	633	289.0	300	456.6	300	—	—	—	—	—	—	—	—
390	A	208/230-60	187	253	920.5	1000	1362.7	1000	—	—	—	—	—	—	—	—
		380-60	342	418	485.2	500	738.5	500	—	—	—	—	—	—	—	—
		460-60	414	506	408.0	450	616.0	450	—	—	—	—	—	—	—	—
		575-60	518	633	331.5	350	499.1	350	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	920.5	1000	1362.7	1000	—	—	—	—	—	—	—	—
		380-60	342	418	485.2	500	738.5	500	—	—	—	—	—	—	—	—
		460-60	414	506	408.0	450	616.0	450	—	—	—	—	—	—	—	—
		575-60	518	633	331.5	350	499.1	350	—	—	—	—	—	—	—	—

**LEGEND**

**ICF** — Instantaneous Current Flow    **MOCP** — Maximum Overcurrent Protection  
**MCA** — Minimum Circuit Amps        **XL** — Across-the-Line Start

**NOTES:**

- Units are suitable for use on electrical systems where voltage supplied to the unit terminals is not below or above the listed minimum and maximum limits. Maximum allowable phase imbalance is: voltage, 2%; amps 10%.
- All units or modules have single point primary power connection. (Each unit or module requires its own power supply.) Main power must be supplied from a field-supplied disconnect.
- Cooler heater is wired into the control circuit so it is always operable as long as the power supply disconnect is on, even if any safety device is open.
- For MCA that is less than or equal to 380 amps, 3 conductors are required.  
 For MCA between 381 and 760 amps, 6 conductors are required.  
 For MCA between 761 and 1140 amps, 9 conductors are required.  
 For MCA between 1141 and 1520 amps, 12 conductors are required.  
 Calculation of conductors required is based on 75 C copper wire.

- Wiring for main field supply must be rated 75 C minimum. Use copper for all units.
  - Incoming wire size range for the terminal block is no. 4 AWG (American Wire Gage) to 500 kcmil.
  - Incoming wire size range of non-fused disconnect with MCA up to 599.9 amps is 3/0 to 500 kcmil.
  - Incoming wire size range of non-fused disconnect with MCA from 600 to 799.9 amps is 1/0 to 500 kcmil.
  - Incoming wire size range of non-fused disconnect with MCA from 800 to 1199.9 amps is 250 kcmil to 500 kcmil.
- Hydronic pump packages are not available as a factory-installed option for units 30RB210-390.
- Power draw includes both crankcase heaters and cooler heaters (where used). Each compressor has a crankcase heater which draws 56 watts of power. Units ordered with the cooler heater option have 1 (060-150) or 2 (160-300) cooler heaters, 825 watts each.



208/230  
460  
575 v only

# Electrical data (cont)



## 30RB ELECTRICAL DATA — SINGLE POINT UNITS (cont)

UNIT 30RB	UNIT VOLTAGE		7.5 HP PUMP, 1750/3450 RPM				10 HP PUMP, 3450 RPM				15 HP PUMP, 3450 RPM				
	V-Hz (3 Ph)	Supplied		MCA	MOCP	ICF	Rec Fuse	MCA	MOCP	ICF	Rec Fuse	MCA	MOCP	ICF	Rec Fuse
		Min	Max	XL	XL	XL	Size	XL	XL	XL	Size	XL	XL	XL	Size
060	208/230-60	187	253	317.2	350	708.5	350	325.1	400	716.4	350	—	—	—	—
	380-60	342	418	165.0	200	376.9	175	169.3	200	381.3	200	—	—	—	—
	460-60	414	506	139.5	150	313.6	150	143.1	175	317.2	175	—	—	—	—
	575-60	518	633	111.7	125	254.0	125	114.6	125	256.9	125	—	—	—	—
070	208/230-60	187	253	360.4	450	802.7	400	368.3	450	810.6	400	—	—	—	—
	380-60	342	418	189.5	225	442.8	225	193.9	225	447.2	225	—	—	—	—
	460-60	414	506	159.5	200	367.5	175	163.1	200	371.1	175	—	—	—	—
	575-60	518	633	129.0	150	296.7	150	131.9	150	299.6	150	—	—	—	—
080	208/230-60	187	253	392.2	450	783.5	450	400.1	450	791.4	450	416.3	450	807.6	450
	380-60	342	418	203.4	225	415.3	225	207.7	225	419.7	225	216.6	250	428.5	250
	460-60	414	506	172.2	200	346.3	200	175.8	200	349.9	200	183.1	200	357.2	200
	575-60	518	633	137.9	150	280.2	150	140.8	150	283.1	150	146.6	150	288.9	150
090	208/230-60	187	253	459.3	500	901.6	500	467.2	500	909.5	500	483.4	500	925.7	500
	380-60	342	418	241.0	250	494.3	250	245.3	250	498.7	250	254.2	300	507.5	300
	460-60	414	506	203.0	225	411.0	225	206.6	225	414.6	225	213.9	250	421.9	225
	575-60	518	633	163.9	175	331.5	175	166.8	200	334.4	200	172.6	200	340.2	200
100	208/230-60	187	253	497.7	500	940.0	500	505.6	600	947.9	600	521.8	600	964.1	600
	380-60	342	418	262.8	300	516.1	300	267.1	300	520.5	300	276.0	300	529.3	300
	460-60	414	506	220.8	250	428.8	250	224.4	250	432.4	250	231.7	250	439.7	250
	575-60	518	633	179.3	200	346.9	200	182.2	200	349.8	200	188.0	200	355.6	200
110	208/230-60	187	253	534.3	600	976.6	600	542.2	600	984.5	600	558.4	600	1000.7	600
	380-60	342	418	279.4	300	532.7	300	283.7	300	537.1	300	292.6	300	545.9	300
	460-60	414	506	235.7	250	443.7	250	239.3	250	447.3	250	246.6	250	454.6	250
	575-60	518	633	190.1	200	357.7	200	193.0	225	360.6	225	198.8	225	366.4	225
120	208/230-60	187	253	603.8	700	1046.1	600	611.8	700	1054.0	700	627.9	700	1070.2	700
	380-60	342	418	318.6	350	572.0	350	323.0	350	576.4	350	331.8	350	585.2	350
	460-60	414	506	267.8	300	425.8	300	271.4	300	479.4	300	278.7	300	486.7	300
	575-60	518	633	217.5	250	385.1	250	220.4	250	388.0	250	226.2	250	393.8	250
130	208/230-60	187	253	652.3	700	1094.6	700	660.3	700	1102.5	700	676.4	700	1118.7	700
	380-60	342	418	341.8	350	595.1	350	346.1	350	599.5	350	355.0	400	608.3	400
	460-60	414	506	288.1	300	496.1	300	291.7	300	499.7	300	299.0	300	507.0	300
	575-60	518	633	232.6	250	400.3	250	235.5	250	403.2	250	241.3	250	409.0	250
150	208/230-60	187	253	709.9	800	1152.2	800	717.9	800	1160.1	800	734.0	800	1176.3	800
	380-60	342	418	374.5	400	627.8	400	378.8	400	632.2	400	387.7	400	641.0	400
	460-60	414	506	314.8	350	522.8	350	318.4	350	526.4	350	325.7	350	533.7	350
	575-60	518	633	255.7	300	423.4	300	258.6	300	426.3	300	264.4	300	432.1	300
160	208/230-60	187	253	770.4	800	1212.7	800	778.4	800	1220.6	800	794.5	800	1236.8	800
	380-60	342	418	404.1	450	657.5	450	408.5	450	661.9	450	417.3	450	670.7	450
	460-60	414	506	340.5	350	548.5	350	344.1	350	552.1	350	351.4	400	559.4	400
	575-60	518	633	275.2	300	442.8	300	278.0	300	445.7	300	283.9	300	451.5	300
170	208/230-60	187	253	828.0	1000	1270.3	1000	836.0	1000	1278.2	1000	852.1	1000	1294.4	1000
	380-60	342	418	436.8	450	690.2	450	441.2	450	694.6	450	450.0	500	703.4	500
	460-60	414	506	367.2	400	575.2	400	370.8	400	578.8	400	378.1	400	586.1	400
	575-60	518	633	298.3	300	465.9	300	301.1	350	468.8	350	307.0	350	474.6	350
190	208/230-60	187	253	946.1	1000	1388.4	1000	954.1	1000	1396.3	1000	970.2	1000	1412.5	1000
	380-60	342	418	499.2	500	752.5	500	503.6	600	756.9	600	512.4	600	765.7	600
	460-60	414	506	419.6	450	627.6	450	423.2	450	631.2	450	430.5	450	638.5	450
	575-60	518	633	340.8	350	508.4	350	343.7	350	511.3	350	349.5	350	517.1	350

### LEGEND

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MCA — Minimum Circuit Amps        XL — Across-the-Line Start

### NOTES:

- Units are suitable for use on electrical systems where voltage supplied to the unit terminals is not below or above the listed minimum and maximum limits. Maximum allowable phase imbalance is: voltage, 2%; amps 10%.
- All units and modules have single point primary power connection. (Each unit or module requires its own power supply.) Main power must be supplied from a field-supplied disconnect.
- Cooler heater is wired into the control circuit so it is always operable as long as the power supply disconnect is on, even if any safety device is open.
- For MCA that is less than or equal to 380 amps, 3 conductors are required.  
For MCA between 381 and 760 amps, 6 conductors are required.  
For MCA between 761 and 1140 amps, 9 conductors are required.  
For MCA between 1141 and 1520 amps, 12 conductors are required.  
Calculation of conductors required is based on 75 C copper wire.

- Wiring for main field supply must be rated 75 C minimum. Use copper for all units.
  - Incoming wire size range for the terminal block is no. 4 AWG (American Wire Gage) to 500 kcmil.
  - Incoming wire size range of non-fused disconnect with MCA up to 599.9 amps is 3/0 to 500 kcmil.
  - Incoming wire size range of non-fused disconnect with MCA from 600 to 799.9 amps is 1/0 to 500 kcmil.
  - Incoming wire size range of non-fused disconnect with MCA from 800 to 1199.9 amps is 250 kcmil to 500 kcmil.
- Hydronic pump packages are not available as a factory-installed option for units 30RB210-390.
- Power draw includes both crankcase heaters and cooler heaters (where used). Each compressor has a crankcase heater which draws 56 watts of power. Units ordered with the cooler heater option have 1 (060-150) or 2 (160-300) cooler heaters, 825 watts each.



208/230  
460  
575 v only



### 30RB ELECTRICAL DATA — DUAL POINT UNITS

30RB UNIT SIZE	UNIT VOLTAGE		NO HYDRONIC PACKAGE					3 HP PUMP, 1750 RPM				5 HP PUMP, 1750 RPM			
	V-Hz (3 Ph)	Supplied		MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size
		Min	Max												
060	208/230-60	187	253	168.8/141.5	225/200	560.0/532.8	200/175	179.6/141.5	250/200	570.8/532.8	200/175	186.4/141.5	250/200	577.7/532.8	225/175
	380-60	342	418	86.4/ 74.1	110/110	298.4/286.1	100/ 90	92.3/ 74.1	125/110	304.3/286.1	110/ 90	96.1/ 74.1	125/110	308.1/286.1	110/ 90
	460-60	414	506	73.6/ 62.5	100/ 90	247.7/236.6	100/ 90	78.5/ 62.5	110/ 90	252.6/236.6	90/ 80	81.6/ 62.5	110/ 90	255.7/236.6	90/ 80
	575-60	518	633	59.0/ 50.0	80/ 70	201.2/192.3	70/ 60	62.9/ 50.0	80/ 70	205.1/192.3	70/ 60	65.4/ 50.0	90/ 70	207.6/192.3	80/ 60
070	208/230-60	187	253	212.0/141.5	300/200	654.2/532.8	250/175	222.8/141.5	300/200	665.0/532.8	250/175	229.6/141.5	300/200	671.9/532.8	300/175
	380-60	342	418	110.9/ 74.1	150/110	364.3/286.1	125/ 90	116.9/ 74.1	150/110	370.2/286.1	150/ 90	120.6/ 74.1	150/110	374.0/286.1	150/ 90
	460-60	414	506	93.6/ 62.5	125/ 90	301.6/236.6	110/ 80	98.5/ 62.5	125/ 90	306.5/236.6	110/ 80	101.6/ 62.5	125/ 90	309.6/236.6	125/ 90
	575-60	518	633	76.3/ 50.0	110/ 70	243.9/192.3	90/ 60	80.2/ 50.0	110/ 70	247.8/192.3	90/ 60	82.7/ 50.0	110/ 70	250.3/192.3	100/ 60
080	208/230-60	187	253	216.5/168.8	250/225	607.8/560.0	250/200	—	—	—	—	234.2/168.8	300/225	625.5/560.0	300/200
	380-60	342	418	112.5/ 86.4	150/110	324.5/298.4	125/100	—	—	—	—	122.2/ 86.4	150/110	334.2/298.4	150/100
	460-60	414	506	95.2/ 73.6	125/100	269.3/247.7	110/ 90	—	—	—	—	103.2/ 73.6	125/100	277.3/247.7	125/ 90
	575-60	518	633	76.2/ 59.0	100/ 80	218.5/201.2	90/ 70	—	—	—	—	82.6/ 59.0	100/ 80	224.9/201.2	90/ 70
090	208/230-60	187	253	283.6/168.8	350/225	725.9/560.0	350/200	—	—	—	—	301.3/168.8	350/225	743.5/560.0	350/200
	380-60	342	418	150.1/ 86.4	175/110	403.5/298.4	175/100	—	—	—	—	159.8/ 86.4	200/110	413.2/298.4	175/100
	460-60	414	506	126.0/ 73.6	150/100	334.0/247.7	150/ 90	—	—	—	—	134.0/ 73.6	175/100	342.0/247.7	150/ 90
	575-60	518	633	102.2/ 59.0	125/ 80	269.8/201.2	125/ 70	—	—	—	—	108.6/ 59.0	125/ 80	276.2/201.2	125/ 70
100	208/230-60	187	253	283.6/212.0	350/300	725.9/654.2	350/250	—	—	—	—	301.3/212.0	350/300	743.5/654.2	350/250
	380-60	342	418	150.1/110.9	175/150	403.5/364.3	175/125	—	—	—	—	159.8/110.9	200/150	413.2/364.3	175/125
	460-60	414	506	126.0/ 93.6	150/125	334.0/301.6	150/110	—	—	—	—	134.0/ 93.6	175/125	342.0/301.6	150/110
	575-60	518	633	102.2/ 76.3	125/110	269.8/243.9	125/ 90	—	—	—	—	108.6/ 76.3	125/110	276.2/243.9	125/ 90
110	208/230-60	187	253	283.6/243.8	350/300	725.9/635.0	350/300	—	—	—	—	301.3/243.8	350/300	743.5/635.0	350/300
	380-60	342	418	150.1/124.8	175/150	403.5/336.8	175/150	—	—	—	—	159.8/124.8	200/150	413.2/336.8	175/150
	460-60	414	506	126.0/106.3	150/125	334.0/280.4	150/125	—	—	—	—	134.0/106.3	175/125	342.0/280.4	150/125
	575-60	518	633	102.2/ 85.2	125/110	269.8/227.4	125/100	—	—	—	—	108.6/ 85.2	125/110	276.2/227.4	125/100
120	208/230-60	187	253	295.5/306.2	350/400	737.8/748.4	350/350	—	—	—	—	313.2/306.2	400/400	755.7/748.4	350/350
	380-60	342	418	156.7/160.2	200/200	410.1/413.6	175/175	—	—	—	—	166.4/160.2	200/200	419.7/413.6	200/175
	460-60	414	506	131.4/135.2	150/175	339.4/343.2	150/150	—	—	—	—	139.4/135.2	175/175	347.4/343.2	150/150
	575-60	518	633	106.5/110.2	125/125	274.1/277.8	125/125	—	—	—	—	112.9/110.2	125/125	280.5/277.8	125/125
130	208/230-60	187	253	401.7/243.8	450/300	843.9/635.0	450/300	—	—	—	—	419.4/243.8	500/300	861.6/635.0	450/300
	380-60	342	418	212.5/124.8	250/150	465.9/336.8	225/150	—	—	—	—	222.2/124.8	250/150	475.6/336.8	250/150
	460-60	414	506	178.4/106.3	200/125	386.4/280.4	200/125	—	—	—	—	186.4/106.3	225/125	394.4/280.4	200/125
	575-60	518	633	144.7/ 85.2	175/110	312.4/227.4	175/100	—	—	—	—	151.1/ 85.2	175/110	318.8/227.4	175/100
150	208/230-60	187	253	401.7/306.2	450/400	843.9/748.4	450/350	—	—	—	—	419.4/306.2	500/400	861.6/748.4	450/350
	380-60	342	418	212.5/160.2	250/200	465.9/413.6	225/175	—	—	—	—	222.2/160.2	250/200	475.6/413.6	250/175
	460-60	414	506	178.4/135.2	200/175	386.4/343.2	200/150	—	—	—	—	186.4/135.2	225/175	394.4/343.2	200/150
	575-60	518	633	144.7/110.2	175/125	312.4/277.8	175/125	—	—	—	—	151.1/110.2	175/125	318.8/277.8	175/125
160	208/230-60	187	253	519.8/243.8	600/300	962.0/635.0	600/300	—	—	—	—	537.5/243.8	600/300	979.7/635.0	600/300
	380-60	342	418	274.9/124.8	300/150	528.3/336.8	300/150	—	—	—	—	284.6/124.8	300/150	538.0/336.8	300/150
	460-60	414	506	230.8/106.3	250/125	438.8/280.4	250/125	—	—	—	—	238.8/106.3	250/125	446.8/280.4	250/125
	575-60	518	633	187.3/ 85.2	200/110	354.9/227.4	200/100	—	—	—	—	193.7/ 85.2	225/110	361.3/227.4	225/100
170	208/230-60	187	253	519.8/306.2	600/400	962.0/748.4	600/350	—	—	—	—	537.5/306.2	600/400	979.7/748.4	600/350
	380-60	342	418	274.9/160.2	300/200	528.3/413.6	300/175	—	—	—	—	284.6/160.2	300/200	538.0/413.6	300/175
	460-60	414	506	230.8/135.2	250/175	438.8/343.2	250/150	—	—	—	—	238.8/135.2	250/175	446.8/343.2	250/150
	575-60	518	633	187.3/110.2	200/125	354.9/277.8	200/125	—	—	—	—	193.7/110.2	225/125	361.3/277.8	225/125
190	208/230-60	187	253	543.7/400.4	600/450	985.9/842.6	600/450	—	—	—	—	561.4/400.4	600/450	1003.6/842.6	600/450
	380-60	342	418	288.0/209.5	300/250	541.3/462.9	300/225	—	—	—	—	297.7/209.5	300/250	551.0/462.9	300/225
	460-60	414	506	241.6/176.8	250/200	449.6/384.8	250/200	—	—	—	—	249.6/176.8	250/200	457.6/384.8	250/200
	575-60	518	633	195.9/144.1	225/175	363.5/311.7	225/175	—	—	—	—	202.3/144.1	225/175	369.9/311.7	225/175
210	208/230-60	187	253	626.7/353.9	700/400	1068.9/796.2	700/400	—	—	—	—	619.9/353.9	700/400	1209.8/796.2	700/400
	380-60	342	418	327.7/186.4	350/225	581.1/439.7	350/200	—	—	—	—	327.7/186.4	350/225	581.1/439.7	350/200
	460-60	414	506	233.3/200.0	250/225	441.3/408.0	250/225	—	—	—	—	233.3/200.0	250/225	441.3/408.0	250/225
	575-60	518	633	188.8/162.0	200/175	356.4/329.6	200/175	—	—	—	—	188.8/162.0	200/175	356.4/329.6	200/175
225	208/230-60	187	253	684.3/353.9	700/400	1126.5/796.2	700/400	—	—	—	—	684.3/353.9	700/400	1265.8/796.2	700/400
	380-60	342	418	360.4/186.4	400/225	613.8/439.7	400/200	—	—	—	—	360.4/186.4	400/225	613.8/439.7	400/200
	460-60	414	506	260.0/200.0	300/225	468.0/408.0	300/225	—	—	—	—	260.0/200.0	300/225	468.0/408.0	300/225
	575-60	518	633	211.9/162.0	225/175	379.5/329.6	225/175	—	—	—	—	211.9/162.0	225/175	379.5/329.6	225/175
250	208/230-60	187	253	684.3/472.0	700/500	1126.5/914.3	700/500	—	—	—	—	684.3/472.0	700/500	1265.8/914.3	700/500
	380-60	342	418	360.4/248.7	400/250	613.8/502.1	400/250	—	—	—	—	360.4/248.7	400/250	613.8/502.1	400/250
	460-60	414	506	303.2/209.2	350/250	511.2/417.2	350/225	—	—	—	—	303.2/209.2	350/250	511.2/417.2	350/225
	575-60	518	633	246.4/170.0	250/200	414.1/337.6	250/200	—	—	—	—	246.4/170.0	250/200	414.1/337.6	250/200
275	208/230-60	187	253	920.5/353.9	1000/400	1362.7/796.2	1000/400	—	—	—	—	920.5/353.9	1000/400	1723.2/796.2	1000/400
	380-60	342	418	485.2/186.4	500/225	738.5/439.7	500/200	—	—	—	—	485.2/186.4	500/225	738.5/439.7	500/200
	460-60	414	506	408.0/156.8	450/175	616.0/364.8	450/175	—	—	—	—	408.0/156.8	450/175	616.0/364.8	450/175
	575-60	518	633	331.5/127.5	350/150	499.1/295.1	350/150	—	—	—	—	331.5/127.5	350/150	499.1/295.1	350/150
300	208/230-60	187	253	920.5/472.0	1000/500	1362.7/914.3	1000/500	—	—	—	—	920.5/472.0	1000/500	1723.2/914.3	1000/500
	380-60	342	418	485.2/248.7	500/250	738.5/502.1	500/250	—	—	—	—	485.2/248.7	500/250	738.5/502.1	500/250
	460-60	414	506	408.0/209.2	450/250	616.0/417.2	450/225	—	—	—	—	408.0/209.2	450/250	616.0/417.2	450/225
	575-60	518	633	331.5/170.0	350/200	499.1/337.6	350/200	—	—	—	—	331.5/170.0	350/200	499.1/337.6	350/200

**LEGEND**

# Electrical data (cont)



## 30RB ELECTRICAL DATA – DUAL POINT UNITS (cont)

UNIT 30RB	UNIT VOLTAGE				NO HYDRONIC PACKAGE				3 HP PUMP, 1750 RPM				5 HP PUMP, 1750 RPM			
	V-Hz (3 Ph)	Supplied		MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size	
		Min	Max													
315	A	208/230-60	187	253	519.8/243.8	600/300	962.0/635.0	600/300	—	—	—	—	—	—	—	—
		380-60	342	418	274.9/124.8	300/150	528.3/336.8	300/150	—	—	—	—	—	—	—	—
		460-60	414	506	230.8/106.3	250/125	438.8/280.4	250/125	—	—	—	—	—	—	—	—
		575-60	518	633	187.3/ 85.2	200/110	354.9/227.4	200/100	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	519.8/243.8	600/300	962.0/635.0	600/300	—	—	—	—	—	—	—	—
		380-60	342	418	274.9/124.8	300/150	528.3/336.8	300/150	—	—	—	—	—	—	—	—
		460-60	414	506	230.8/106.3	250/125	438.8/280.4	250/125	—	—	—	—	—	—	—	—
		575-60	518	633	187.3/ 85.2	200/110	354.9/227.4	200/100	—	—	—	—	—	—	—	—
330	A	208/230-60	187	253	519.8/306.2	600/400	962.0/748.4	600/350	—	—	—	—	—	—	—	—
		380-60	342	418	274.9/160.2	300/200	528.3/413.6	300/175	—	—	—	—	—	—	—	—
		460-60	414	506	230.8/135.2	250/125	438.8/343.2	250/150	—	—	—	—	—	—	—	—
		575-60	518	633	187.3/110.2	200/125	354.9/277.8	200/125	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	519.8/243.8	600/300	962.0/635.0	600/300	—	—	—	—	—	—	—	—
		380-60	342	418	274.9/124.8	300/150	528.3/336.8	300/150	—	—	—	—	—	—	—	—
		460-60	414	506	230.8/106.3	250/125	438.8/280.4	250/125	—	—	—	—	—	—	—	—
		575-60	518	633	187.3/ 85.2	200/110	354.9/227.4	200/100	—	—	—	—	—	—	—	—
345	A	208/230-60	187	253	519.8/306.2	600/400	962.0/748.4	600/350	—	—	—	—	—	—	—	—
		380-60	342	418	274.9/160.2	300/200	528.3/413.6	300/175	—	—	—	—	—	—	—	—
		460-60	414	506	230.8/135.2	250/125	438.8/343.2	250/150	—	—	—	—	—	—	—	—
		575-60	518	633	187.3/110.2	200/125	354.9/277.8	200/125	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	519.8/306.2	600/400	962.0/748.4	600/350	—	—	—	—	—	—	—	—
		380-60	342	418	274.9/160.2	300/200	528.3/413.6	300/175	—	—	—	—	—	—	—	—
		460-60	414	506	230.8/135.2	250/125	438.8/343.2	250/150	—	—	—	—	—	—	—	—
		575-60	518	633	187.3/110.2	200/125	354.9/277.8	200/125	—	—	—	—	—	—	—	—
360	A	208/230-60	187	253	543.7/400.4	600/450	985.9/842.6	600/450	—	—	—	—	—	—	—	—
		380-60	342	418	288.0/209.5	300/250	541.3/462.9	300/225	—	—	—	—	—	—	—	—
		460-60	414	506	241.6/176.8	250/200	449.6/384.8	250/200	—	—	—	—	—	—	—	—
		575-60	518	633	195.9/144.1	225/175	363.5/311.7	225/175	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	519.8/306.2	600/400	962.0/748.4	600/350	—	—	—	—	—	—	—	—
		380-60	342	418	274.9/160.2	300/200	528.3/413.6	300/175	—	—	—	—	—	—	—	—
		460-60	414	506	230.8/135.2	250/125	438.8/343.2	250/150	—	—	—	—	—	—	—	—
		575-60	518	633	187.3/110.2	200/125	354.9/277.8	200/125	—	—	—	—	—	—	—	—
390	A	208/230-60	187	253	543.7/400.4	600/450	985.9/842.6	600/450	—	—	—	—	—	—	—	—
		380-60	342	418	288.0/209.5	300/250	541.3/462.9	300/225	—	—	—	—	—	—	—	—
		460-60	414	506	241.6/176.8	250/200	449.6/384.8	250/200	—	—	—	—	—	—	—	—
		575-60	518	633	195.9/144.1	225/175	363.5/311.7	225/175	—	—	—	—	—	—	—	—
	B	208/230-60	187	253	543.7/400.4	600/450	985.9/842.6	600/450	—	—	—	—	—	—	—	—
		380-60	342	418	288.0/209.5	300/250	541.3/462.9	300/225	—	—	—	—	—	—	—	—
		460-60	414	506	241.6/176.8	250/200	449.6/384.8	250/200	—	—	—	—	—	—	—	—
		575-60	518	633	195.9/144.1	225/175	363.5/311.7	225/175	—	—	—	—	—	—	—	—

### LEGEND

ICF — Instantaneous Current Flow (Ckt1/Ckt2)  
MCA — Minimum Circuit Amps (Ckt1/Ckt2)  
MOCP — Maximum Overcurrent Protection (Ckt1/Ckt2)  
XL — Across-the-Line Start

### NOTES:

- Units are suitable for use on electrical systems where voltage supplied to the unit terminals is not below or above the listed minimum and maximum limits. Maximum allowable phase imbalance is: voltage, 2%; amps 10%.
- Control power is derived from main power. No separate control power connection is required.
- Cooler heater is wired into the control circuit so it is always operable as long as the power supply disconnect is on, even if any safety device is open.
- For MCA that is less than or equal to 380 amps, 3 conductors are required.  
For MCA between 381 and 760 amps, 6 conductors are required.  
For MCA between 761 and 1140 amps, 9 conductors are required.  
For MCA between 1141 and 1520 amps, 12 conductors are required.  
Calculation of conductors required is based on 75 C copper wire.

- Wiring for main field supply must be rated 75 C minimum. Use copper for all units.
  - Incoming wire size range for the terminal block is no. 4 AWG (American Wire Gauge) to 500 kcmil.
  - Incoming wire size range of non-fused disconnect with MCA up to 599.9 amps is 3/0 to 500 kcmil.
  - Incoming wire size range of non-fused disconnect with MCA from 600 to 799.9 amps is 1/0 to 500 kcmil.
  - Incoming wire size range of non-fused disconnect with MCA from 800 to 1199.9 amps is 250 kcmil to 500 kcmil.
- Hydronic pump packages are not available as a factory-installed option for units 30RB210-390.
- Power draw includes both crankcase heaters and cooler heaters (where used). Each compressor has a crankcase heater which draws 56 watts of power. Units ordered with the cooler heater option have 1 (060-150) or 2 (160-300) cooler heaters, 825 watts each.



208/230  
460  
575 v only





### 30RB ELECTRICAL DATA — DUAL POINT UNITS (cont)

30RB UNIT SIZE	UNIT VOLTAGE		7.5 HP PUMP, 1750/3450 RPM				10 HP PUMP, 3450 RPM				15 HP PUMP, 3450 RPM			
	V-Hz (3 Ph)	Supplied	MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size	MCA	MOCP	ICF	Rec Fuse Size
		Min												
060	208/230-60	187 253	194.4/141.5	250/200	585.7/532.8	225/175	202.4/141.5	250/200	593.6/532.8	225/175	—	—	—	—
	380-60	342 418	100.4/ 74.1	125/110	312.4/286.1	125/ 90	104.8/ 74.1	125/110	316.8/286.1	125/ 90	—	—	—	—
	460-60	414 506	85.2/ 62.5	110/ 90	259.3/236.6	100/ 80	88.8/ 62.5	110/ 90	262.9/236.6	100/ 80	—	—	—	—
	460-60	414 506	85.2/ 62.5	110/ 90	259.3/236.6	100/ 80	88.8/ 62.5	110/ 90	262.9/236.6	100/ 80	—	—	—	—
	575-60	518 633	68.2/ 50.0	90/ 70	210.5/192.3	80/ 60	71.1/ 50.0	90/ 70	213.4/192.3	80/ 60	—	—	—	—
070	208/230-60	187 253	237.6/141.5	300/200	679.9/532.8	300/175	245.6/141.5	300/200	687.8/532.8	300/175	—	—	—	—
	380-60	342 418	125.0/ 74.1	150/110	378.3/286.1	150/ 90	129.3/ 74.1	175/110	382.7/286.1	150/ 90	—	—	—	—
	460-60	414 506	105.2/ 62.5	125/ 90	313.2/236.6	125/ 80	108.8/ 62.5	150/ 90	316.8/236.6	125/ 80	—	—	—	—
	460-60	414 506	105.2/ 62.5	125/ 90	313.2/236.6	125/ 80	108.8/ 62.5	150/ 90	316.8/236.6	125/ 80	—	—	—	—
	575-60	518 633	85.6/ 50.0	110/ 70	253.2/192.3	100/ 60	88.4/ 50.0	110/ 70	256.1/192.3	100/ 60	—	—	—	—
080	208/230-60	187 253	242.2/168.8	300/225	633.4/560.0	300/200	250.1/168.8	300/225	641.4/560.0	300/200	266.3/168.8	300/225	657.5/560.0	300/200
	380-60	342 418	126.6/ 86.4	150/110	338.6/298.4	150/100	130.9/ 86.4	150/110	342.9/298.4	150/100	139.8/ 86.4	175/110	351.8/298.4	150/100
	460-60	414 506	106.8/ 73.6	125/100	280.9/247.7	125/ 90	110.4/ 73.6	125/100	284.5/247.7	125/ 90	117.7/ 73.6	150/100	291.8/247.7	150/ 90
	460-60	414 506	106.8/ 73.6	125/100	280.9/247.7	125/ 90	110.4/ 73.6	125/100	284.5/247.7	125/ 90	117.7/ 73.6	150/100	291.8/247.7	150/ 90
	575-60	518 633	85.5/ 59.0	110/ 80	227.8/201.2	100/ 70	88.4/ 59.0	110/ 80	230.6/201.2	100/ 70	94.2/ 59.0	110/ 80	236.5/201.2	110/ 70
090	208/230-60	187 253	309.3/168.8	400/225	751.5/560.0	350/200	317.2/168.8	400/225	759.5/560.0	350/200	333.4/168.8	400/225	775.6/560.0	400/200
	380-60	342 418	164.2/ 86.4	200/110	417.6/298.4	200/100	168.5/ 86.4	200/110	421.9/298.4	200/100	177.4/ 86.4	225/110	430.8/298.4	200/100
	460-60	414 506	137.6/ 73.6	175/100	345.6/301.6	150/ 90	141.2/ 73.6	175/100	349.2/247.7	175/ 90	148.5/ 73.6	175/100	356.5/247.7	175/ 90
	460-60	414 506	137.6/ 73.6	175/100	345.6/301.6	150/ 90	141.2/ 73.6	175/100	349.2/247.7	175/ 90	148.5/ 73.6	175/100	356.5/247.7	175/ 90
	575-60	518 633	111.5/ 59.0	125/ 80	279.1/201.2	125/ 70	114.4/ 59.0	125/ 80	282.0/201.2	125/ 70	120.2/ 59.0	150/ 80	287.8/201.2	150/ 70
100	208/230-60	187 253	309.3/212.0	400/300	751.5/654.2	350/250	317.2/212.0	400/300	759.5/654.2	350/250	333.4/212.0	400/300	775.6/654.2	400/250
	380-60	342 418	164.2/110.9	200/150	417.6/364.3	200/125	168.5/110.9	200/150	421.9/364.3	200/125	177.4/110.9	225/150	430.8/364.3	200/125
	460-60	414 506	137.6/ 93.6	175/125	345.6/301.6	150/110	141.2/ 93.6	175/125	349.2/301.6	175/110	148.5/ 93.6	175/125	356.5/301.6	175/110
	460-60	414 506	137.6/ 93.6	175/125	345.6/301.6	150/110	141.2/ 93.6	175/125	349.2/301.6	175/110	148.5/ 93.6	175/125	356.5/301.6	175/110
	575-60	518 633	111.5/ 76.3	125/110	279.1/243.9	125/ 90	114.4/ 76.3	125/110	282.0/243.9	125/ 90	120.2/ 76.3	150/110	287.8/243.9	150/ 90
110	208/230-60	187 253	309.3/243.8	400/300	751.5/635.0	350/300	317.2/243.8	400/300	759.5/635.0	350/300	333.4/243.8	400/300	775.6/635.0	400/300
	380-60	342 418	164.2/124.8	200/150	417.6/336.8	200/150	168.5/124.8	200/150	421.9/336.8	200/150	177.4/124.8	225/150	430.8/336.8	200/150
	460-60	414 506	137.6/106.3	175/125	345.6/280.4	150/125	141.2/106.3	175/125	349.2/280.4	175/125	148.5/106.3	175/125	356.5/280.4	175/125
	460-60	414 506	137.6/106.3	175/125	345.6/280.4	150/125	141.2/106.3	175/125	349.2/280.4	175/125	148.5/106.3	175/125	356.5/280.4	175/125
	575-60	518 633	111.5/ 85.2	125/110	279.1/227.4	125/100	114.4/ 85.2	125/110	282.0/227.4	125/100	120.2/ 85.2	150/110	287.8/227.4	150/100
120	208/230-60	187 253	321.2/306.2	400/400	763.5/748.4	350/350	329.2/306.2	400/400	771.4/748.4	400/350	345.3/306.2	400/400	787.6/748.4	400/350
	380-60	342 418	170.7/160.2	200/200	424.1/413.6	200/175	175.1/160.2	200/200	428.5/413.6	200/175	183.9/160.2	225/200	437.3/413.6	200/175
	460-60	414 506	143.0/135.2	175/175	351.0/343.2	175/150	146.6/135.2	175/175	354.6/343.2	175/150	153.9/135.2	175/175	361.9/343.2	175/150
	460-60	414 506	143.0/135.2	175/175	351.0/343.2	175/150	146.6/135.2	175/175	354.6/343.2	175/150	153.9/135.2	175/175	361.9/343.2	175/150
	575-60	518 633	115.8/110.2	125/125	283.4/277.8	125/125	118.7/110.2	150/125	286.3/277.8	150/125	124.5/110.2	150/125	292.1/277.8	150/125
130	208/230-60	187 253	321.2/306.2	400/300	869.6/635.0	500/300	435.3/243.8	500/300	877.6/635.0	500/300	451.4/243.8	500/300	893.7/635.0	500/300
	380-60	342 418	226.6/124.8	250/150	479.9/336.8	250/150	230.9/124.8	250/150	484.3/336.8	250/150	239.8/124.8	250/150	493.1/336.8	250/150
	460-60	414 506	190.0/106.3	225/125	398.0/280.4	225/125	193.6/106.3	225/125	401.6/280.4	225/125	200.9/106.3	225/125	408.9/280.4	225/125
	460-60	414 506	190.0/106.3	225/125	398.0/280.4	225/125	193.6/106.3	225/125	401.6/280.4	225/125	200.9/106.3	225/125	408.9/280.4	225/125
	575-60	518 633	154.0/ 85.2	175/110	321.6/227.4	175/100	156.9/ 85.2	175/110	324.5/227.4	175/100	162.7/ 85.2	175/110	330.4/227.4	175/110
150	208/230-60	187 253	427.3/306.2	500/400	869.6/748.4	500/350	435.3/306.2	500/400	877.6/748.4	500/350	451.4/306.2	500/400	893.7/748.4	500/350
	380-60	342 418	226.6/160.2	250/200	479.9/413.6	250/175	230.9/160.2	250/200	484.3/413.6	250/175	239.8/160.2	250/200	493.1/413.6	250/175
	460-60	414 506	190.0/135.2	225/175	398.0/343.2	225/150	193.6/135.2	225/175	401.6/343.2	225/150	200.9/135.2	225/175	408.9/343.2	225/150
	460-60	414 506	190.0/135.2	225/175	398.0/343.2	225/150	193.6/135.2	225/175	401.6/343.2	225/150	200.9/135.2	225/175	408.9/343.2	225/150
	575-60	518 633	154.0/110.2	175/125	321.6/277.8	175/125	156.9/110.2	175/125	324.5/277.8	175/125	162.7/110.2	175/125	330.4/277.8	175/125
160	208/230-60	187 253	545.4/243.8	600/300	987.7/635.0	600/300	553.4/243.8	600/300	995.6/635.0	600/300	569.5/243.8	600/300	1011.8/635.0	600/300
	380-60	342 418	288.9/124.8	300/150	542.3/336.8	300/150	293.3/124.8	300/150	546.7/336.8	300/150	302.1/124.8	350/150	555.5/336.8	350/150
	460-60	414 506	242.4/106.3	250/125	450.4/280.4	250/125	246.0/106.3	250/125	454.0/280.4	250/125	253.3/106.3	300/125	461.3/280.4	300/125
	460-60	414 506	242.4/106.3	250/125	450.4/280.4	250/125	246.0/106.3	250/125	454.0/280.4	250/125	253.3/106.3	300/125	461.3/280.4	300/125
	575-60	518 633	196.6/ 85.2	225/110	364.2/227.4	225/100	199.4/ 85.2	225/110	367.1/227.4	225/100	205.3/ 85.2	225/110	372.9/227.4	225/100
170	208/230-60	187 253	545.4/306.2	600/400	987.7/748.4	600/350	553.4/306.2	600/400	995.6/748.4	600/350	569.5/306.2	600/400	1011.8/748.4	600/350
	380-60	342 418	288.9/160.2	300/200	542.3/413.6	300/175	293.3/160.2	300/200	546.7/413.6	300/175	302.1/160.2	350/200	555.5/413.6	350/175
	460-60	414 506	242.4/135.2	250/175	450.4/343.2	250/150	246.0/135.2	250/175	454.0/343.2	250/150	253.3/135.2	300/175	461.3/343.2	300/150
	460-60	414 506	242.4/135.2	250/175	450.4/343.2	250/150	246.0/135.2	250/175	454.0/343.2	250/150	253.3/135.2	300/175	461.3/343.2	300/150
	575-60	518 633	196.6/110.2	225/125	364.2/277.8	225/125	199.4/110.2	225/125	367.1/277.8	225/125	205.3/110.2	225/125	372.9/277.8	225/125
190	208/230-60	187 253	569.3/400.4	600/450	1011.6/842.6	600/450	577.3/400.4	600/450	1019.5/842.6	600/450	593.4/400.4	600/450	1035.7/842.6	600/450
	380-60	342 418	302.0/209.5	350/250	555.4/462.9	350/225	306.4/209.5	350/250	559.7/462.9	350/225	315.2/209.5	350/250	568.6/462.9	350/225
	460-60	414												

# Electrical data (cont)



## POWER ENTRY

30RB UNIT SIZE	VOLTAGE 3 ph, 60 Hz	SINGLE POINT POWER CONNECTION			DUAL POINT POWER CONNECTION		
		COMBI	PEB1	PEB2	COMBI	PEB1	PEB2
060-120	208/230*	Circuit 1			Circuit 1 Circuit 2		
	380*	Circuit 1			Circuit 1 Circuit 2		
	460*	Circuit 1			Circuit 1 Circuit 2		
	575*	Circuit 1			Circuit 1 Circuit 2		
130-190, 315-390† with NFD	208/230	Circuit 1			Circuit 1	Circuit 2	
	380		Circuit 1		Circuit 2	Circuit 1	
	460		Circuit 1		Circuit 2	Circuit 1	
	575		Circuit 1		Circuit 2	Circuit 1	
130-190, 315-390* without NFD	208/230	Circuit 1			Circuit 1	Circuit 2	
	380		Circuit 1			Circuit 1 Circuit 2	
	460		Circuit 1			Circuit 1 Circuit 2	
	575		Circuit 1			Circuit 1 Circuit 2	
210, 225 with NFD	208/230	N/A			Circuit 1		Circuit 2
	380		Circuit 1			Circuit 1	Circuit 2
	460		Circuit 1		Circuit 2	Circuit 1	
	575		Circuit 1		Circuit 2	Circuit 1	
210, 225 without NFD	208/230	N/A			Circuit 1		Circuit 2
	380		Circuit 1			Circuit 1	Circuit 2
	460		Circuit 1			Circuit 1 Circuit 2	
	575		Circuit 1			Circuit 1 Circuit 2	
250-300	208/230	N/A			Circuit 1		Circuit 2
	380		Circuit 1			Circuit 1	Circuit 2
	460		Circuit 1			Circuit 1	Circuit 2
	575		Circuit 1			Circuit 1	Circuit 2

### LEGEND

**COMBI** — Combination Box  
**N/A** — Not Available  
**NFD** — Non-Fused Disconnect  
**PEB** — Power Electrical Box

\*Not available with dual point power connections and non-fused disconnects.

†Power supply listed is per module. If single point is ordered, the A and B module will require single point power connections to EACH module. If dual point is ordered, the A and B module will require dual point power connections to EACH module.

NOTE: Refer to the Controls and Power Wiring Schematic on page 60.



### CONDENSER FAN ELECTRICAL DATA

UNIT 30RB	UNIT VOLTAGE V-Hz (3 Ph)	STANDARD CONDENSER FANS					
		Circuit A Quantity	FLA (each)	Circuit B Quantity	FLA (each)	Circuit C Quantity	FLA (each)
060, 070	208/230-60	3	11.9	1	11.9	—	—
	380-60	3	6.5	1	6.5	—	—
	460-60	3	5.4	1	5.4	—	—
	575-60	3	4.3	1	4.3	—	—
080	208/230-60	2	11.9	2	11.9	—	—
	380-60	2	6.5	2	6.5	—	—
	460-60	2	5.4	2	5.4	—	—
	575-60	2	4.3	2	4.3	—	—
090, 100, 110	208/230-60	3	11.9	3	11.9	—	—
	380-60	3	6.5	3	6.5	—	—
	460-60	3	5.4	3	5.4	—	—
	575-60	3	4.3	3	4.3	—	—
120	208/230-60	3	11.9	4	11.9	—	—
	380-60	3	6.5	4	6.5	—	—
	460-60	3	5.4	4	5.4	—	—
	575-60	3	4.3	4	4.3	—	—
130, 150	208/230-60	4	11.9	4	11.9	—	—
	380-60	4	6.5	4	6.5	—	—
	460-60	4	5.4	4	5.4	—	—
	575-60	4	4.3	4	4.3	—	—
160,170, 315A, 315B, 330A, 330B, 345A, 345B, 360B	208/230-60	6	11.9	4	11.9	—	—
	380-60	6	6.5	4	6.5	—	—
	460-60	6	5.4	4	5.4	—	—
	575-60	6	4.3	4	4.3	—	—
190, 360A, 390A, 390B	208/230-60	6	11.9	6	11.9	—	—
	380-60	6	6.5	6	6.5	—	—
	460-60	6	5.4	6	5.4	—	—
	575-60	6	4.3	6	4.3	—	—
210, 225	208/230-60	4	11.9	4	11.9	4	11.9
	380-60	4	6.5	4	6.5	4	6.5
	460-60	4	5.4	4	5.4	4	5.4
	575-60	4	4.3	4	4.3	4	4.3
250	208/230-60	4	11.9	4	11.9	6	11.9
	380-60	4	6.5	4	6.5	6	6.5
	460-60	4	5.4	4	5.4	6	5.4
	575-60	4	4.3	4	4.3	6	4.3
275	208/230-60	6	11.9	6	11.9	4	11.9
	380-60	6	6.5	6	6.5	4	6.5
	460-60	6	5.4	6	5.4	4	5.4
	575-60	6	4.3	6	4.3	4	4.3
300	208/230-60	6	11.9	6	11.9	6	11.9
	380-60	6	6.5	6	6.5	6	6.5
	460-60	6	5.4	6	5.4	6	5.4
	575-60	6	4.3	6	4.3	6	4.3

LEGEND

FLA — Full Load Amps

### PUMP ELECTRICAL DATA

PUMP HP	UNIT VOLTAGE V-Hz (3 Ph)	HYDRONIC SYSTEM (SINGLE/DUAL) FLA (each)	USED ON 30RB SIZES*
3	208/230-60	10.8	060, 070
	380-60	5.9	
	460-60	4.9	
	575-60	3.9	
5	208/230-60	17.7	060-190
	380-60	9.7	
	460-60	8.0	
	575-60	6.4	
7.5	208/230-60	25.7	060-190
	380-60	14.0	
	460-60	11.6	
	575-60	9.3	
10	208/230-60	33.6	060-190
	380-60	18.4	
	460-60	15.2	
	575-60	12.2	
15	208/230-60	49.8	080-190
	380-60	27.2	
	460-60	22.5	
	575-60	18.0	

LEGEND

FLA — Full Load Amps

\*Hydronic pump packages are not available as a factory-installed option for units 30RB210-390.



## Microprocessor

The *ComfortLink*™ microprocessor controls overall unit operation. Its central executive routine controls a number of processes simultaneously. These include internal timers, reading inputs, analog to digital conversions, fan control, display control, diagnostic control, output relay control, demand limit, capacity control, head pressure control, and temperature reset. Some processes are updated almost continuously, others every 2 to 3 seconds, and some every 30 seconds. The microprocessor routine is started by switching the Emergency ON-OFF switch to ON position. Pump control of external pumps (where so configured) or optional internal pump, will energize the cooler pump to the internal (or CCN) time schedule (or input occupied signal from external system).

Where dual pumps are utilized only one pump will be operated at a time. The control will start the pump with the least hours. When the unit receives a call for cooling (based on a deviation from chilled water set point), the unit stages up in capacity to maintain the cooler fluid set point. The first compressor starts 1 to 3 minutes after the call for cooling. The *ComfortLink* microprocessor controls the capacity of the chiller by cycling compressors at a rate to satisfy actual dynamic load conditions. The control maintains leaving-fluid temperature set point shown on the Scrolling Marquee display board through intelligent cycling. Accuracy depends on loop volume, loop flow rate, load, outdoor-air temperature, number of stages, and particular stage being cycled off. No adjustment for cooling range or cooler flow rate is required, because the control automatically compensates for cooling range by measuring both return-fluid temperature and leaving-fluid temperature. This is referred to as leaving-fluid temperature control with return-fluid temperature compensation.

The basic logic for determining when to add or remove a stage is a time band integration of deviation from set point plus rate of change of leaving-fluid temperature. When leaving-fluid temperature is close to set point and slowly moving closer, logic prevents addition of another stage.

If 1° F per minute (0.6° C per minute) pulldown control has been selected (adjustable setting), no additional steps of capacity are added as long as the difference between leaving-fluid temperature and set point is greater than 4° F (2.2° C) and rate of change in leaving-fluid temperature is greater than the selected pulldown control rate. If it has been less than 90 seconds since the last capacity change, compressors will continue to run unless a safety device trips. This prevents rapid cycling and also helps return oil during short on periods.

## Sensors

Thermistors are used to control temperature-sensing inputs to microprocessor. Additional thermistor sensors may be used as remote temperature sensors for optional LCWT reset.

- Cooler leaving chilled fluid temperature (T1)
- Cooler entering fluid (return) temperature (T2)
- Outside-air temperature (T9)

Two refrigerant pressure transducers are used in each circuit for sensing suction and discharge pressure. The microprocessor uses these inputs to control capacity and fan cycling.

- Saturated condensing temperature
- Cooler saturation temperature

## Control sequence

**Off cycle** — If ambient temperature is below 36 F (2 C), cooler heaters (if equipped) are also energized.

**Start-up** — After the control circuit switches on, the pre-start process takes place, then microprocessor checks itself, starts pump (if configured) and waits for temperature to stabilize. The controlled pulldown feature limits compressor loading on start-up to reduce demand on start-up and unnecessary compressor usage. The microprocessor limits supply-fluid temperature decrease (start-up only) to 1° F (0.6° C) per minute.

**Capacity control** — On first call for cooling, microprocessor starts initial compressor and fan stage on lead circuit.

As additional cooling is required, additional compressors are energized.

Speed at which capacity is added or reduced is controlled by temperature deviation from set point and rate of temperature change of chilled fluid.

The Main Base Board (MBB) responds to the supply chilled water temperature to cycle the compressors to match cooling load requirements.

Minimum Load control valve is energized by the MBB. Valve allows hot gas to pass directly into the cooler circuit on the final step of unloading, permitting the unit to operate at lower loads with less compressor cycling.

## Additional information

Detailed information on controls and operation is available in the Controls, Start-Up, Operation and Troubleshooting guide included with each unit. Packaged Service Training programs are also available. Contact your Carrier representative for more information.

**Dual chiller control** — The *ComfortLink*™ controller allows 2 chillers (piped in series or parallel) to operate as a single chilled water plant with standard control functions coordinated through the master chiller controller. This standard *ComfortLink* feature requires a communication link between the 2 chillers and an additional thermistor for parallel operation.

**Dynamic ComfortLink controls** — Dynamic *ComfortLink* controls keep the chiller on line during periods of extreme operating conditions. If the entering fluid temperature is 85 F (29 C) or higher and the saturated suction temperature is 50 F (10 C) or higher the maximum operating pressure (MOP) feature limits the suction to keep the chiller online. The control automatically starts the chiller in the unloaded state to eliminate the potential of compressor overload due to high head pressure or low suction pressure. The controller will equalize run time on each circuit through the lead/lag feature. If a circuit becomes disabled, the control will automatically set the active circuit to lead, keeping the chiller online at a reduced capacity.



# Controls (cont)



## CAPACITY CONTROL STEPS\*

UNIT 30RB	STANDARD CAPACITY STEPS (%)
060	0, 33, 67, 100
070	0, 29, 64, 100
080	0, 25, 50, 75, 100
090	0, 22, 50, 72, 100
100	0, 25, 50, 75, 100
110	0, 18, 41, 59, 82, 100
120	0, 20, 40, 60, 80, 100
130	0, 15, 33, 48, 67, 81, 100
150	0, 17, 33, 50, 67, 83, 100
160	0, 13, 28, 41, 56, 69, 84, 100
170	0, 14, 29, 43, 57, 71, 86, 100
190	0, 13, 25, 38, 50, 63, 75, 88, 100
210	0, 10, 21, 33, 43, 55, 67, 76, 88, 100
225	0, 11, 22, 33, 44, 56, 67, 78, 89, 100
250	0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100
275	0, 9, 18, 27, 36, 45, 55, 64, 73, 82, 91, 100
300	0, 8, 17, 25, 33, 42, 50, 58, 67, 75, 83, 92, 100
315	0, 6, 14, 20, 28, 34, 42, 50, 56, 64, 70, 78, 84, 92, 100
330	0, 6, 13, 19, 27, 33, 40, 48, 55, 63, 70, 78, 85, 93, 100
345	0, 7, 14, 21, 29, 36, 43, 50, 57, 64, 71, 79, 86, 93, 100
360	0, 7, 13, 20, 27, 33, 40, 47, 53, 60, 67, 73, 80, 87, 93, 100
390	0, 6, 13, 19, 25, 31, 38, 44, 50, 56, 63, 69, 75, 81, 88, 94, 100

\*Capacity control steps may vary due to compressor sequencing.

**Standard ComfortLink™ controls with Scrolling Marquee display** — A four-digit alphanumeric display shows all of the *ComfortLink* control codes (with 60-character expandable clear language), plus set points, time of day, temperatures, pressures, and superheat. Additional information can be displayed all at once with the accessory Navigator™ display.

**Navigator™ display** — An optional 4-line, 20-character per line display is also available as a field-installed accessory.

**Low-temperature override** — This feature prevents LCWT (leaving chilled fluid temperature) from overshooting the set point and possibly causing a nuisance trip-out by the freeze protection.

**High-temperature override** — This feature allows chiller to add capacity quickly during rapid load variations.

**Abnormal conditions** — All control safeties in chiller operate through compressor protection board or control relay and microprocessor.

Loss of feedback signal to the MBB will cause the compressor(s) to shut down. For other safeties, microprocessor makes appropriate decision to shut down a compressor due to a safety trip or bad sensor reading and displays appropriate failure code on the display. Chiller holds in safety mode until reset. It then reverts to normal control when unit is reset.

**Low-pressure safety** — Safety cuts out if system pressure drops below minimum.

**High-pressure cutout** — Switch shuts down compressors if compressor discharge pressure increases to 641 psig (4420 kPa).

**Compressor anti-cycling** — This feature limits compressor cycling.

**Loss of flow protection** — Proof of flow switches are standard and installed on all 30RB chillers.

**Sensor failures** — Failures are detected by the microprocessor.

**Dual chiller control** — The *ComfortLink* controller allows 2 chillers (piped in parallel) to operate as a single chilled water plant with standard control functions coordinated through the master chiller controller. This standard *ComfortLink* feature requires a communication link between the 2 chillers.

### Temperature reset

The Energy Management Module (EMM) is required for 4 to 20 mA reset of LCWT in constant fluid systems. Reset by return fluid, outdoor-air temperature, or space temperature does not require this option. Reset reduces compressor power usage at part load when design LCWT is not necessary. Humidity control should be considered since higher coil temperatures resulting from reset will reduce latent heat capacity. Three reset options are offered, based on the following:

**Return-fluid temperature** — Increases LCWT set point as return (or entering) fluid temperature decreases (indicating load decrease). Option may be used in any application where return fluid provides accurate load indication. Limitation of return fluid reset is that LCWT may only be reset to value of design return fluid temperature.

**Outdoor-air temperature** — Increases LCWT as outdoor ambient temperature decreases (indicating load decrease). This reset should be applied only where outdoor ambient temperature is an accurate indication of load. An accessory thermistor is required.

**Space temperature** — Increases LCWT as space temperature decreases (indicating load decrease). This reset should be applied only where space temperature is an accurate indication of load. An accessory thermistor and the energy management module accessory is required.

For details on applying a reset option, refer to unit Controls and Troubleshooting literature. Obtain ordering part numbers for reset option from the Packaged Chiller Builder program or contact your local Carrier representative.

### Accessory controls

Demand can be limited by controlling the chiller capacity through the demand limit control (the Energy Management Module is required for this function). This FIOP/accessory interfaces with microprocessor to control unit so that chiller's kW demand does not exceed its setting. It is activated from an external switch or a 4 to 20 mA signal.

The standard *ComfortLink* control is programmed to accept various accessory temperature reset options (based on outdoor-air temperature [std], return-fluid temperature, or space temperature), that reset the LCWT. An accessory thermistor (T10) is required if outdoor-air temperature or space temperature reset is selected. The Energy Management Module (EMM) is only required for temperature reset that is initiated by a 4 to 20 mA signal.



### **Demand limit**

If applied, limits the total power draw of unit to selected point by controlling number of operational compressors during periods of peak electrical demand.

The Energy Management Module is required for either 2-step or 4 to 20 mA demand limit.

### **Electronic expansion valve (EXV)**

The EXV controls refrigerant flow to the cooler for different operating conditions by moving an orifice to increase or decrease the flow area through the valve based on microprocessor input. The orifice is positioned by a stepper motor through approximately 3,600 discrete steps and is monitored every three seconds. The EXV maintains an approximate 8° F (5° C) refrigerant superheat entering the compressor.

### **Diagnostics**

The microprocessor may be put through a service test (see Controls, Start-Up, Operation, Service, and Troubleshooting literature). Service test confirms microprocessor is functional, informs observer through display the condition of each sensor and switch in chiller, and allows observer to check for proper operation of fans and compressors.

### **Default settings**

To facilitate quick start-ups, 30RB chillers with *ComfortLink* controls are pre-configured with a default setting that assumes stand-alone operation supplying 44 F (6.7 C) chilled water.

Configuration settings will be based on any options or accessories included with the unit at the time of manufacturing.

Date and time are set to U.S.A. Eastern Time zone and will need reconfiguring based on location and local time zone. If operation based on occupancy scheduling is desired, this will also need to be set during installation.

### **Ice duty**

*ComfortLink* controls have the capability of reduced leaving fluid temperature operation for thermal storage, or ice duty. The optional Energy Management display includes input contacts for the “ice done” signal generated by the thermal storage control system. The ice duty feature may be configured to start on an external input command or by the *ComfortLink* standard internal scheduling function. The ice duty function requires brine modification for leaving fluid temperatures below 40 F (4.4 C). Ice duty may be used in combination with any other standard features offered by the Energy Management Module and *ComfortLink* controls.

The production of ice, which is stored for peak cooling demands, can significantly decrease energy costs. The unit produces ice (normally at night) by supplying ice storage tanks with low temperature cooling fluid. The chiller takes advantage of reduced ambient conditions at night for ice-making mode, so the capacity suffers a lower penalty for the low leaving fluid temperatures.

At peak cooling demands the chiller and the stored ice may share the cooling load to reduce operating costs. The thermal storage system may potentially reduce the size of the chiller plant required to meet demand loads.



# Control and power wiring schematic

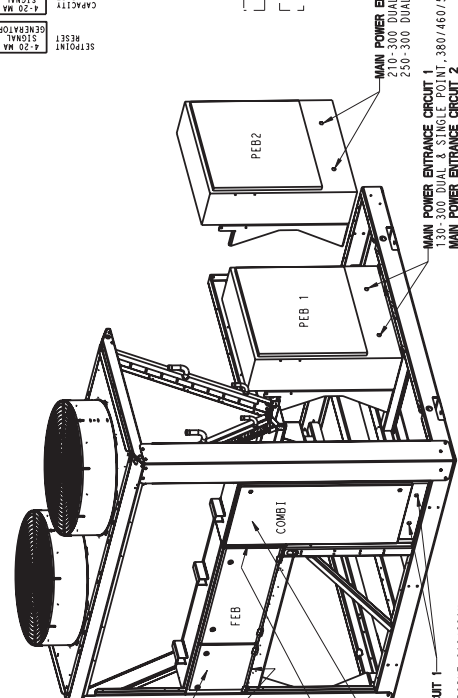
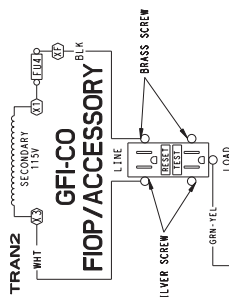


### NOTES:

- FACTORY WIRING IS IN ACCORDANCE WITH UL 1995 STANDARDS. FIELD MODIFICATIONS OR ADDITIONS MUST BE IN COMPLIANCE WITH ALL APPLICABLE CODES.
- WIRING FOR MAIN FIELD SUPPLY MUST BE RATED 75C MINIMUM. USE COPPER FOR ALL UNITS. INCOMING WIRE SIZE RANGE FOR THE TERMINAL BLOCK IS 44 AWG TO 500 KCMIL. INCOMING WIRE SIZE RANGE OF NON-FUSED DISCONNECT WITH MCA FROM 10 TO 589.9 AMPS IS 3/0 TO 500 KCMIL. INCOMING WIRE SIZE RANGE OF NON-FUSED DISCONNECT WITH MCA FROM 800 TO 1199.9 AMPS IS 250 KCMIL TO 500 KCMIL. INCOMING WIRE SIZE RANGE OF NON-FUSED DISCONNECT WITH MCA FROM 1200 TO 1499.9 AMPS IS 250 KCMIL TO 500 KCMIL.
- TERMINALS 9 AND 10 OF TBS ARE FOR FIELD EXTERNAL CONNECTIONS FOR REMOTE ON-OFF. THE CONTACTS MUST BE RATED FOR DRY CIRCUIT APPLICATION CAPABLE OF HANDLING A 24VAC LOAD UP TO 50 MA.
- TERMINALS 11 AND 12 OF TBS ARE FOR EXTERNAL CONNECTIONS OF CHILLED WATER PUMP INTERLOCK. THE CONTACTS MUST BE RATED FOR DRY CIRCUIT APPLICATION CAPABLE OF HANDLING A 24VAC LOAD UP TO 50 MA.
- TERMINALS 13 AND 14 OF TBS ARE FOR CONTROL OF CHILLED WATER PUMP1 (PMP1) STARTER. TERMINALS 15 AND 16 OF TBS ARE FOR CONTROL OF CHILLED WATER PUMP2 (PMP2) STARTER. TERMINALS 17 AND 18 OF TBS ARE FOR CONTROL OF CHILLED WATER PUMP3 (PMP3) STARTER. INRUSH AT 24V. FIELD POWER SUPPLY IS NOT REQUIRED.
- FOR CONTROL OF CHILLED WATER PUMPS, A SET OF NORMALLY OPEN CONTACTS RATED FOR DRY CIRCUIT APPLICATION MUST BE SUPPLIED FROM FIELD SUPPLIED PUMP STARTER RELAY. CONTACTS TO VIOLET AND PINK WIRES IN HARNESS FROM MAIN BASE BOARD CHANNEL 18. WIRES IN HARNESS ARE MARKED PMP1-13 AND PMP1-14.
- ALARM RELAY IS TO VA SEALED, 25 VA INRUSH AT 24V. FIELD POWER SUPPLY IS NOT REQUIRED. MAKE APPROPRIATE CONNECTIONS TO TBS AS SHOWN FOR ENERGY MANAGEMENT BOARD OPTIONS. THE CONTACTS FOR OCCUPANCY OVERRIDE, DEMAND LIMIT AND ICE DONE OPTIONS MUST BE RATED FOR DRY CIRCUIT APPLICATION CAPABLE OF HANDLING A 24VAC LOAD UP TO 50 MA.

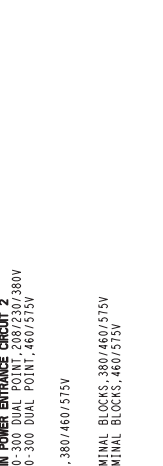
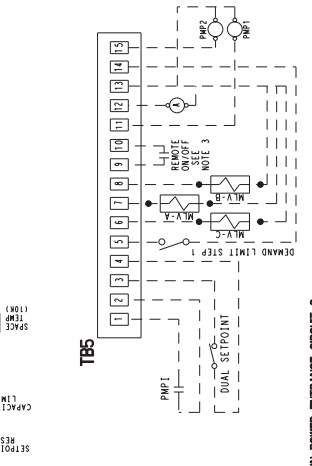
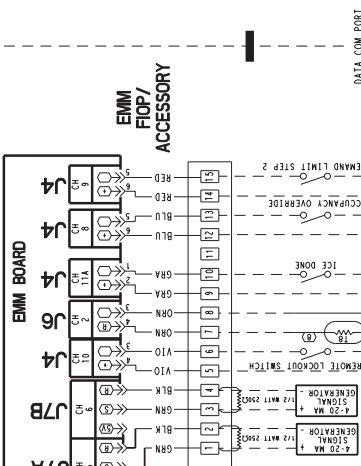
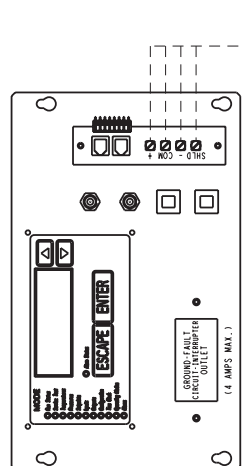
LEGEND:  
 A - ALARM  
 CWP - CHILLED WATER PUMP INTERLOCK  
 PMP1 - CHILLED WATER PUMP  
 PMP2 - CHILLED WATER PUMP  
 EMM - ENERGY MANAGEMENT BOARD  
 TBS - TERMINAL BLOCK  
 --- FIELD POWER WIRING  
 --- FIELD CONTROL WIRING  
 --- FACTORY INSTALLED WIRING

DUPLIX UNITS	SIZE	STD. UNIT
315A-B	160	
330A	170	
345A-B	190	
360A		
390A-B		

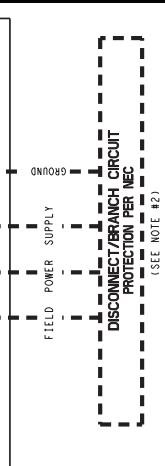
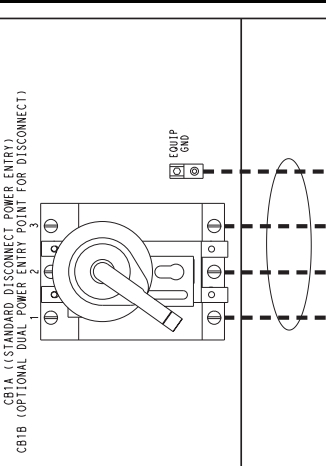
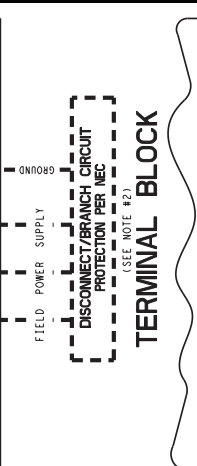
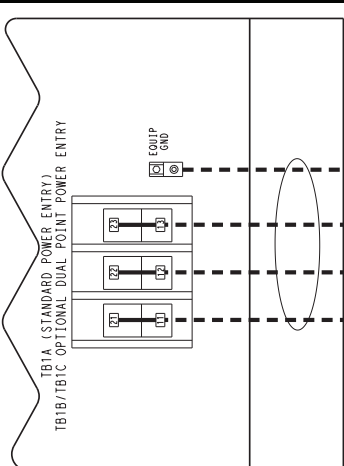


TYPICAL CONTROL BOX LOCATIONS AND MAIN POWER ENTRY

- 060-300/230V DISPLAY LOCATION
- 060-070/230V FIELD CONTROL WIRING ENTRY
- 060-120/380/460/575V FIELD CONTROL WIRING ENTRY
- 060-120/380/460/575V DISPLAY LOCATION
- 060-070/230V FIELD CONTROL WIRING ENTRY
- 060-120/380/460/575V DISPLAY LOCATION
- 060-120/380/460/575V FIELD CONTROL WIRING ENTRY
- 060-120/380/460/575V DISPLAY LOCATION
- 060-120/380/460/575V FIELD CONTROL WIRING ENTRY
- 060-120/380/460/575V DISPLAY LOCATION
- 060-120/380/460/575V FIELD CONTROL WIRING ENTRY
- 060-120/380/460/575V DISPLAY LOCATION
- 060-120/380/460/575V FIELD CONTROL WIRING ENTRY
- 060-120/380/460/575V DISPLAY LOCATION
- 060-120/380/460/575V FIELD CONTROL WIRING ENTRY



MAIN POWER ENTRANCE CIRCUIT 1  
 130-300 DUAL & SINGLE POINT, 380/460/575V  
 MAIN POWER ENTRANCE CIRCUIT 2  
 210-300 DUAL POINT, 208/230V  
 210-190 DUAL POINT, 208/230V  
 210-225 DUAL POINT WITH TERMINAL BLOCKS, 460/575V



NON-FUSED DISCONNECT (SEE NOTE #2)

# Application data

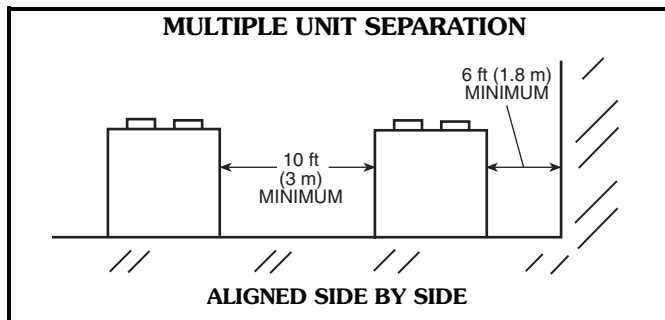


## Chiller location and clearances

Do not locate near sound sensitive areas without proper acoustic consideration. For applications requiring mounting a chiller on a building rooftop, consideration should be given to using rubber-in-shear or spring isolators to minimize structure-borne transmission. Unit must be level when installed to ensure proper oil return to the compressors. Clearances must be provided around chillers for airflow, service and local code requirements. See dimensional drawings for specific unit clearance requirements. Ensure adequate clearance between adjacent chillers is maintained. A minimum of 10 ft (3048 mm) is recommended. Chiller fan discharge must be at least as high as adjacent solid walls. Installation in pits is not recommended.

## Oversizing chillers

Oversizing chillers by more than 15% at design conditions must be avoided as the system operating efficiency is adversely affected (resulting in greater or excessive electrical demand). When future expansion of equipment is anticipated, install a single chiller to meet present load requirements and add a second chiller to meet the additional load demand. It is also recommended that 2 smaller chillers be installed where operation at minimum load is critical. The operation of a smaller chiller loaded to a greater percentage over minimum is preferred to operating a single chiller at or near its minimum recommended value.



Minimum Load Control should not be used as a means to allow oversizing chillers. Minimum Load Control should be given consideration where substantial operating time is anticipated below the minimum unloading step.

**Piping duplex units** — The 30RB duplex chillers are shipped and rigged as 2 separate units. The units must be piped in parallel. Module A must be placed on the return side, Module B should be placed on the leaving chilled water side. Minimum spacing of 42 to 48-in. (depending on local codes) between chillers is recommended to provide adequate service access and piping clearance. If the accessory trim kit is used; the modules must be aligned according to the criteria given in the accessory installation instruction. A flexible pipe coupling should be used to allow for module misalignment. Grooved pipe fittings are recommended for use on the interconnecting piping to allow maintenance (cooler tube cleaning) access and to avoid excessive weld slag form being flushed through the cooler during initial start-up.

## Multiple chillers

Where chiller capacities greater than can be supplied by a single 30RB chiller are required, or where stand-by capability is desired, chillers may be installed in parallel. Units may be of the same or different sizes. However, cooler flow rates must be balanced to ensure proper flow to each chiller.

Where applied in parallel with optional hydronic package, expansion tank must be disconnected and a single expansion tank must be installed in the common header.

Unit software is capable of controlling two units as a single plant. Refer to the Controls, Start-up, Operation, Service, and Troubleshooting guide for further details. The accessory Chillervisor System Manager can be used to ensure proper staging sequence of up to 8 chillers. Isolated valves on individual chiller pumps are recommended for parallel chiller arrangements. Refer to the accessory Chillervisor System Manager installation instructions for further details. Hydronic pump package may not be applied in series applications.

## Series chillers

Where a large temperature drop (greater than 20 F [11.1 C]) is desired or where chiller capacities greater than can be supplied by a single 30RB chiller are required or where stand-by capability is required, chillers may be installed in series. The leaving fluid temperature sensors need not be relocated. However, the cooler minimum entering fluid temperature limitations should be considered for the chillers located downstream of other chillers. Use of reduced pass heads may be required to keep waterside pressure drop at an acceptable level.

## Minimum clearances

The recommended minimum clearance to ensure proper airflow through the condenser coils and to allow fan maintenance is as shown below.

Acceptable clearance on the cooler connection side or end opposite the control box of the unit can be reduced to 3 feet (1 m) without sacrificing performance as long as the remaining three sides are unrestricted. Acceptable clearance on the side with a control box can be reduced to 4 ft (1.3 m) due to NEC (National Electric Code) regulations, without sacrificing performance as long as the remaining three sides are unrestricted.

## Cooler water temperature

1. Maximum leaving chilled water temperature (LCWT) for the unit is 60 F (15.6 C). Unit can start and pull down with up to 95 F (35 C) entering-water temperature. It is recommended that entering-water temperature not exceed 80 F (26.7 C).
2. Minimum LCWT for standard unit is 40 F (4.4 C). For leaving-fluid temperatures between 30 and 39.9 F (-1.1 C and 3.28 C) an inhibited antifreeze solution is required. Application of chiller to 30 F (-1.1 C) is possible by ordering the factory-installed medium temperature brine option.

NOTE: Water flowing through cooler should not exceed 100 F (38 C).

# Application data (cont)



## Strainers

It is recommended that a strainer with a minimum of 20 mesh be installed in the cooler fluid inlet line, just ahead of (and as close as possible) to the cooler.

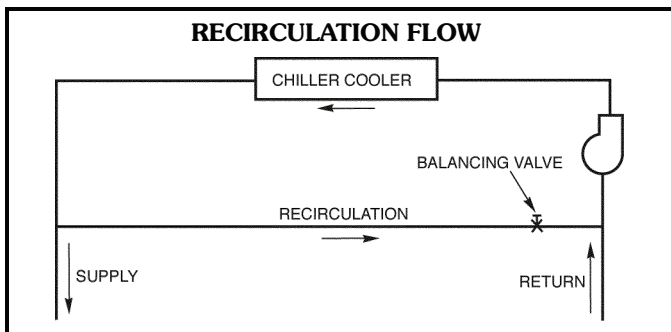
## Cooler flow/range

Ratings and performance data in this publication are for a cooling temperature rise of 10° F (6° C). The 30RB chillers may be operated at a different temperature rise, providing flow limits are not exceeded and corrections to system guidelines are made. For minimum and maximum cooler flow rates, see the Minimum and Maximum Cooler Flow Rates table. A high flow rate is generally limited by the maximum pressure drop that can be tolerated by the unit. The 30RB chillers are designed for a full load temperature rise of 5° to 20° F (2.8° to 11.1° C). Use the Packaged Chiller Builder Program to obtain the rating if a temperature rise other than 10° F (6° C) is used.

**Minimum cooler flow (maximum cooler temperature rise)** — The minimum cooler flow for standard units is shown in Minimum Cooler Fluid Flow Rates table. When system design conditions require a lower flow (or higher rise) than the minimum allowable cooler flow, follow the recommendations below.

- Multiple smaller chillers may be applied in series, each providing a portion of the design temperature rise.
- Cooler fluid may be recirculated to raise the flow rate to the chiller. However, the mixed temperature entering cooler must be maintained a minimum of at least 5° F (2.8° C) above the LCWT.

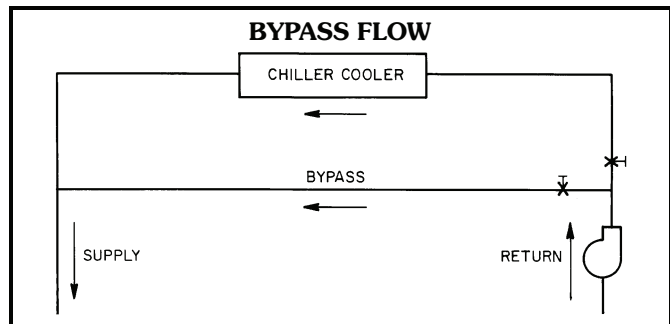
NOTE: Recirculation flow is shown below.



**Maximum cooler flow** — The maximum cooler flow (approximately 5° F [2.8° C] rise) results in a practical maximum pressure drop through cooler.

Return fluid may bypass the cooler to keep the pressure drop through the cooler within acceptable limits. This permits a higher delta T with lower fluid flow through cooler and mixing after the cooler.

NOTE: Bypass flow is shown below.



## Variable cooler flow rates

Variable rates may be applied to a standard chiller. The unit will, however, attempt to maintain a constant leaving chilled water temperature. In such cases, minimum flow must be in excess of minimum flow given in the Minimum and Maximum Cooler Fluid Flow Rates table, and minimum fluid volume must be in excess of 3 gallons per ton (3.2 L per kW). Flow rate must change in steps of less than 10% per minute. Apply 6 gal. or more per ton (6.5 L per kW) water loop volume minimum if flow rate changes more rapidly.

## MINIMUM AND MAXIMUM COOLER FLOW RATES

### SIZES 060-300

30RB SIZE	MINIMUM COOLER FLOW RATE (gpm)	MAXIMUM COOLER FLOW RATE (gpm)	MINIMUM LOOP VOLUME (gal.)	MINIMUM COOLER FLOW RATE (l/s)	MAXIMUM COOLER FLOW RATE (l/s)	MINIMUM LOOP VOLUME (liters)
060	72	288	180	5	18	681
070	84	336	210	5	21	795
080	96	384	240	6	24	908
090	108	432	270	7	27	1022
100	120	480	300	8	30	1136
110	132	528	330	8	33	1249
120	144	576	360	9	36	1363
130	156	624	390	10	39	1476
150	180	720	450	11	45	1703
160	192	768	480	12	48	1817
170	204	816	510	13	51	1931
190	228	912	570	14	58	2158
210	252	1008	630	16	64	2385
225	270	1080	675	17	68	2555
250	300	1200	750	19	76	2839
275	330	1320	825	21	83	3123
300	360	1440	900	23	91	3407

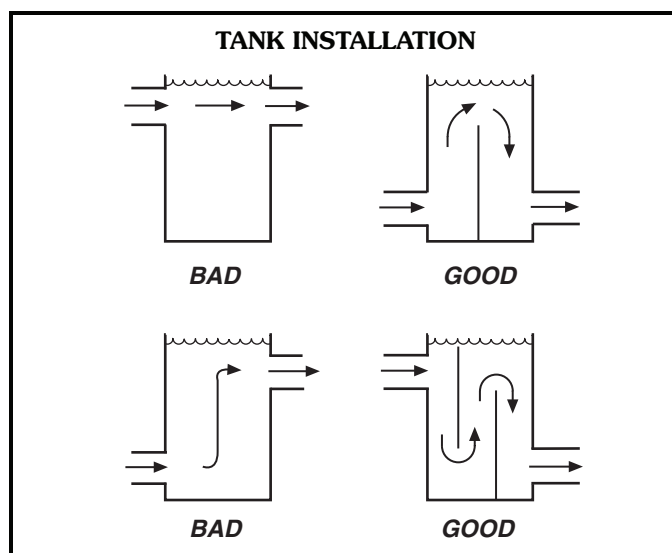
### SIZES 315-390

30RB SIZE	MINIMUM COOLER FLOW RATE (gpm)		MAXIMUM COOLER FLOW RATE (gpm)		MINIMUM LOOP VOLUME (gal.)	MINIMUM COOLER FLOW RATE (l/s)		MAXIMUM COOLER FLOW RATE (l/s)		MINIMUM LOOP VOLUME (liters)
	Module A	Module B	Module A	Module B		Module A	Module B	Module A	Module B	
315	192	192	768	768	945	12	12	48	48	3577
330	192	204	768	816	990	12	13	48	51	3748
345	204	204	816	816	1035	13	13	51	51	3918
360	204	228	816	912	1080	13	14	51	58	4088
390	228	228	912	912	1170	14	14	58	58	4429

### Fluid loop volume

The volume in circulation must equal or exceed 3 gal. per nominal ton (3.25 L per kW) of cooling for temperature stability and accuracy in normal air conditioning applications. In process cooling applications, or for operation at ambient temperature below 32 F (0° C) with low loading conditions, there should be from 6 to 10 gal. per ton (6.5 to 10.8 L per kW). To achieve this volume, it is often necessary to install a tank in the loop.

Tank should be baffled to ensure there is no stratification and that water (or brine) entering tank is adequately mixed with liquid in the tank.



### Cooler fouling factor

The fouling factor used to calculate tabulated ratings is 0.00010 ft<sup>2</sup> · hr · °F/Btu (0.000018 m<sup>2</sup> · °C/W). As fouling factor is increased, unit capacity decreases and compressor power increases. Corrections to published ratings can be approximated by using following multipliers:

#### FOULING FACTORS

FOULING FACTOR (English) (ft <sup>2</sup> ·hr·F/Btu)	FOULING FACTOR (SI) (m <sup>2</sup> ·C/kW)	CAPACITY MULTIPLIER	COMPRESSOR POWER MULTIPLIER
.00025	.000044	0.991	0.995
.00050	.000088	0.977	0.987
.00075	.000132	0.955	0.979
.00175	.000308	0.910	0.952

### Cooler and hydronic system freeze protection

Freeze protection for down to -20 F (-28.9 C) for the cooler and hydronic package is available as a factory-installed option. Since power is sometimes lost for extended periods during winter storms, freeze protection provided by heater tapes will be effective only if a back-up power supply can be assured for the unit's control circuit, heater and cooler pump. If not protected with an antifreeze solution, draining the cooler and outdoor piping is recommended if the system will not be used during freezing weather conditions.

# Application data (cont)



Two conditions that must be considered when determining antifreeze concentration are leaving water set point and ambient freeze conditions. Both of these parameters can help determine the recommended concentration level. Higher concentration must be used to adequately protect the machine.

NOTE: Use only antifreeze solutions approved for heat exchanger duty.

For applications in which the leaving water temperature set point is less than 40 F (4.4 C), a suitable inhibited antifreeze solution must be used. The solution concentration must be sufficient to protect the chilled water loop to a freeze protection (first crystals) concentration of at least 15° F (8.3° C) below the leaving water temperature set point.

If the chiller refrigerant or fluid lines are in an area where ambient conditions fall below 34° F (1° C), it is required that an antifreeze solution be added to protect the unit and fluid piping to a temperature of 15° F (8.3° C) below the lowest anticipated ambient temperature.

Select concentration based on either burst or freeze protection as dictated by the application. If the chiller does not operate during the winter, nor is a start-up expected, a burst protection concentration is recommended. This concentration may not be high enough to pump the fluid through the unit. Burst protection is typically a lower concentration that will provide better performance from the machine. If the chiller does operate during winter, a freeze protection concentration is recommended. This concentration will be high enough to keep the fluid in a condition that it can be pumped at low ambient conditions.

**IMPORTANT:** Glycol anti-freeze solutions are highly recommended since heater tapes provide no protection in the event of a power failure.

Consult glycol fluid manufacturers for burst protection recommendations and fluid specifications.

## High ambient temperature operation

High outdoor ambient chiller start-up and operation is possible for standard 30RB chillers at ambient temperatures up to 125 F (52 C) at nominal voltage. In some cases, where return water temperature is expected to exceed 60 F (15.5 C), an accessory kit may be required.

## Low ambient temperature operation

Units will start and operate down to 32 F (0° C) as standard.

NOTE: Minimum load on chiller must be above the minimum step of unloading.

Operation to -20 F (-29 C) requires optional low ambient head pressure control as well as wind baffles (field fabricated and installed to all units for operation below 32 F [0° C]) if wind velocity is anticipated to be greater than 5 mph (8 km/h). Inhibited propylene glycol or other suitable corrosion-resistant anti-freeze solution must be field supplied and installed in all units for unit operation below 34 F (1° C). Solution must be added to fluid loop to protect loop down to 15° F (8° C) below minimum operating ambient temperature. Concentration should be based on

expected minimum temperature and either “Burst” or “Freeze” protection levels. At least 6 gal per ton (6.5 L per kW) of fluid volume is the recommended minimum for a moderate system load.

## Altitude correction factors

Correction factors must be applied to standard ratings at altitudes above 2000 ft (610 m) using the following multipliers:

**ALTITUDE CORRECTION FACTORS**

ALTITUDE (ft)	ALTITUDE (m)	CAPACITY MULTIPLIER	COMPRESSOR POWER MULTIPLIER
2,000	610	0.99	1.01
4,000	1220	0.98	1.02
6,000	1830	0.97	1.03
8,000	2440	0.96	1.04
10,000	3050	0.95	1.05

**Condenser airflow** — Airflow restrictions on units with standard fans will affect the unit capacity, condenser head pressure, and compressor power input. Correction factors to be applied for external static restrictions up to 0.2 in. wg (50 Pa) are as follows:

EXTERNAL STATIC		CAPACITY MULTIPLIER	COMPRESSOR POWER MULTIPLIER
in. wg	Pa		
0.0	0.0	1.000	1.00
0.1	25	0.986	1.01
0.2	50	0.968	1.03

## Condenser coil protection (*Enviro-Shield™*)

Refer to the Environmental Corrosion Protection white paper for more information.

**Pre-coated aluminum-fin coils** have a durable epoxy-phenolic coating applied to the fin prior to the fin stamping process to provide protection in mildly corrosive coastal environments. Pre-coated coils have an inert barrier between the aluminum fin and copper tube. This barrier electrically disconnects the dissimilar metals to minimize the potential for galvanic corrosion. This economical option provides substantial corrosion protection beyond the standard uncoated coil construction.

**Copper-fin coils** provide increased corrosion resistance in moderate coastal environments where industrial air pollution is not present. All copper coils eliminate bimetallic construction to eliminate the potential for galvanic corrosion. Application in industrial environments is not recommended due to potential attack from sulfur, sulfur oxide, nitrogen oxides, carbon and several other industrial airborne contaminants. In moderate seacoast environments, copper-fin coils have extended life compared to standard or pre-coated aluminum-fin coils.

**E-coated aluminum-fin coils** have an extremely flexible and durable epoxy coating uniformly applied to all coil surfaces. Unlike brittle phenolic dip and bake coatings, E-coat provides superior protection with unmatched flexibility, edge coverage, metal adhesion, thermal performance and most importantly, corrosion resistance. E-coated coils provide this protection since all coil surfaces are completely encapsulated from environmental contamination.



Specify E-coated aluminum-fin coils for industrial environments with high levels of air pollution. This option also provides better protection compared to standard or pre-coated aluminum-fin coils in industrial environments.

**E-coated copper-fin coils** have the same flexible and durable epoxy coating as E-coated aluminum-fin coils. However, this option combines the natural salt and environmental resistance of all-copper construction with the highest level of corrosion protection. Specify E-coated copper-fin coils in the harshest combination of coastal and industrial environments.

### Electrical/utility interests

**Energy management** — Use of energy management practices can significantly reduce operating costs, especially during off-peak modes of operation. Demand limiting and temperature reset are 2 techniques for accomplishing efficient energy management. See Demand Limiting (also called load shedding) section below for further details.

### Demand limiting (load shedding)

When a utility's demand for electricity exceeds a certain level, loads are shed to keep electricity demand below a prescribed maximum level. Typically, this happens on hot days when air conditioning is most needed. The Energy Management Module (EMM) can be added to accomplish this reduction. Demand may be limited on unit by resetting fluid temperature, or by unloading the chiller to a given predetermined percentage of the load. Demand limit may also be driven by an external 4 to 20 mA signal. These features require a signal from an intelligent central control. Do not cycle demand limiter for less than 10 minutes on and 5 minutes off. Duty cycling cycles electrical loads at regular intervals regardless of need. This reduces the electrical operating costs of building by "fooling" demand indicating devices. Duty cycling of compressors or fans is not recommended since motor winding and bearing life will suffer from constant cycling.

### Remote on-off control

Remote on-off control may be applied by hard-wired connection (see Controls and Troubleshooting literature) or by connection to a Carrier Comfort Network® (CCN) system.

### Optional hydronic system selection

Select pump gpm from resulting chiller selection and total pressure loss in the system plus the chiller internal pressure loss.

NOTE: Maximum gpm (L/s), pressure and pump hp must not exceed maximum on pump curve.

Pump flow can be reduced by using the factory-supplied triple-duty valve up to 10%. Beyond that, impeller trimming is recommended to reduce energy consumption. Follow local codes or ASHRAE 90.1 recommendations. Contact your Carrier representative for specific amount of trim required.

The 30RB AquaSnap® chiller will require a field-supplied expansion tank when the optional pumping package is provided.

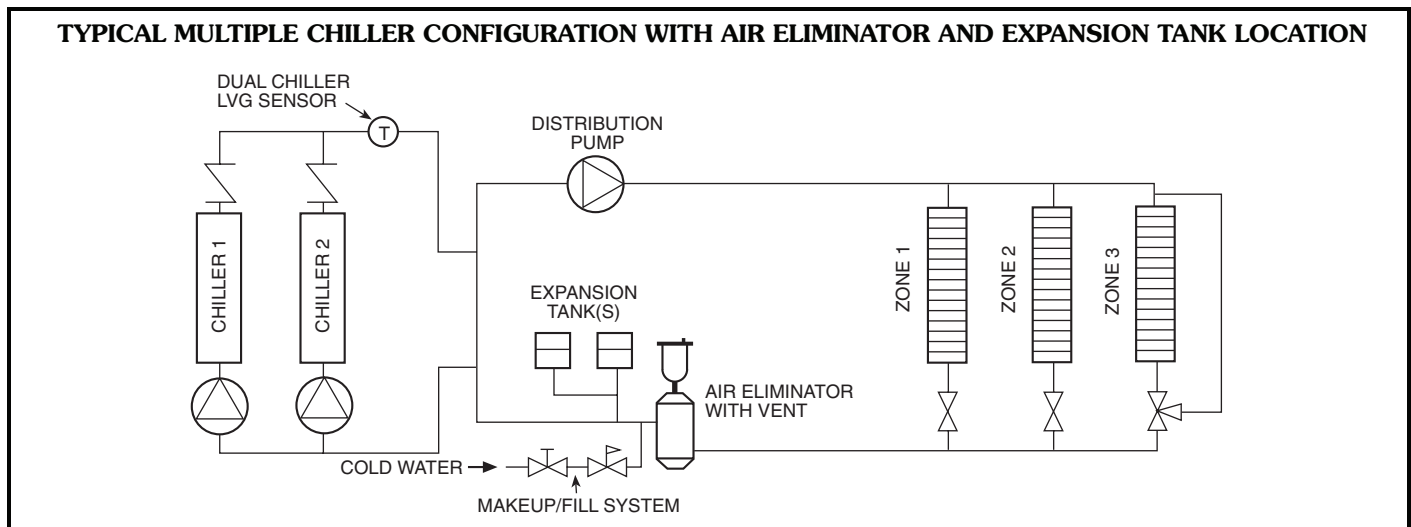
The expansion tank is based on fluid type, temperature range, fluid pressure and loop volume.

Parallel chillers with hydronic packages require that pump inlets be equalized to prevent pump cavitation. Pump expansion tanks must be removed and located together in the common pump suction header. All materials needed for expansion tank relocation are field supplied. Appropriate measures must be taken for freeze protection.

### Air separation

The 30RB AquaSnap chiller will require a field-supplied air separation device when the optional pumping package is provided.

Air must be controlled in a hydronic system if it is to perform properly. Air can block the flow of chilled water to its destinations and can cause cavitation in the pump, which will aerate the pump and potentially cause pump failure. The air separator is sized according to the total flow through the system. The air separator should be located inside the building. There are several types of air separators to choose from. For more information and product selection contact your local manufacturer's representative.



# Guide specifications



## Air-Cooled Liquid Chiller

### HVAC Guide Specifications

Size Range: **60 to 390 Tons**  
**(210 to 1370 kW) Nominal**

Carrier Model Number: **30RB**

#### Part 1 — General

##### 1.01 SYSTEM DESCRIPTION

Microprocessor controlled, air-cooled liquid chiller utilizing scroll compressors, low sound fans and optional hydronic pump system.

NOTE: Hydronic pump packages are only available on 30RB060-190 units.

##### 1.02 QUALITY ASSURANCE

- A. Unit shall be rated in accordance with ARI Standard 550/590, latest revision (U.S.A.).
- B. Unit construction shall comply with ASHRAE 15 Safety Code, UL 1995, and ASME applicable codes (U.S.A. codes).
- C. Unit shall be manufactured in a facility registered to ISO 9001:2000 Manufacturing Quality Standard.
- D. Unit shall be full load run tested at the factory.

##### 1.03 DELIVERY, STORAGE AND HANDLING

- A. Unit controls shall be capable of withstanding 150 F (66 C) storage temperatures in the control compartment.
- B. Unit shall be stored and handled per unit manufacturer's recommendations.

#### Part 2 — Products

##### 2.01 EQUIPMENT

###### A. General:

Factory assembled, single-piece or factory-matched duplex chassis, air-cooled liquid chiller. Contained within the unit cabinet shall be all factory wiring, piping, controls, refrigerant charge (R-410A), and special features required prior to field start-up.

###### B. Unit Cabinet:

1. Frame shall be of heavy-gage, painted galvanized steel.
2. Cabinet shall be galvanized steel casing with a baked enamel powder or pre-painted finish.
3. Cabinet shall be capable of withstanding 500-hour salt spray test in accordance with the ASTM (U.S.A.) B-117 standard.

###### C. Fans:

1. Condenser fans shall be direct-driven, 9-blade airfoil cross-section, reinforced polymer construction, shrouded-axial type, and shall be statically and dynamically balanced with inherent corrosion resistance.
2. Air shall be discharged vertically upward.
3. Fans shall be protected by coated steel wire safety guards.

###### D. Compressor/Compressor Assembly:

1. Fully hermetic scroll type compressors.
2. Direct drive, 3500 rpm (60 Hz), protected by motor temperature sensors, suction gas cooled motor.
3. External vibration isolation rubber-in-shear.
4. Each compressor shall be equipped with crank-case heaters to minimize oil dilution.

###### E. Cooler:

1. Shell-and-tube type, direct expansion.
2. Tubes shall be internally enhanced seamless-copper type rolled into tube sheets.
3. Shall be equipped with Victaulic-type fluid connections.
4. Shell shall be insulated with  $\frac{3}{4}$ -in. (19-mm) PVC foam (closed-cell) with a maximum K factor of 0.28.
5. Design shall incorporate a minimum of 2 independent direct-expansion refrigerant circuits.
6. Cooler shall be tested and stamped in accordance with ASME Code for a refrigerant working side pressure of 445 psig (3068 kPa). Cooler shall have a maximum fluid-side pressure of 300 psig (2068 kPa).

###### F. Condenser:

1. Coil shall be air-cooled with integral subcooler, and shall be constructed of aluminum fins mechanically bonded to seamless copper tubes.
2. Tubes shall be cleaned, dehydrated, and sealed.
3. Assembled condenser coils shall be leak tested and pressure tested at 656 psig (4522 kPa).

###### G. Refrigeration Components:

Refrigerant circuit components shall include replaceable-core filter drier, moisture indicating sight glass, electronic expansion device, discharge service valve and liquid line service valves, and complete operating charge of both refrigerant R-410A and compressor oil.

###### H. Controls, Safeties, and Diagnostics:

1. Unit controls shall include the following minimum components:
  - a. Microprocessor with non-volatile memory. Battery backup system shall not be accepted.
  - b. Separate terminal block for power and controls.
  - c. Control transformer to serve all controllers, relays, and control components.
  - d. ON/OFF control switch.
  - e. Replaceable solid-state controllers.
  - f. Pressure sensors installed to measure suction and discharge pressure. Thermistors installed to measure cooler entering and leaving fluid temperatures.





2. Unit controls shall include the following functions:
  - a. Automatic circuit lead/lag.
  - b. Hermetic scroll compressors are maintenance free and protected by an auto-adaptive control that minimizes compressor wear.
  - c. Capacity control based on leaving chilled fluid temperature and compensated by rate of change of return-fluid temperature with temperature set point accuracy to 0.1° F (0.06° C).
  - d. Limiting the chilled fluid temperature pull-down rate at start-up to an adjustable range of 0.2° F to 2° F (0.11° C to 1.1° C) per minute to prevent excessive demand spikes at start-up.
  - e. Seven-day time schedule.
  - f. Leaving chilled fluid temperature reset from return fluid and outside air temperature.
  - g. Chilled water pump start/stop control and primary/standby sequencing to ensure equal pump run time.
  - h. Dual chiller control for parallel chiller applications without addition of hardware modules, control panels.
  - i. Timed maintenance scheduling to signal maintenance activities for pumps, strainer maintenance and user-defined maintenance activities.
  - j. Low ambient protection to energize cooler and hydronic system heaters.
  - k. Periodic pump start to ensure pump seals are properly maintained during off-season periods.
  - l. Single step demand limit control activated by remote contact closure.
  - m. Night time sound mode to reduce the sound of the machine by a user-defined schedule.
3. Diagnostics:
  - a. The control panel shall include, as standard, a Scrolling Marquee display capable of indicating the safety lockout condition by displaying a code for which an explanation may be scrolled at the display with time and date stamp.
  - b. Information included for display shall be:
    - 1) Compressor lockout.
    - 2) Loss of charge.
    - 3) Low fluid flow.
    - 4) Cooler freeze protection.
    - 5) Cooler set point.
    - 6) Chilled water reset parameters.
    - 7) Thermistor and transducer malfunction.
    - 8) Entering and leaving-fluid temperature.
    - 9) Evaporator and condenser pressure.
    - 10) System refrigerant temperatures.
    - 11) Chiller run hours.
    - 12) Compressor run hours.
    - 13) Compressor number of starts.
    - 14) Time of day:
      - a) Display module, in conjunction with the microprocessor, must also be capable of displaying the output (results) of a service test. Service test shall verify operation of every switch, thermistor, fan, and compressor before chiller is started.
      - b) Diagnostics shall include the ability to review a list of the 30 most recent alarms with clear language descriptions of the alarm event. Display of alarm codes without the ability for clear language descriptions shall be prohibited.
      - c) An alarm history buffer shall allow the user to store no less than 30 alarm events with clear language descriptions, time and date stamp event entry.
      - d) The chiller controller shall include multiple connection ports for communicating with the local equipment network, the Carrier Comfort Network® (CCN) system and access to chiller control functions from any point on the chiller.
      - e) The control system shall allow software upgrade without the need for new hardware modules.
    - 15) Crankcase heater failure.
4. Safeties:
  - a. Unit shall be equipped with thermistors and all necessary components in conjunction with the control system to provide the unit with the following protections:
    - 1) Loss of refrigerant charge.
    - 2) Reverse rotation.
    - 3) Low chilled fluid temperature.
    - 4) Thermal overload.
    - 5) High pressure.
    - 6) Electrical overload.
    - 7) Loss of phase.
  - b. Condenser fan and factory pump motors shall have external overcurrent protection.
- I. Operating Characteristics:
  1. Unit shall be capable of starting and running at outdoor ambient temperatures from 32 F to 125 F (0° to 52 C) for all sizes.
  2. Unit shall be capable of starting up with 95 F (35 C) entering fluid temperature to the cooler.
- J. Motors:

Condenser-fan motors shall be totally enclosed single speed, 3-phase type with permanently lubricated bearings and Class F insulation.

# Guide specifications (cont)



## K. Electrical Requirements:

1. Unit/module primary electrical power supply shall enter the unit at a single location (some chiller voltage/size combinations require 2 power supplies).
2. Unit shall operate on 3-phase power at the voltage shown in the equipment schedule.
3. Control points shall be accessed through terminal block.
4. Unit shall be shipped with factory control and power wiring installed.

## L. Chilled Water Circuit:

1. Chilled water circuit shall be rated for 300 psig (2068 kPa). Units with optional pump package are rated for 150 psig (1034 kPa) working pressure.
2. Thermal dispersion proof of flow switch shall be factory installed and wired.
3. Optional hydronic package:
  - a. Field pipe connections shall be Victaulic type.
  - b. Optional single or primary/stand-by operation pump systems. Dual pump systems shall have a pump discharge check valve.
  - c. Pumps shall be single stage design, for installation in vertical position and capable of being serviced without disturbing piping connections.
    - 1) Pump casing shall be of class 30 cast iron.
    - 2) The impeller shall be of cast bronze, closed type, dynamically balanced, keyed to the shaft and secured by locking cap screw.
    - 3) The hydronic kit will be provided with a flush line connection to ensure lubrication at the seal face and allow for positive venting of the seal chamber.
    - 4) Each port shall be fitted with an isolation valve that allow the units to operate in parallel or standby, yet may be used to isolate one pumping unit for servicing or removal with the other pump still running.
    - 5) Pump shall be rated for 150 psig (1034 kPa) working pressure.
    - 6) The pump case shall have gage tappings at the suction and discharge nozzles and include drain ports.
    - 7) Dual pumps shall allow for the servicing of one pump without draining the chilled water loop.
    - 8) Motors shall totally enclosed 3-phase type with grease lubricated ball bearings.
    - 9) Each pump shall be factory tested per Hydraulic Institute Standards.

- d. Pressure/temperature taps (3) shall be factory installed to measure the pressure differential across the pump and across the strainer.
- e. Combination valve shall be factory installed. Pressure/temperature taps (2) shall be factory installed to measure the pressure differential across the combination valve.
- f. Hydronic assembly shall have factory supplied electric freeze protection to -20 F (-29 C).
- g. Piping shall be Schedule 40 black steel.
- h. Cast iron or ductile iron body strainer with 8 mesh screen. A factory-installed, removable fine mesh clean-out strainer for initial run period shall be included.

## M. Special Features:

Certain standard features are not applicable when the features designated by \* are specified. For assistance in amending the specifications, contact your Carrier representative.

### \* 1. Low Ambient Head Pressure Control:

Unit shall be capable of starting and running at outdoor ambient temperatures down to -20 F (-29 C) with the addition of antifreeze in the cooler circuit, wind baffles, and field-installed or factory-installed solid-state head pressure control with condenser coil minimum step capacity temperature sensor.

### 2. Unit-Mounted Non-Fused Disconnect:

Unit shall be supplied with factory-installed, non-fused electrical disconnect for main power supply.

### 3. Optional Condenser Coil Materials:

#### a. Pre-coated aluminum fin coils:

Shall have a durable epoxy-phenolic coating to provide protection in mildly corrosive coastal environments. Coating shall be applied to the aluminum fin stock prior to the fin stamping process to create an inert barrier between the aluminum fin and copper tube. Epoxy-phenolic barrier shall minimize galvanic action between dissimilar metals.

#### b. Copper-fin coils:

Shall be constructed of copper fins mechanically bonded to copper tubes and copper tube sheets. Galvanized steel tube sheets shall not be acceptable. A polymer strip shall prevent coil assembly from contacting sheet metal coil pan to minimize potential for galvanic corrosion between the coil and pan. All copper construction shall provide protection in moderate coastal applications.



- c. E-Coated aluminum-fin coils:  
Shall have a flexible epoxy polymer coating uniformly applied to all coil surface areas without material bridging between fins. Coating process shall ensure complete coil encapsulation. Color shall be high gloss black with gloss — 60° of 65-90% per ASTM ID523-89. Uniform dry film thickness from 0.8 to 1.2 mil on all surface areas including fin edges. Superior hardness characteristics of 2H per ASTM D3363-92A and cross hatch adhesion of 4B-5B per ASTM D3359-93. Impact resistance shall be up to 160 in./lb (ASTM D2794-93). Humidity and water immersion resistance shall be up to minimum 1000 and 250 hours respectively (ASTM D2247-92 and ASTM D870-92). Corrosion durability shall be confirmed through testing to no less than 3000 hours salt spray per ASTM B117-90. Coil construction shall be aluminum fins mechanically bonded to copper tubes.
- d. E-Coated copper-fin coils:  
Shall have a flexible epoxy polymer coating uniformly applied to all coil surface areas without material bridging between fins. Coating process shall ensure complete coil encapsulation. Color shall be high gloss black with gloss — 60° of 65-90% per ASTM D523-89. Uniform dry film thickness from 0.8 to 1.2 mil on all surface areas including fin edges. Superior hardness characteristics of 2H per ASTM D3363-92A and cross hatch adhesion of 4B-5B per ASTM D3359-93. Impact resistance shall be up to 160 in./lb (ASTM D2794-93). Humidity and water immersion resistance shall be up to minimum 1000 and 250 hours respectively (ASTM D2247-92 and ASTM D870-92). Corrosion durability shall be confirmed through testing to no less than 3000 hours salt spray per ASTM B117-90. Coil construction shall be copper-fins mechanically bonded to copper tube sheets. Galvanized steel tube sheets shall not be acceptable. A polymer strip shall prevent coil assembly from contacting sheet metal coil pan to maintain coating integrity and minimize corrosion potential between the coil and pan.
4. Remote Enhanced Display:  
Unit shall be supplied with indoor-mounted, remote, 40-character per line, 16-line display panel for field installation.
5. Medium Temperature Brine:  
Unit shall be factory modified to start and operate at leaving chilled fluid temperatures between 30 F (-1.1 C) and 39 F (3.9 C).
6. Chillervisor System Manager Multi-Unit Control:  
Field-installed control shall sequence between 2 and 8 chillers in parallel in a single system. System shall control chilled water pumps.
7. Minimum Load Control:  
Unit shall be equipped with factory (or field) installed, microprocessor-controlled, minimum-load control that shall permit unit operation down to a minimum of 15% capacity (varies with unit size).
8. Energy Management Control Module:  
A factory or field-installed module shall provide the following energy management capabilities: 4 to 20 mA signals for leaving fluid temperature reset, cooling set point reset or demand limit control; 2-step demand limit control (from 0% to 100%) activated by a remote contact closure; and discrete input for "Ice Done" indication for ice storage system interface.
9. Condenser Coil Trim Panels and Security Grilles:  
Unit shall be supplied with factory or field-installed coil covers and painted grilles to protect the condenser coil and internal chiller components from physical damage.
10. Hail Guards:  
Field-installed accessory kit shall include set of metal grilles for the protection of the condensing coils from hail damage.
11. DataPort™ Control:  
Unit shall be supplied with field-installed interface device that allows a non-Carrier device such as a personal computer or non-Carrier controller to *read* values in system elements connected to the CCN Communication Bus using plain English ASCII over its RS-232 connection.
12. DataLINK™ Control:  
Unit shall be supplied with field installed interface device that allows a non-Carrier device such as a personal computer or non-Carrier controller to *read and change values* in system elements connected to the CCN Communication Bus using plain English ASCII over its RS-232 connection.
13. BACnet™ Translator Control:  
Unit shall be supplied with field-installed interface between the chiller and a BACnet Local Area Network (LAN, i.e., MS/TP EIA-485).
14. LON Translator control:  
Unit shall be supplied with field-installed interface between the chiller and a Local Operating Network (LON, i.e., LonWorks FT-10A ANSI/EIA-709.1).

# Guide specifications (cont)



15. Navigator™ Hand Held Display:
  - a. Portable hand held display module with a minimum of 4 lines and 20 characters per line, of clear English, Spanish, Portuguese or French language.
  - b. Display menus shall provide clear language descriptions of all menu items, operating modes, configuration points and alarm diagnostics. Reference to factory codes shall not be accepted.
  - c. RJ-14 connection plug shall allow display module to be connected to factory-installed receptacle.
  - d. Industrial grade coiled extension cord shall allow the display module to be moved around the chiller.
  - e. Magnets shall hold the display module to any sheet metal panel to allow hands-free operation.
  - f. Display module shall have NEMA 4x housing suitable for use in outdoor environments.
  - g. Display shall have back light and contrast adjustment for easy viewing in bright sunlight or night conditions.
  - h. Raised surface buttons with positive tactile response.
16. Leaving chilled fluid temperature reset from return fluid, outdoor air temperature, space temperature (requires additional sensor and the Energy Management Control Module) or 4 to 20 mA input (requires Energy Management Control Module).
17. Chilled Water Expansion Tank:

Enables chilled water system to accommodate fluctuations in volume based on increases or decreases in fluid temperature.
18. Removable Core Filter Drier (60 to 100 ton):

Standard units are equipped with a removable core filter drier. An option exists for non-removable core filter driers for value engineering purposes. This option is not available with the Medium Temperature Brine option.
19. Compressor Suction Service Valve:

Standard refrigerant discharge isolation and liquid valves enable service personnel to store the refrigerant charge in the cooler or condenser during servicing. This factory-installed option allows for further isolation of the compressor from the cooler vessel.
20. Suction Line Insulation:

Insulation is tubular closed-cell insulation. This option is required with the Medium Temperature Brine option and recommended for areas of high dewpoints where condensation may be a concern.
21. Freeze Protection Cooler Heaters:

Cooler heaters provide protection from cooler freezeup to -20 F (-29 C).
22. Remote Cooler Kit:

Allows remote installation of cooler. Kit includes expansion valve and flow switch cable extensions, and instructions.
23. Service Option:

The service option provides a remote service port for Navigator connection and a factory-installed convenience outlet includes 4-amp GFI (Ground Fault Interrupt) receptacle with independent fuse protection. Convenience outlet is 115-v female receptacle. Service option not available with 380 v.
24. Low-Sound Compressor Enclosures:

Provide sound reduction for the scroll compressors.

