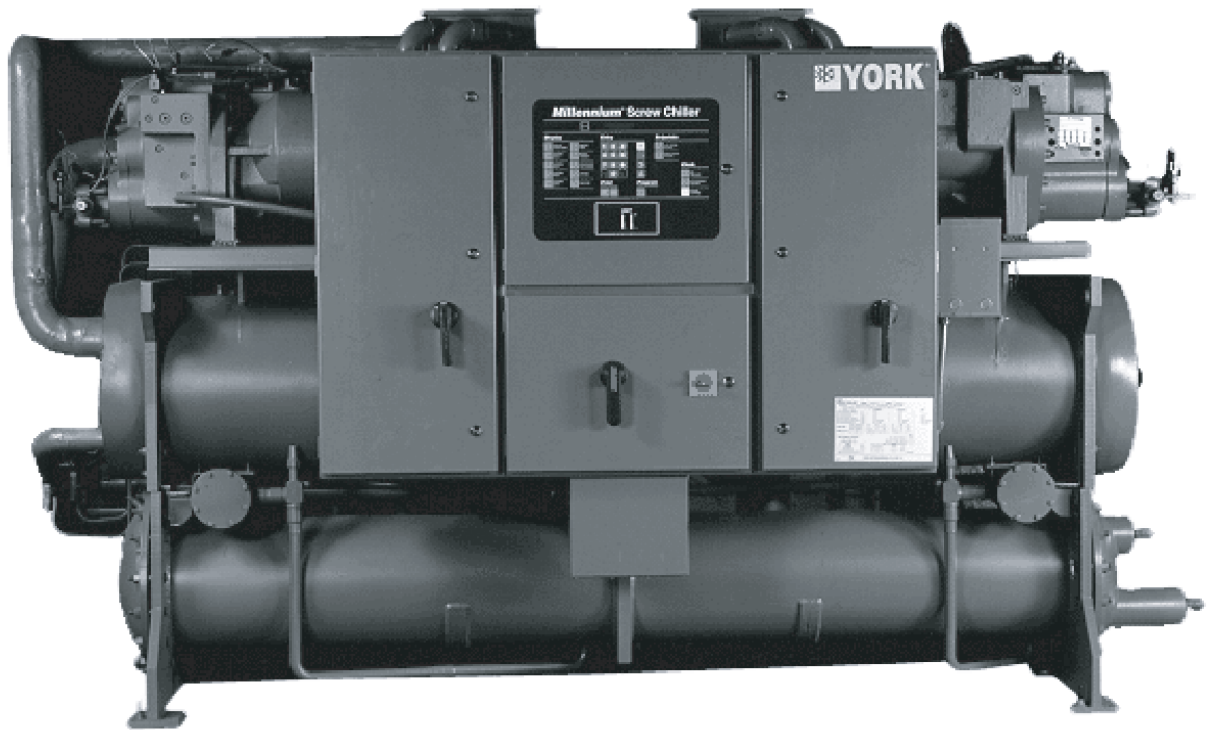




**YCWS  
WATER COOLED LIQUID CHILLER**



**91 TONS THROUGH 216 TONS  
320 kW THROUGH 760 kW  
60Hz  
STYLE A**

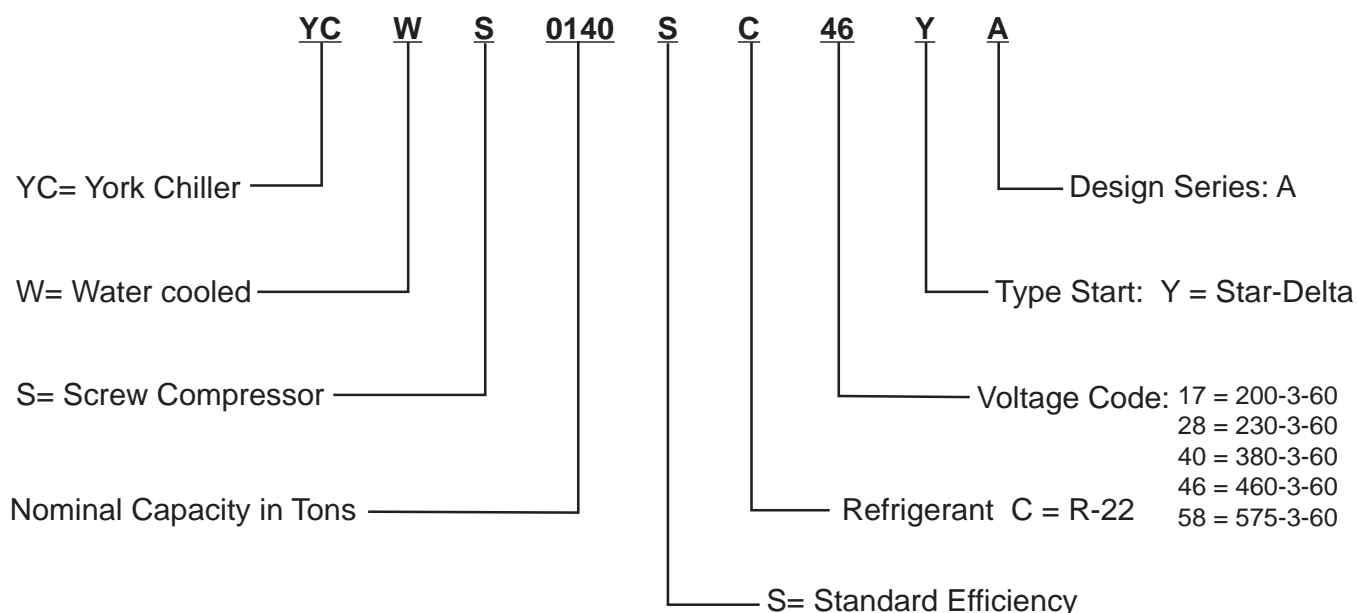


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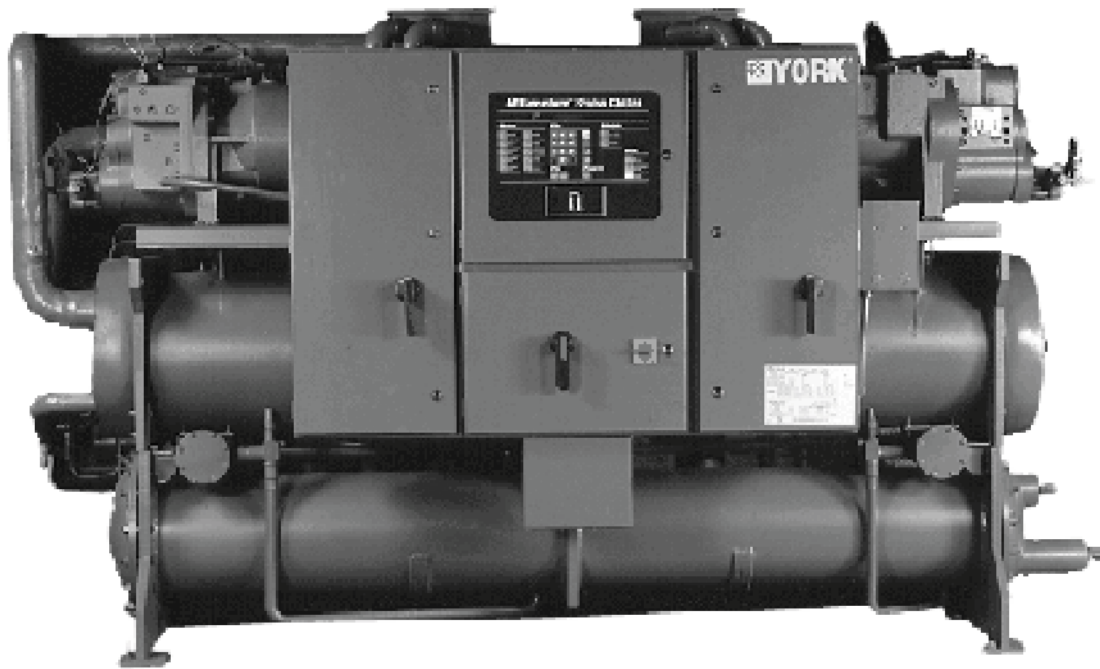
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## Nomenclature



## York YCWS Water Cooled Screw Chillers



*YORK YCWS Water-Cooled models provide chilled water for all air conditioning applications that use central station air handling or terminal units. They are completely self-contained and are designed for indoor (new or retrofit) installation. Each unit includes accessible semi-hermetic screw compressors, a liquid cooler, water cooled condenser, and a user-friendly, diagnostic Microcomputer Control Center all mounted on a rugged steel base. The units are produced at an ISO 9001 registered facility. The YCWS chillers have certified ratings in accordance with ARI Standard 550/590.*

# Specifications

---

## GENERAL

The Liquid Chiller will be completely assembled with all interconnecting refrigerant piping and internal wiring, ready for field installation.

The unit will be pressure-tested, evacuated, and charged with Refrigerant-22, and York 'L' (POE) synthetic oil. There will be an operational test, with water flowing through the cooler, to check that each control device operates correctly.

The unit will be covered with a coat of Caribbean Blue enamel. Units are designed in accordance with NFPA 70 (National Electric Code), U.L. and cU.L. Standards, ASHRAE/ANSI 15 Safety Code for Mechanical Refrigeration. All units are produced at an ISO 9001 registered facility. All YCWS chillers are rated and certified in accordance with ARI Standard 550/590 at ARI conditions.

## SEMI-HERMETIC YORK SCREW COMPRESSORS

- Continuous function, microprocessor controlled, 3-way proportional Capacity Control Valve provides regulated output pressure independent of valve input pressure for a stable, smooth, and precise match of compressor capacity to cooling load to 10% of chiller capacity.
- Automatic spring return of capacity control valve to minimum load position ensures compressor starting at minimum motor load. Internal discharge check to prevent rotor backspin upon shutdown.
- Acoustically tuned, internal discharge gas path eliminates objectionable noise at the source, while optimizing flow for maximum performance.
- Reliable suction gas cooled, high efficiency, accessible hermetic motor with APT2000 type magnet wire and redundant overload protection using both thermistor and current overload protection.
- Suction gas screen and serviceable, 0.5 micron full flow oil filter within the compressor housing.
- Cast iron compressor housing precisely machined for optimal clearances and superb efficiency. Entire compressor, from suction to discharge has a Design Working Pressure of 450psig (31 bar).
- 350W compressor body cartridge heater.

- Each compressor will be mounted on isolator pads to reduce transmission of vibration to the rest of the unit.

## COOLER

The dual-circuit cooler will be the direct-expansion type, with refrigerant in the tubes and chilled liquid flowing through the baffled shell. The design working pressure of the shell (liquid) side will be 150 PSIG (10.3 bar), and 300 PSIG (26.7 bar) for the tube (refrigerant) side.

The cooler will be constructed and tested in accordance with the applicable sections of the ASME Pressure Vessel Code, Section VIII, Division (1). The water side will be exempt per paragraph U-1, (c)(6).

The water baffles will be constructed of galvanized steel to resist corrosion. The removable heads will allow access to the internally enhanced, seamless, copper tubes. Vent and drain connections will be included.

The cooler will be covered with 3/4" (19.1 mm ) flexible, closed-cell, foam insulation (K = 0.25).

## CONDENSER

The condenser is a cleanable thru-tube type with steel shell, copper tubes, removable water heads, and includes integral subcooling. Refer to PHYSICAL DATA for design working pressures. The shell will be constructed and tested in accordance with section VII, division 1 of the ASME pressure-vessel code. The water side is exempt per paragraph U-1 (c) of section VIII, division 1 of the ASME pressure-vessel code. The condenser is equipped with relief valves and will hold the full refrigerant charge for pumpdown.

## REFRIGERANT CIRCUIT

Two independent refrigerant circuits will be furnished on each unit. All piping will be copper with brazed joints. The liquid line will include: a shutoff valve with charging port; sightglass with moisture indicator; thermal expansion valve; solenoid valve; and high-absorption removable-core filter drier. The entire suction line and the liquid line between the expansion valve and the cooler will be insulated with flexible, closed-cell, foam insulation.

## POWER AND CONTROL PANELS

All controls and motor starting equipment necessary for

unit operation shall be factory wired and function tested. The panel enclosures shall be designed to NEMA 1 (IP 32) and manufactured from powder-painted galvanized steel.

The Power and Control Panel shall be divided into a power section for each electrical system, a common input section and a control section.

Each power panel shall contain:

Compressor starting contactors, control circuit serving compressor capacity control, compressor contactor coils and compressor motor overloads. The compressor motor overloads contain current transformers which sense each phase, as an input to the microprocessor, to protect the compressor motors from damage due to: low input current, high input current, unbalanced current, single phasing, phase reversal, and compressor locked rotor.

The common input section shall contain:

The control supply transformer providing 115V, customer relay board and control circuit switch disconnect/emergency stop device.

The control section shall contain:

On/Off rocker switch, microcomputer keypad and display, microprocessor board, I/O expansion board, relay boards, and 24V fused power supply board.

### **MICROPROCESSOR CONTROLS**

**Fuzzy Logic** control will be incorporated in the YCWS range of chillers. Fuzzy Logic allows the control system to monitor several key variables to provide tighter, more stable chilled water temperature control. The control system monitors the leaving chilled water temperature to track where it has been, where it is now, how fast it is moving, and accurately adjusts the chiller operation in anticipation of expected performance to minimize hunting and save energy.

The microprocessor shall have the following functions and displays:

- A liquid crystal 40 character display with text provided on two lines and light emitting diode backlighting for outdoor viewing.
- A color-coded, 35 button, sealed keypad with sections for Display, Entry, Setpoints, Clock, Print, Program, and Unit On/Off Switch.

The standard controls shall include: brine chilling or

thermal storage, automatic pumpdown, run signal contacts, demand load limit from external building automation system input, remote reset liquid temperature reset input, unit alarm contacts, chilled liquid pump control, automatic reset after power failure, automatic system optimization to match operating conditions, software stored in nonvolatile memory (EPROM) to eliminate chiller failure due to AC power failure.

The microprocessor can be directly connected to a YORK ISN Building Automation System via the standard onboard RS485 communications port. This option also provides open system compatibility with other communications networks.

Programmed Setpoints shall be retained in a lithium battery backed RTC with a memory of five years.

**Display** - In Imperial (°F and PSIG) or SI (°C and BAR)

units, and for each circuit:

- Return and leaving chilled liquid
- Day, date and time. Daily start/stop times. Holiday and Manual Override status.
- Compressor operating hours and starts. Automatic or manual lead/lag. Lead compressor identification.
- Run permissive status. No cooling load condition. Compressor run status.
- Anti-recycle timer and anti-coincident start timer status per compressor.
- Suction (and suction superheat), discharge, and oil pressures and temperatures per System.
- Percent full load compressor motor current per phase and average per phase. Compressor capacity control valve input steps.
- Cutout status and setpoints for: supply fluid temperature, low suction pressure, high discharge pressure and temperature, high oil temperature, low and high current, phase rotation safety, and low leaving liquid temperature.
- Unloading limit setpoints for high discharge pressure and compressor motor current.
- Liquid pull-down rate sensitivity (0.5°F to 5°F [0.3°C to 3.0°C]/minute in 0.1°F [0.05°C] increments).
- Status of: evaporator heater, load and unload timers, chilled water pump.
- Out of range message.
- Up to 6 fault shut down conditions.
- Standard Display Language is English, with an Option for Spanish.

**Entry** - Enter set point changes, cancel inputs, ad-

# Specifications (Continued)

---

vance  
day, change AM/PM.

**Set Points** - Chilled liquid temperature, chilled liquid range, remote reset temperature range.

**Clock** - Time, daily or holiday start/stop schedule, manual override for servicing.

**Print** - Operating data or system fault shutdown history for last six faults. Printouts through an RS-232 port via a separate printer (by others).

**Program -**

- Low leaving liquid temperature cutout, 300 to 600 second anti-recycle timer, lag compressor start time delay, and average motor current unload point. Liquid temperature setpoint reset signal from **YORK ISN** or building automation system (by others) via:
- Pulse width modulated (PWM) input for up to 40°F (22°C) total reset as standard.
- Optional Building Automation System interface input card for up to 20°F (11.1°C) reset using a: 4 to 20 mA, 0 to 10 Vdc input, or discrete reset input.

- NOTE: The Standard MicroPanel can be directly connected to a YORK ISN Building Automation System via the standard onboard RS485 communication port. This Option also provides open system compatibility with other communications networks (BACnet™ & LONMARK™ via interface through standard onboard 485 or 232 port and an external YorkTalk Translator.
- Additional functions (password protected) for programming by a qualified service technician:

Cutouts for low suction pressure, high discharge pressure, high oil temperature.

Refrigerant type.

High discharge pressure unload setpoint.

Compressor motor current percent limit.

# Accessories & Options

**ALTERNATIVE REFRIGERANTS** - Contact your nearest YORK office for information and availability on alternative HFC refrigerants.

## ELECTRICAL OPTIONS:

### MULTIPLE POINT POWER SUPPLY CONNECTION -

**Standard** field power wiring connection on all models is Multiple Point Power Connection to factory provided Terminal Blocks. Two field supplied electrical power circuits with appropriate branch circuit protection provide power to each of two motor control center cabinets, located on either side of the Control panel on the front of the chiller. Each cabinet contains starter elements for one compressor.

**Optional** to the Terminal Blocks for field power connection are Non-Fused Disconnects or Circuit Breaker Switches with external, lockable handles.

### SINGLE POINT POWER CONNECTION - (Factory Mounted)

An optional configuration for field connection of a single electrical circuit to: either Terminal Block or Non-Fused Disconnect Switch with lockable external handle (in compliance with Article 440 of N.E.C., to isolate unit power supply for service). Factory wiring is provided from the Terminal Block or Disconnect Switch to Factory supplied individual system Circuit Breakers, Non-Fused Disconnect switch with external, lockable handle or J Class Fuses/Fuse Block in each of the two compressor motor control centers. (Note: Single Point Non-Fused Disconnect Switch will not be supplied with individual system Non Fused Disconnect Switches with external, lockable handles in each of the two compressor motor control centers).

**65 Ka HIGH VOLTAGE PROTECTION** - Non-Fused Disconnect Switch with fuses (200 & 575V) or Circuit Breakers (230, 380, & 460V) are used for applications where customers have a requirement for single point wiring with high "fault current" withstanding capability. This option provides between 50Ka and 65Ka withstand protection to the equipment.

**BUILDING AUTOMATION SYSTEM INTERFACE (Factory Mounted)** – Provides means to reset the leaving chilled liquid temperature or percent full load amps (current limiting) from the BAS (**Factory Mounted**):

- Printed circuit board to accept 4 to 20 milliamp, 0 to 10 VDC, or dry contact closure input from the BAS.
- A YORK ISN Building Automation System can provide a Pulse Width Modulated (PWM) signal direct to the standard control panel via the standard onboard RS485 port.

**FLOW SWITCH** – The flow switch or its equivalent must be furnished with each unit. 150 PSIG (10.5 bar) DWP – For standard units. Johnson Controls model F61MG-1C Vapor-proof SPDT, NEMA 4X switch (150 PSIG [10.5 bar] DWP), -20°F to 250°F (-29°C to 121°C), with 1" NPT connection for upright mounting in horizontal pipe. (**Field mounted**)

**DIFFERENTIAL PRESSURE SWITCH** - Alternative to the above mentioned Flow Switch. Pretemco Model DPS 300A-P4OPF-82582-S (20.7bar max working pressure). SPDT 5 amp 125/250 VAC switch. Range: 0 - 2.8bar, deadband: 0.003 - 0.005bar, with 1/4 NPTE pressure connections.

**LANGUAGE LCD AND KEYPAD** - Standard display language and

keypad is in English. Spanish is available as an option.

**PRINTER KIT** - Printer for obtaining printout of unit operating and history data. (**Field Mounted**)

**MULTIPLE UNIT SEQUENCE CONTROL (Field Mounted)** - Sequencing Control with automatic unit sequencing. Necessary items for operation and control of up to eight units with parallel wiring circuits. Includes software and mixed liquid temperature sensor (interconnecting wiring by others).

**PRESSURE VESSEL CODES** - Coolers and condensers can be supplied in conformance with the following pressure codes: A.S.M.E. (Standard)

**CHICAGO CODE RELIEF VALVES (Factory Mounted)** - Unit will be provided with relief valves to meet Chicago Code requirements.

## ACCESSORIES:

**FLANGES (Weld Type)** – Consists of 150 PSI (10.5 bar) standard cooler (150 lb) R.F. flanges to convert to flanged cooler-connections and includes companion flanges. (**Field mounted**)

**FLANGES (Victaulic Type)** – Consists of (2) Flange adapter for grooved end pipe (standard 150 PSI [10.5 bar] cooler). Includes companion flanges. (**Field mounted**)

## VIBRATION ISOLATION:

- **Neoprene Isolators** – Recommended for normal installations. Provides very good performance in most applications for the least cost. (**Field mounted**)
- **1" Spring Isolators** – Level adjustable, spring and cage type isolators for mounting under the unit base rails. 1" nominal deflection may vary slightly by application. (**Field mounted**)
- **2" Seismic Spring Isolators** – Restrained Spring-Flex Mountings incorporate a rugged welded steel housing with vertical and horizontal limit stops. Housings designed to withstand a minimum 1.0g accelerated force in all directions to 2". Level adjustable, deflection may vary slightly by application. (**Field-mounted**)

## ALTERNATIVE CHILLED FLUID APPLICATIONS:

**Standard** water chilling application range is 40°F to 50°F (4.4°C to 10°C) Leaving Chilled Water Temperature. To protect against nuisance safety trips below 40°F (4.4°C) and reduce the possibility of cooler damage due to freezing during chiller operation, the unit microprocessor automatically unloads the compressors at abnormally low suction temperature (pressure) conditions, prior to safety shutdown.

- **Process Brine Option** – Process or other applications requiring chilled fluid below 40°F (4.4°C) risk water freezing in the evaporator, typically overcome by using antifreeze. For these applications, the chiller system incorporates brine (ethylene or propylene glycol solution), and the system design Leaving Chilled Fluid Temperature must be provided on the order form to ensure proper factory configuration.
- **Thermal Storage Option** – Thermal Storage equires special capabilities from a chiller, including the ability to 'charge' an ice storage tank, then possibly automatically reset for operation at elevated Leaving Chilled Fluid Temperatures as required by automatic building controls. The Thermal Storage Option provides Ice Storage duty Leaving Chilled Fluid setpoints from 25°F to 15°F (-4°C to -10°C) minimum during charge cycle, with a Reset range of 36°F (20°C) supply fluid temperature.

# Design Parameters

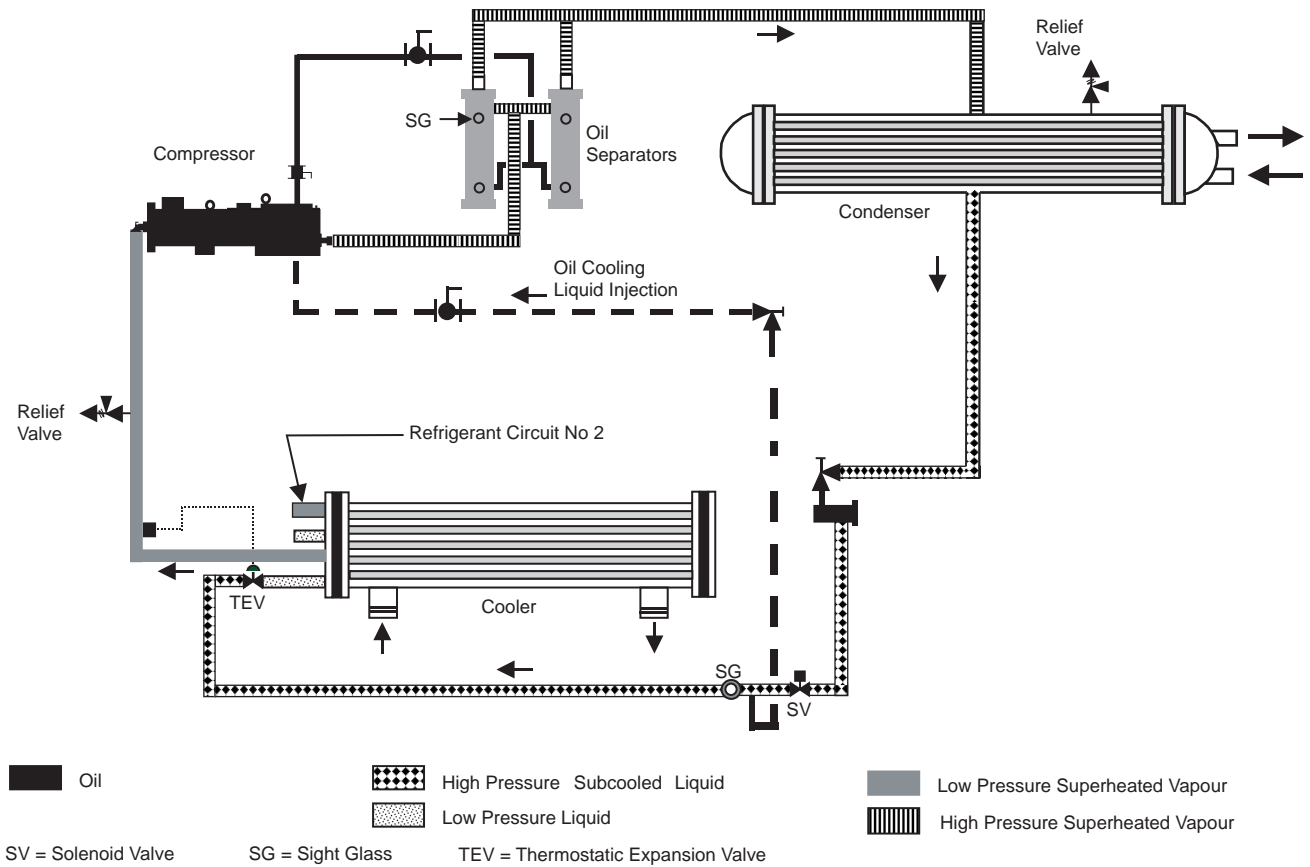
## English

| YCWS                            | 0100SC | 0120SC | 0140SC | 0180SC | 0200SC | 0220SC | 0240SC |
|---------------------------------|--------|--------|--------|--------|--------|--------|--------|
| Min. Cooler Water Flow - GPM    | 200    | 200    | 200    | 260    | 260    | 300    | 300    |
| Max. Cooler Water Flow - GPM    | 506    | 506    | 506    | 695    | 695    | 830    | 830    |
| Min. Cond. Water Flow - GPM     | 193    | 193    | 193    | 330    | 330    | 330    | 330    |
| Max. Cond. Water Flow - GPM     | 645    | 645    | 645    | 1050   | 1050   | 1050   | 1050   |
| Min. Lvg. Liquid Temp. - °F     | 40     | 40     | 40     | 40     | 40     | 40     | 40     |
| Max. Lvg. Liquid Temp. - °F     | 50     | 50     | 50     | 50     | 50     | 50     | 50     |
| Min. Ent. Cond. Water Temp - °F | 75     | 75     | 75     | 75     | 75     | 75     | 75     |
| Max. Ent. Cond. Water Temp - °F | 95     | 95     | 95     | 95     | 95     | 95     | 95     |
| Min. Equipment Room Temp. - °F  | 40     | 40     | 40     | 40     | 40     | 40     | 40     |
| Max. Equipment Room Temp. - °F  | 115    | 115    | 115    | 115    | 115    | 115    | 115    |

## SI

| YCWS                            | 0100SC | 0120SC | 0140SC | 0180SC | 0200SC | 0220SC | 0240SC |
|---------------------------------|--------|--------|--------|--------|--------|--------|--------|
| Min. Cooler Water Flow - l/sec  | 12.6   | 12.6   | 12.6   | 16.4   | 16.4   | 18.9   | 18.9   |
| Max. Cooler Water Flow - l/sec  | 31.9   | 31.9   | 31.9   | 43.8   | 43.8   | 52.4   | 52.4   |
| Min. Cond. Water Flow - l/sec   | 12.2   | 12.2   | 12.2   | 20.8   | 20.8   | 20.8   | 20.8   |
| Max. Cond. Water Flow - l/sec   | 40.7   | 40.7   | 40.7   | 66.2   | 66.2   | 66.2   | 66.2   |
| Min. Lvg. Liquid Temp. - °C     | 4.4    | 4.4    | 4.4    | 4.4    | 4.4    | 4.4    | 4.4    |
| Max. Lvg. Liquid Temp. - °C     | 10.0   | 10.0   | 10.0   | 10.0   | 10.0   | 10.0   | 10.0   |
| Min. Ent. Cond. Water Temp - °C | 23.8   | 23.8   | 23.8   | 23.8   | 23.8   | 23.8   | 23.8   |
| Max. Ent. Cond. Water Temp - °C | 35.0   | 35.0   | 35.0   | 35.0   | 35.0   | 35.0   | 35.0   |
| Min. Equipment Room Temp. - °C  | 4.4    | 4.4    | 4.4    | 4.4    | 4.4    | 4.4    | 4.4    |
| Max. Equipment Room Temp. - °C  | 46.1   | 46.1   | 46.1   | 46.1   | 46.1   | 46.1   | 46.1   |

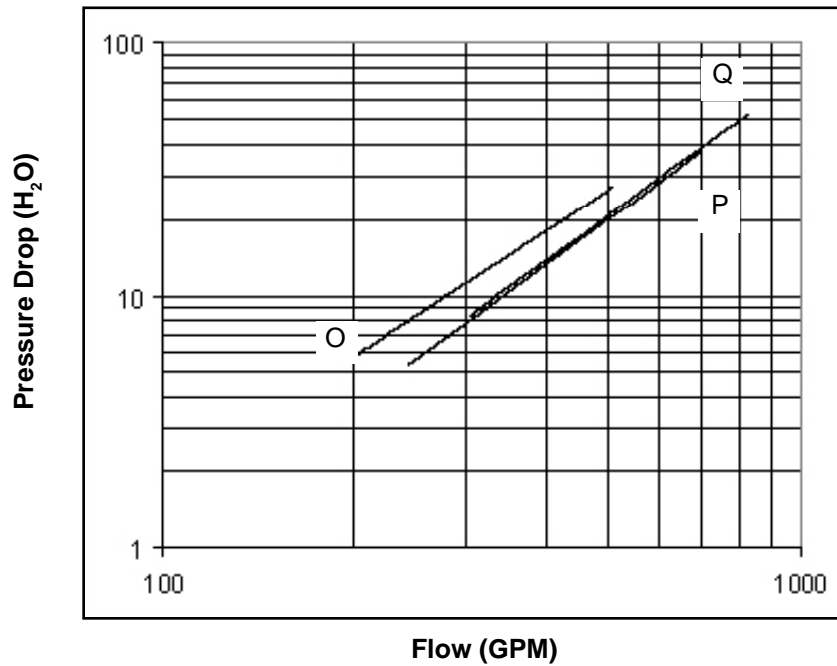




Low-pressure liquid refrigerant enters the cooler tubes and is evaporated and superheated by the heat energy absorbed from the chilled liquid passing through the cooler shell. Low-pressure vapor enters the compressor where pressure and superheat are increased. High-pressure vapor is passed through the oil separator where heat is rejected to the condenser water passing through the tubes. The fully condensed and subcooled liquid leaves the condenser and enters the expansion valve, where pressure reduction and further cooling take place. The low pressure liquid refrigerant then returns to the cooler. Each refrigerant circuit utilizes liquid injection, maintaining efficient oil temperature operation within the compressor.

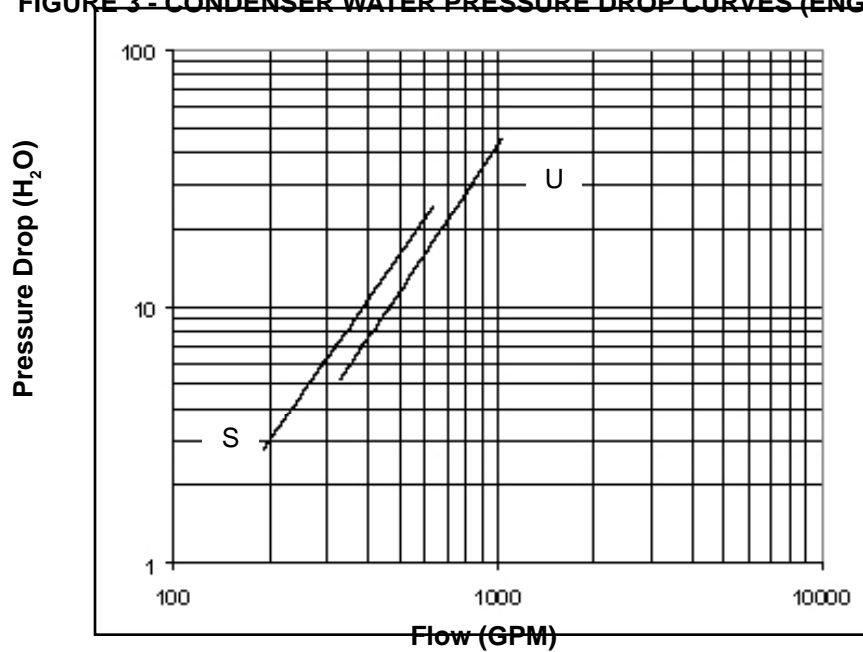
# Pressure Drops

FIGURE 1 - COOLER WATER PRESSURE DROP CURVES (ENGLISH)



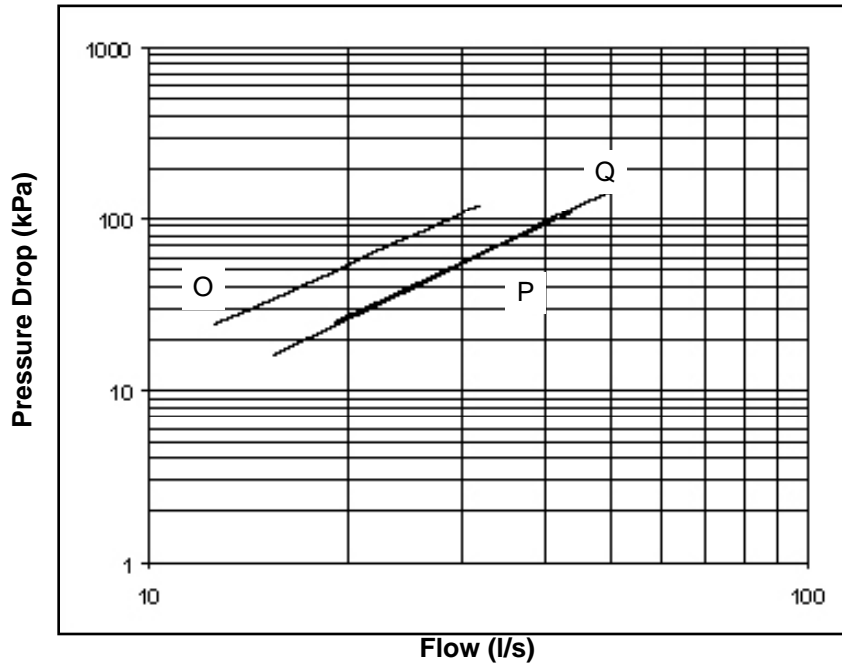
| YCWS Model Number      | Cooler |
|------------------------|--------|
| 0100SC, 0120SC, 0140SC | O      |
| 0180SC, 0200SC         | P      |
| 0220SC, 0240SC         | Q      |

FIGURE 3 - CONDENSER WATER PRESSURE DROP CURVES (ENGLISH)



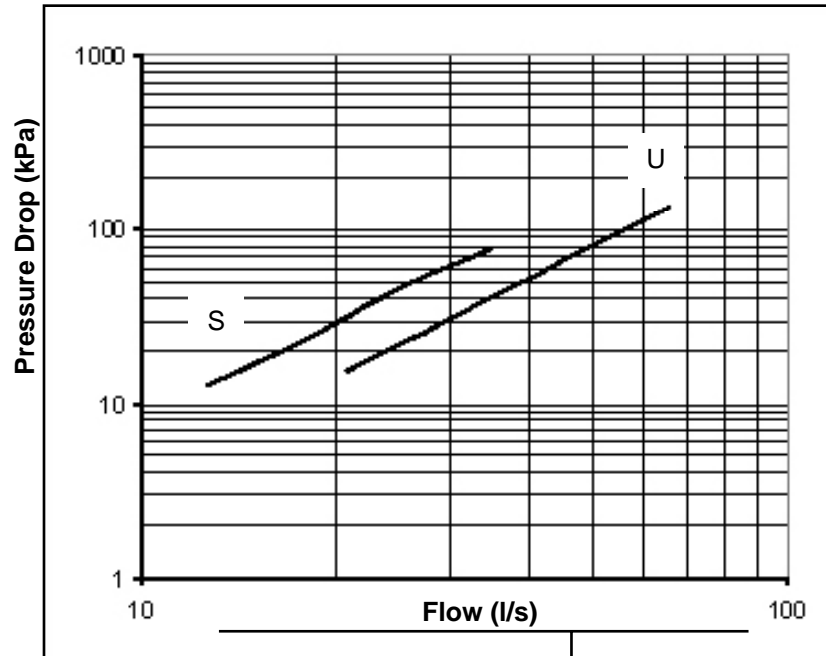
| YCWS Model Number      | Cooler |
|------------------------|--------|
| 0100SC, 0120SC, 0140SC | S      |
| 0180SC, 0200SC         | U      |
| 0220SC, 0240SC         | U      |

**FIGURE 2 - COOLER WATER PRESSURE DROP CURVES (SI)**



| YCWS Model Number      | Cooler |
|------------------------|--------|
| 0100SC, 0120SC, 0140SC | O      |
| 0180SC, 0200SC         | P      |
| 0220SC, 0240SC         | Q      |

**FIGURE 4 - CONDENSER WATER PRESSURE DROP CURVES (SI)**



|                        |   |
|------------------------|---|
| 0100SC, 0120SC, 0140SC | S |
| 0180SC, 0200SC         | U |
| 0220SC, 0240SC         | U |

# Selection Data

## GUIDE TO SELECTION

Complete water chilling capacity ratings for YORK YCWS chillers are shown on the following pages to cover the majority of job requirements. For any application beyond the scope of this Engineering Guide, consult your nearest YORK Office.

## SELECTION RULES

- RATINGS** - YCWS 200, 230 380, 460 & 575-3-60 rating are certified in accordance with ARI standard 550/590, at the ARI standard condition. Rating not at standard ARI conditions are rated in accordance with ARI rating procedures. These ratings may be interpolated but should not be extrapolated.
- COOLING WATER QUANTITY** - Ratings are based on 10°F chilled water range. Use the chilled water correction factors (below) for other ranges except as limited by water pressure drop, minimum or maximum water flows for the cooler.
- CONDENSER WATER QUANTITY** – Rating are applicable from 2 to 4 gpm/ton as limited by water pressure drop or minimum or maximum water flows for the condenser. Using the tabulated MBH, the Cond. GPM is calculated as follows:

$$\text{Cond. Water Range (°F)} = \frac{\text{Cond. GPM} = \text{MBH} \times 2}{\text{Cond. Water Range (°F)}}$$

- FOULING FACTORS** – Rating are based on 0.0001 evaporator and 0.00025 condenser fouling factor. For other fouling factors, consult the table below or contact your YORK representative.

## EVAP FOULING FACTORS

| Temp Split | 0.0001 |          | x | 0.00025 |          |
|------------|--------|----------|---|---------|----------|
|            | Tons   | Compr kW |   | Tons    | Compr kW |
| 6          | 0.9692 | 1.0015   |   | 0.9972  | 1.0001   |
| 8          | 0.9849 | 1.0008   |   | 0.9980  | 1.0001   |
| 10         | 1.0000 | 1.0000   |   | 0.9982  | 1.0001   |
| 12         | 1.0133 | 0.9993   |   | 0.9978  | 1.0001   |
| 14         | 1.0248 | 0.9986   |   | 0.9979  | 1.0001   |

Note: Temperature split factors @ 44°F Leaving Chilled Liquid Temp (LCLT)

## COND FOULING FACTORS

| Temp Split | 0.00025 |          | x | 0.0005 |          |
|------------|---------|----------|---|--------|----------|
|            | Tons    | Compr kW |   | Tons   | Compr kW |
| 8          | 0.9998  | 1.0004   |   | 0.9957 | 1.0072   |
| 10         | 1.0000  | 1.0000   |   | 0.9959 | 1.0068   |
| 12         | 1.0001  | 0.9998   |   | 0.9961 | 1.0065   |
| 14         | 1.0001  | 0.9998   |   | 0.9965 | 1.0060   |

Note: Temperature split factors @ 95°F Leaving Condenser Water Temp (LCWT).

## METHOD OF SELECTION

If the duty requires a 10°F range on both the cooler and condenser, see “Ratings”. For water ranges other than 10°F, use the following procedure.

- Determine capacity required from the following formula

$$\text{Capacity (tons)} = \frac{\text{GPM} \times \text{Chilled Water Range (°F)}}{24}$$

- After applying any fouling factor corrections, the actual condenser heat rejection may be determined as follows:

$$\text{Heat Rejection (Btuh)} = (\text{Tons} \times 12,000) + (\text{kW} \times 3415)$$

$$\text{Heat Rejection (MBH)} = \frac{\text{Heat Rejection (Btuh)}}{1000}$$

$$= (\text{Tons} \times 12) + (\text{kW} \times 3.415)$$

- Determine condensing water requirements for water cooled models as follows:

$$\text{Condenser Tons} = \frac{\text{Heat Rejection (MBH)} \times 1000}{15,000}$$

$$\text{Cond. Water GPM} = \frac{\text{Condenser Tons} \times 30}{\text{Condenser Water Range (°F)}}$$

Or combine the two formulas:

$$\text{Cond. Water GPM} = \frac{\text{MBH} \times 2}{\text{Condenser Water Range (°F)}}$$

**SAMPLE SELECTION**

Water Cooled Condenser (YCWS)

GIVEN – Chill 200 GPM of water from 56°F to 44°F and 0.0001 evaporator fouling factor with 85°F to 95°F condensing water available. Fouling factor of 0.0005 special field for the condenser.

FIND – The required unit size capacity, kW, EER, and water pressure drop.

**SOLUTION:**

1. Chilled water range = 56°F - 44°F = 12°F and correction factors are 1.0133 for Tons and 0.9993 for kW for the cooler.

$$2. \text{ Capacity (tons)} = \frac{\text{GPM} \times \text{Chilled Water Range}}{24}$$

$$= \frac{200 \times 12}{24} = 100\text{TR}$$

2. From the rating, a model YCWS0120SC has a capacity range required. For the cooler leaving water temperature of 44°F and a condenser leaving water temperature of 95°F, the unit capacity rating table indicates:

$$\begin{aligned} \text{Tons} &= 110.3 \\ \text{KW} &= 86.2 \\ \text{EER} &= 15.4 \end{aligned}$$

Correcting for the 12°F chilled water range and the 0.0005 condenser-fouling factor:

$$\begin{aligned} \text{Tons} &= 110.3 \times 1.0133 \times 0.9961 = 111.3\text{TR} \\ \text{KW} &= 86.2 \times 0.9993 \times 1.0065 = 86.7 \end{aligned}$$

**The unit is suitable.**

3. Determine the average full load kW and EER at 95.0 Tons

$$\frac{95.0}{111.3} \times (86.7) = 74\text{KW}$$

$$\text{EER} = \frac{\text{Tons} \times 12}{\text{Kw}} = \frac{95.0 \times 12}{74} = 15.4$$

4. Determine the cond. Heat rejection as follows:

$$\begin{aligned} \text{Heat Rejection (MBH)} &= (\text{Tons} \times 12) + (\text{kW} \times 3.415) \\ &= (95.0 \times 12) + (74 \times 3.415) \\ &= 1140 + 253 \\ &= 1393 \end{aligned}$$

5. Determine GPM condensing water as follows:

$$\text{GPM Condenser Water} = \frac{\text{MBH} \times 2}{\text{Cond Water Range}}$$

6. From curves on pages 10 and 11, the pressure drops with 200GPM through the cooler and 288 through the condenser of the Model YCWS120SC

$$\begin{aligned} \text{Cooler Pressure Drop at 200 GPM} &= 2.9\text{ft} \\ \text{Condenser Pressure Drop at 288 GPM} &= 5.5\text{ft} \end{aligned}$$

# Ratings (R-22 English)

| LCWT<br>(°F) | LEAVING CONDENSER WATER TEMPERATURE (°F) |    |     |     |      |    |     |     |       |    |     |  |
|--------------|--|----|-----|-----|------|----|-----|-----|-------|----|-----|--|
|              | 85.0                                     |    |     |     | 95.0 |    |     |     | 105.0 |    |     |  |
|              | TONS                                     | KW | MBH | EER | TONS | KW | MBH | EER | TONS  | KW | MBH |  |

## YCWS0100SC

IPLV = 18.8

|      |       |      |        |      |       |      |        |      |      |      |        |      |
|------|-------|------|--------|------|-------|------|--------|------|------|------|--------|------|
| 40.0 | 89.4  | 63.3 | 1288.0 | 17.0 | 84.1  | 71.5 | 1253.0 | 14.1 | 78.7 | 80.7 | 1219.0 | 11.7 |
| 42.0 | 93.1  | 63.4 | 1333.0 | 17.6 | 87.7  | 71.8 | 1297.0 | 14.7 | 82.1 | 80.9 | 1260.0 | 12.2 |
| 44.0 | 96.9  | 63.5 | 1379.0 | 18.3 | 91.3  | 72.0 | 1341.0 | 15.2 | 85.6 | 81.1 | 1304.0 | 12.7 |
| 45.0 | 98.8  | 63.6 | 1402.0 | 18.7 | 93.2  | 72.2 | 1364.0 | 15.5 | 87.4 | 81.2 | 1325.0 | 12.9 |
| 46.0 | 100.7 | 63.6 | 1426.0 | 19.0 | 95.0  | 72.3 | 1387.0 | 15.8 | 89.2 | 81.4 | 1348.0 | 13.2 |
| 48.0 | 104.7 | 63.5 | 1473.0 | 19.8 | 98.9  | 72.5 | 1434.0 | 16.4 | 92.9 | 81.7 | 1393.0 | 13.7 |
| 50.0 | 108.8 | 63.4 | 1522.0 | 20.6 | 102.8 | 72.7 | 1482.0 | 17.0 | 96.7 | 81.9 | 1439.0 | 14.2 |

## YCWS0120SC

IPLV = 18.2

|      |       |      |        |      |       |      |        |      |       |      |        |      |
|------|-------|------|--------|------|-------|------|--------|------|-------|------|--------|------|
| 40.0 | 108.0 | 75.6 | 1553.0 | 17.1 | 101.7 | 85.6 | 1512.0 | 14.3 | 95.3  | 96.6 | 1473.0 | 11.8 |
| 42.0 | 112.3 | 75.8 | 1607.0 | 17.8 | 105.9 | 85.9 | 1564.0 | 14.8 | 99.3  | 96.9 | 1522.0 | 12.3 |
| 44.0 | 116.8 | 76.0 | 1661.0 | 18.5 | 110.3 | 86.2 | 1617.0 | 15.4 | 103.5 | 97.2 | 1573.0 | 12.8 |
| 45.0 | 119.1 | 76.0 | 1689.0 | 18.8 | 112.5 | 86.3 | 1644.0 | 15.6 | 105.6 | 97.3 | 1599.0 | 13.0 |
| 46.0 | 121.5 | 76.0 | 1717.0 | 19.2 | 114.7 | 86.5 | 1671.0 | 15.9 | 107.8 | 97.5 | 1626.0 | 13.3 |
| 48.0 | 126.2 | 76.0 | 1774.0 | 19.9 | 119.3 | 86.7 | 1727.0 | 16.5 | 112.2 | 97.8 | 1680.0 | 13.8 |
| 50.0 | 131.1 | 75.9 | 1832.0 | 20.7 | 124.0 | 86.9 | 1784.0 | 17.1 | 116.7 | 98.1 | 1735.0 | 14.3 |

## YCWS0140SC

IPLV = 19.3

|      |       |      |        |      |       |       |        |      |       |       |        |      |
|------|-------|------|--------|------|-------|-------|--------|------|-------|-------|--------|------|
| 40.0 | 127.8 | 88.1 | 1834.0 | 17.4 | 120.4 | 99.8  | 1786.0 | 14.5 | 112.9 | 112.9 | 1740.0 | 12.0 |
| 42.0 | 132.9 | 88.3 | 1896.0 | 18.1 | 125.4 | 100.2 | 1847.0 | 15.0 | 117.7 | 113.1 | 1798.0 | 12.5 |
| 44.0 | 138.2 | 88.5 | 1960.0 | 18.7 | 130.5 | 100.5 | 1909.0 | 15.6 | 122.6 | 113.4 | 1858.0 | 13.0 |
| 45.0 | 140.9 | 88.5 | 1993.0 | 19.1 | 133.1 | 100.7 | 1940.0 | 15.9 | 125.1 | 113.6 | 1889.0 | 13.2 |
| 46.0 | 143.6 | 88.6 | 2025.0 | 19.5 | 135.7 | 100.8 | 1973.0 | 16.2 | 127.7 | 113.7 | 1920.0 | 13.5 |
| 48.0 | 149.2 | 88.6 | 2093.0 | 20.2 | 141.1 | 101.1 | 2038.0 | 16.7 | 132.8 | 114.1 | 1983.0 | 14.0 |
| 50.0 | 154.9 | 88.6 | 2161.0 | 21.0 | 146.6 | 101.3 | 2105.0 | 17.4 | 138.1 | 114.4 | 2047.0 | 14.5 |

## YCWS0180SC

IPLV = 20.9

|      |       |      |        |      |       |       |        |      |       |       |        |      |
|------|-------|------|--------|------|-------|-------|--------|------|-------|-------|--------|------|
| 40.0 | 156.6 | 97.9 | 2213.0 | 19.2 | 147.7 | 111.5 | 2153.0 | 15.9 | 138.5 | 126.2 | 2093.0 | 13.2 |
| 42.0 | 163.2 | 98.0 | 2292.0 | 20.0 | 153.9 | 111.8 | 2229.0 | 16.5 | 144.5 | 126.5 | 2166.0 | 13.7 |
| 44.0 | 169.6 | 97.9 | 2369.0 | 20.8 | 160.3 | 112.0 | 2306.0 | 17.2 | 150.6 | 126.8 | 2240.0 | 14.3 |
| 45.0 | 172.9 | 97.9 | 2409.0 | 21.2 | 163.6 | 112.1 | 2345.0 | 17.5 | 153.7 | 126.9 | 2278.0 | 14.5 |
| 46.0 | 176.5 | 97.8 | 2452.0 | 21.7 | 166.5 | 112.2 | 2380.0 | 17.8 | 156.9 | 127.1 | 2317.0 | 14.8 |
| 48.0 | 183.5 | 97.5 | 2535.0 | 22.6 | 173.6 | 112.4 | 2466.0 | 18.5 | 163.4 | 127.4 | 2395.0 | 15.4 |
| 50.0 | 190.9 | 97.2 | 2622.0 | 23.6 | 180.5 | 112.5 | 2549.0 | 19.3 | 170.0 | 127.7 | 2476.0 | 16.0 |

### NOTES:

1. Tons = Unit Cooling Capacity Output
2. kW = Compressor Input Power
3. MBH = Condenser heat rejection
4. EER = Chiller Energy Efficiency Ratio (Capacity [Tons x 12] ÷ kW)
5. LCWT = Leaving Chilled Water Temperature
6. Ratings based on 2.4 GPM cooler water per ton
7. Ratings certified in accordance with ARI Standard 550/590-98.

| LCWT<br>(°F) | LEAVING CONDENSER WATER TEMPERATURE (°F) |      |    |     |      |      |    |     |       |      |    |     |
|--------------|--|------|----|-----|------|------|----|-----|-------|------|----|-----|
|              | 85.0                                     |      |    |     | 95.0 |      |    |     | 105.0 |      |    |     |
|              |  | TONS | KW | MBH | EER  | TONS | KW | MBH | EER   | TONS | KW | MBH |

**YCWS0200SC****IPLV = 21.8**

|             |       |       |        |      |       |       |        |      |       |       |        |      |
|-------------|-------|-------|--------|------|-------|-------|--------|------|-------|-------|--------|------|
| <b>40.0</b> | 179.1 | 110.1 | 2525.0 | 19.5 | 168.8 | 125.4 | 2454.0 | 16.2 | 158.3 | 142.0 | 2384.0 | 13.4 |
| <b>42.0</b> | 186.3 | 110.2 | 2611.0 | 20.3 | 175.7 | 125.7 | 2538.0 | 16.8 | 165.1 | 142.3 | 2467.0 | 13.9 |
| <b>44.0</b> | 194.0 | 110.1 | 2703.0 | 21.1 | 183.2 | 126.0 | 2629.0 | 17.4 | 171.9 | 142.6 | 2549.0 | 14.5 |
| <b>45.0</b> | 197.8 | 110.1 | 2749.0 | 21.6 | 186.7 | 126.1 | 2671.0 | 17.8 | 175.6 | 142.8 | 2594.0 | 14.8 |
| <b>46.0</b> | 201.7 | 110.0 | 2796.0 | 22.0 | 190.6 | 126.2 | 2717.0 | 18.1 | 179.1 | 143.0 | 2637.0 | 15.0 |
| <b>48.0</b> | 209.6 | 109.8 | 2890.0 | 22.9 | 198.3 | 126.4 | 2811.0 | 18.8 | 186.6 | 143.3 | 2729.0 | 15.6 |
| <b>50.0</b> | 217.7 | 109.4 | 2986.0 | 23.9 | 206.2 | 126.5 | 2906.0 | 19.6 | 194.3 | 143.7 | 2821.0 | 16.2 |

**YCWS0220SC****IPLV = 20.8**

|             |       |       |        |      |       |       |        |      |       |       |        |      |
|-------------|-------|-------|--------|------|-------|-------|--------|------|-------|-------|--------|------|
| <b>40.0</b> | 195.2 | 121.3 | 2756.0 | 19.3 | 183.8 | 138.1 | 2677.0 | 16.0 | 172.5 | 156.2 | 2603.0 | 13.3 |
| <b>42.0</b> | 203.1 | 121.4 | 2851.0 | 20.1 | 191.7 | 138.5 | 2773.0 | 16.6 | 179.7 | 156.6 | 2691.0 | 13.8 |
| <b>44.0</b> | 211.2 | 121.4 | 2948.0 | 20.9 | 199.6 | 138.8 | 2869.0 | 17.3 | 187.5 | 157.0 | 2786.0 | 14.3 |
| <b>45.0</b> | 215.3 | 121.4 | 2997.0 | 21.3 | 203.7 | 138.9 | 2918.0 | 17.6 | 191.2 | 157.2 | 2831.0 | 14.6 |
| <b>46.0</b> | 219.5 | 121.3 | 3047.0 | 21.7 | 207.6 | 139.1 | 2966.0 | 17.9 | 195.4 | 157.4 | 2882.0 | 14.9 |
| <b>48.0</b> | 228.4 | 121.1 | 3154.0 | 22.6 | 215.4 | 139.3 | 3060.0 | 18.6 | 203.4 | 157.8 | 2980.0 | 15.5 |
| <b>50.0</b> | 237.3 | 120.7 | 3260.0 | 23.6 | 224.7 | 139.4 | 3171.0 | 19.3 | 211.5 | 158.2 | 3078.0 | 16.0 |

**YCWS0240SC****IPLV = 21.2**

|             |       |       |        |      |       |       |        |      |       |       |        |      |
|-------------|-------|-------|--------|------|-------|-------|--------|------|-------|-------|--------|------|
| <b>40.0</b> | 210.6 | 132.7 | 2981.0 | 19.0 | 198.0 | 151.0 | 2891.0 | 15.7 | 185.9 | 170.7 | 2814.0 | 13.1 |
| <b>42.0</b> | 219.2 | 132.9 | 3084.0 | 19.8 | 205.9 | 151.4 | 2988.0 | 16.3 | 193.9 | 171.2 | 2911.0 | 13.6 |
| <b>44.0</b> | 228.1 | 133.0 | 3191.0 | 20.6 | 215.4 | 151.8 | 3102.0 | 17.0 | 202.3 | 171.6 | 3014.0 | 14.1 |
| <b>45.0</b> | 232.6 | 132.9 | 3245.0 | 21.0 | 219.7 | 152.0 | 3155.0 | 17.3 | 206.5 | 171.9 | 3065.0 | 14.4 |
| <b>46.0</b> | 237.2 | 132.9 | 3299.0 | 21.4 | 224.1 | 152.2 | 3208.0 | 17.7 | 210.8 | 172.1 | 3116.0 | 14.7 |
| <b>48.0</b> | 246.5 | 132.7 | 3411.0 | 22.3 | 233.1 | 152.4 | 3317.0 | 18.4 | 219.4 | 172.6 | 3222.0 | 15.3 |
| <b>50.0</b> | 256.1 | 132.4 | 3524.0 | 23.2 | 242.3 | 152.6 | 3429.0 | 19.1 | 228.3 | 173.1 | 3330.0 | 15.8 |

**NOTES:**

1. Tons = Unit Cooling Capacity Output
2. kW = Compressor Input Power
3. MBH = Condenser heat rejection
4. EER = Chiller Energy Efficiency Ratio (Capacity [Tons x 12] ÷ kW)
5. LCWT = Leaving Chilled Water Temperature
6. Ratings based on 2.4 GPM cooler water per ton
7. Ratings certified in accordance with ARI Standard 550/590-98.

# Ratings (R-22 SI)

| LCWT<br>(°C) | LEAVING CONDENSER WATER TEMPERATURE (°C) |     |    |     |      |     |    |     |      |     |    |     |
|--------------|--|-----|----|-----|------|-----|----|-----|------|-----|----|-----|
|              | 30.0                                     |     |    |     | 35.0 |     |    |     | 40.0 |     |    |     |
|              | KWo                                      | KWi | KW | COP | KWo  | KWi | KW | COP | KWo  | KWi | KW | COP |

## YCWS0100SC

|      |       |      |       |     |       |      |       |     |       |      |       |     |
|------|-------|------|-------|-----|-------|------|-------|-----|-------|------|-------|-----|
| 5.0  | 316.4 | 64.1 | 380.0 | 4.9 | 299.5 | 71.6 | 371.0 | 4.2 | 282.3 | 79.8 | 362.0 | 3.5 |
| 6.0  | 328.1 | 64.3 | 392.0 | 5.1 | 310.8 | 71.8 | 382.0 | 4.3 | 293.2 | 80.0 | 373.0 | 3.7 |
| 7.0  | 340.1 | 64.4 | 404.0 | 5.3 | 322.4 | 72.1 | 394.0 | 4.5 | 304.3 | 80.2 | 384.0 | 3.8 |
| 8.0  | 352.4 | 64.5 | 416.0 | 5.5 | 334.4 | 72.3 | 406.0 | 4.6 | 315.7 | 80.4 | 396.0 | 3.9 |
| 9.0  | 365.1 | 64.5 | 429.0 | 5.7 | 346.5 | 72.5 | 419.0 | 4.8 | 327.6 | 80.7 | 408.0 | 4.1 |
| 10.0 | 377.9 | 64.4 | 442.0 | 5.9 | 359.0 | 72.7 | 431.0 | 4.9 | 339.5 | 81.0 | 420.0 | 4.2 |

## YCWS0120SC

|      |       |      |       |     |       |      |       |     |       |      |       |     |
|------|-------|------|-------|-----|-------|------|-------|-----|-------|------|-------|-----|
| 5.0  | 382.2 | 76.7 | 458.0 | 5.0 | 362.1 | 85.7 | 447.0 | 4.2 | 341.6 | 95.6 | 437.0 | 3.6 |
| 6.0  | 396.1 | 76.9 | 473.0 | 5.2 | 375.6 | 86.0 | 461.0 | 4.4 | 354.6 | 95.8 | 450.0 | 3.7 |
| 7.0  | 410.5 | 77.0 | 487.0 | 5.3 | 389.5 | 86.3 | 475.0 | 4.5 | 368.0 | 96.1 | 464.0 | 3.8 |
| 8.0  | 425.1 | 77.1 | 502.0 | 5.5 | 403.6 | 86.5 | 490.0 | 4.7 | 381.7 | 96.4 | 478.0 | 4.0 |
| 9.0  | 440.1 | 77.1 | 517.0 | 5.7 | 418.2 | 86.7 | 504.0 | 4.8 | 395.7 | 96.7 | 492.0 | 4.1 |
| 10.0 | 455.5 | 77.1 | 532.0 | 5.9 | 432.9 | 86.9 | 519.0 | 5.0 | 410.0 | 96.9 | 507.0 | 4.2 |

## YCWS0140SC

|      |       |      |       |     |       |       |       |     |       |       |       |     |
|------|-------|------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|
| 5.0  | 452.5 | 89.3 | 541.0 | 5.1 | 428.9 | 100.0 | 528.0 | 4.3 | 405.4 | 111.6 | 517.0 | 3.6 |
| 6.0  | 468.9 | 89.5 | 558.0 | 5.2 | 444.9 | 100.3 | 545.0 | 4.4 | 420.5 | 111.8 | 532.0 | 3.8 |
| 7.0  | 485.7 | 89.7 | 575.0 | 5.4 | 461.2 | 100.6 | 561.0 | 4.6 | 436.0 | 112.1 | 548.0 | 3.9 |
| 8.0  | 502.9 | 89.8 | 592.0 | 5.6 | 477.8 | 100.8 | 578.0 | 4.7 | 452.3 | 112.4 | 564.0 | 4.0 |
| 9.0  | 520.5 | 89.9 | 610.0 | 5.8 | 494.9 | 101.1 | 596.0 | 4.9 | 468.6 | 112.8 | 581.0 | 4.2 |
| 10.0 | 538.6 | 89.9 | 628.0 | 6.0 | 511.9 | 101.3 | 613.0 | 5.1 | 485.6 | 113.1 | 598.0 | 4.3 |

## YCWS0180SC

|      |       |      |       |     |       |       |       |     |       |       |       |     |
|------|-------|------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|
| 5.0  | 554.1 | 99.4 | 653.0 | 5.6 | 525.2 | 111.7 | 636.0 | 4.7 | 496.0 | 124.8 | 620.0 | 4.0 |
| 6.0  | 574.6 | 99.4 | 674.0 | 5.8 | 545.2 | 111.9 | 657.0 | 4.9 | 515.0 | 125.1 | 640.0 | 4.1 |
| 7.0  | 594.4 | 99.4 | 693.0 | 6.0 | 565.5 | 112.1 | 677.0 | 5.0 | 534.1 | 125.4 | 659.0 | 4.3 |
| 8.0  | 616.7 | 99.3 | 716.0 | 6.2 | 586.3 | 112.3 | 698.0 | 5.2 | 554.7 | 125.7 | 680.0 | 4.4 |
| 9.0  | 638.9 | 99.2 | 738.0 | 6.4 | 608.8 | 112.5 | 721.0 | 5.4 | 575.7 | 125.9 | 701.0 | 4.6 |
| 10.0 | 661.6 | 98.9 | 760.0 | 6.7 | 629.2 | 112.5 | 741.0 | 5.6 | 596.4 | 126.2 | 722.0 | 4.7 |

### NOTES:

1. KWo = Unit kW Cooling Capacity Output
2. KWi = Compressor kW Input
3. COP = Coefficient of Performance
4. LCWT= Leaving Chilled Water Temperature
5. Ratings based on 0.047 l/s cooler water per kW.



| LCWT<br>(°C) | LEAVING CONDENSER WATER TEMPERATURE (°C) |                 |    |     |                 |                 |    |     |                 |                 |    |     |
|--------------|--|-----------------|----|-----|-----------------|-----------------|----|-----|-----------------|-----------------|----|-----|
|              | 30.0                                     |                 |    |     | 35.0            |                 |    |     | 40.0            |                 |    |     |
|              | KW <sub>o</sub>                          | KW <sub>i</sub> | KW | COP | KW <sub>o</sub> | KW <sub>i</sub> | KW | COP | KW <sub>o</sub> | KW <sub>i</sub> | KW | COP |

**YCWS0200SC**

|             |       |       |       |     |       |       |       |     |       |       |       |     |
|-------------|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|
| <b>5.0</b>  | 632.7 | 111.7 | 744.0 | 5.7 | 599.6 | 125.6 | 725.0 | 4.8 | 567.2 | 140.4 | 707.0 | 4.0 |
| <b>6.0</b>  | 657.1 | 111.8 | 768.0 | 5.9 | 623.4 | 125.9 | 749.0 | 5.0 | 589.0 | 140.7 | 729.0 | 4.2 |
| <b>7.0</b>  | 681.1 | 111.8 | 792.0 | 6.1 | 646.6 | 126.1 | 772.0 | 5.1 | 609.7 | 141.0 | 750.0 | 4.3 |
| <b>8.0</b>  | 705.4 | 111.7 | 817.0 | 6.3 | 668.4 | 126.3 | 794.0 | 5.3 | 632.8 | 141.3 | 774.0 | 4.5 |
| <b>9.0</b>  | 730.4 | 111.5 | 842.0 | 6.6 | 694.6 | 126.4 | 821.0 | 5.5 | 657.8 | 141.6 | 799.0 | 4.6 |
| <b>10.0</b> | 756.0 | 111.3 | 867.0 | 6.8 | 719.3 | 126.5 | 845.0 | 5.7 | 681.8 | 141.9 | 823.0 | 4.8 |

**YCWS0220SC**

|             |       |       |       |     |       |       |       |     |       |       |       |     |
|-------------|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|
| <b>5.0</b>  | 690.4 | 123.1 | 813.0 | 5.6 | 654.5 | 138.3 | 792.0 | 4.7 | 617.7 | 154.5 | 772.0 | 4.0 |
| <b>6.0</b>  | 714.3 | 123.2 | 837.0 | 5.8 | 679.1 | 138.6 | 817.0 | 4.9 | 641.4 | 154.9 | 796.0 | 4.1 |
| <b>7.0</b>  | 741.9 | 123.2 | 865.0 | 6.0 | 704.3 | 138.9 | 843.0 | 5.1 | 664.2 | 155.2 | 819.0 | 4.3 |
| <b>8.0</b>  | 768.6 | 123.2 | 891.0 | 6.2 | 730.1 | 139.2 | 869.0 | 5.3 | 690.2 | 155.6 | 845.0 | 4.4 |
| <b>9.0</b>  | 795.9 | 123.1 | 919.0 | 6.5 | 756.5 | 139.4 | 896.0 | 5.4 | 716.4 | 156.0 | 872.0 | 4.6 |
| <b>10.0</b> | 823.9 | 122.8 | 946.0 | 6.7 | 783.6 | 139.5 | 923.0 | 5.6 | 742.5 | 156.4 | 898.0 | 4.8 |

**YCWS0240SC**

|             |       |       |        |     |       |       |       |     |       |       |       |     |
|-------------|-------|-------|--------|-----|-------|-------|-------|-----|-------|-------|-------|-----|
| <b>5.0</b>  | 745.5 | 134.7 | 880.0  | 5.5 | 706.5 | 151.2 | 857.0 | 4.7 | 666.6 | 168.9 | 835.0 | 4.0 |
| <b>6.0</b>  | 772.8 | 134.9 | 907.0  | 5.7 | 733.1 | 151.6 | 884.0 | 4.8 | 692.3 | 169.3 | 861.0 | 4.1 |
| <b>7.0</b>  | 800.9 | 134.9 | 935.0  | 5.9 | 760.4 | 152.0 | 912.0 | 5.0 | 718.6 | 169.7 | 888.0 | 4.2 |
| <b>8.0</b>  | 829.6 | 134.9 | 964.0  | 6.2 | 788.2 | 152.3 | 940.0 | 5.2 | 745.6 | 170.2 | 915.0 | 4.4 |
| <b>9.0</b>  | 859.0 | 134.8 | 993.0  | 6.4 | 816.6 | 152.5 | 969.0 | 5.4 | 773.2 | 170.6 | 943.0 | 4.5 |
| <b>10.0</b> | 897.9 | 134.5 | 1032.0 | 6.7 | 845.7 | 152.7 | 998.0 | 5.5 | 801.3 | 171.0 | 972.0 | 4.7 |

**NOTES:**

1. KW<sub>o</sub> = Unit kW Cooling Capacity Output
2. KW<sub>i</sub> = Compressor kW Input
3. COP = Coefficient of Performance
4. LCWT = Leaving Chilled Water Temperature
5. Ratings based on 0.047 l/s cooler water per kW.

# Ratings- Brine (30 % Ethylene Glycol) (R-22 English)

| LCWT<br>(°F) | LEAVING CONDENSER WATER TEMPERATURE (°F) |      |    |     |      |      |    |     |       |      |    |     |
|--------------|--|------|----|-----|------|------|----|-----|-------|------|----|-----|
|              | 85.0                                     |      |    |     | 95.0 |      |    |     | 105.0 |      |    |     |
|              |  | TONS | KW | MBH | EER  | TONS | KW | MBH | EER   | TONS | KW | MBH |

## YCWS0100SC

|      |      |      |        |      |      |      |        |      |      |      |        |      |
|------|------|------|--------|------|------|------|--------|------|------|------|--------|------|
| 16.0 | 45.6 | 61.6 | 757.0  | 8.9  | 42.2 | 72.0 | 751.0  | 7.0  | 38.6 | 85.7 | 755.0  | 5.4  |
| 20.0 | 50.9 | 60.9 | 818.0  | 10.0 | 47.2 | 70.5 | 807.0  | 8.0  | 43.4 | 82.8 | 803.0  | 6.3  |
| 24.0 | 56.9 | 61.2 | 891.0  | 11.2 | 53.0 | 70.1 | 875.0  | 9.1  | 49.0 | 81.4 | 865.0  | 7.2  |
| 28.0 | 63.9 | 61.6 | 977.0  | 12.5 | 59.7 | 70.1 | 955.0  | 10.2 | 55.4 | 80.5 | 939.0  | 8.3  |
| 32.0 | 72.3 | 62.1 | 1080.0 | 14.0 | 67.8 | 70.3 | 1053.0 | 11.6 | 63.1 | 80.2 | 1030.0 | 9.4  |
| 36.0 | 81.7 | 62.8 | 1194.0 | 15.6 | 76.7 | 71.0 | 1162.0 | 13.0 | 71.6 | 80.4 | 1133.0 | 10.7 |
| 40.0 | 88.7 | 63.2 | 1280.0 | 16.8 | 83.5 | 71.5 | 1245.0 | 14.0 | 78.1 | 80.6 | 1212.0 | 11.6 |

## YCWS0120SC

|      |       |      |        |      |       |      |        |      |      |       |        |      |
|------|-------|------|--------|------|-------|------|--------|------|------|-------|--------|------|
| 16.0 | 55.4  | 73.7 | 916.0  | 9.0  | 51.3  | 86.0 | 909.0  | 7.2  | 47.2 | 101.8 | 913.0  | 5.6  |
| 20.0 | 61.7  | 72.9 | 989.0  | 10.1 | 57.4  | 84.3 | 976.0  | 8.2  | 52.9 | 98.7  | 972.0  | 6.4  |
| 24.0 | 68.9  | 73.2 | 1076.0 | 11.3 | 64.3  | 83.9 | 1057.0 | 9.2  | 59.6 | 97.2  | 1046.0 | 7.4  |
| 28.0 | 77.3  | 73.7 | 1179.0 | 12.6 | 72.4  | 83.9 | 1154.0 | 10.3 | 67.3 | 96.4  | 1136.0 | 8.4  |
| 32.0 | 87.4  | 74.3 | 1302.0 | 14.1 | 82.0  | 84.2 | 1271.0 | 11.7 | 76.4 | 96.0  | 1245.0 | 9.6  |
| 36.0 | 98.5  | 75.1 | 1438.0 | 15.7 | 92.7  | 85.0 | 1402.0 | 13.1 | 86.6 | 96.3  | 1368.0 | 10.8 |
| 40.0 | 106.9 | 75.6 | 1540.0 | 17.0 | 100.7 | 85.5 | 1500.0 | 14.1 | 94.4 | 96.6  | 1462.0 | 11.7 |

## YCWS0140SC

|      |       |      |        |      |       |       |        |      |       |       |        |      |
|------|-------|------|--------|------|-------|-------|--------|------|-------|-------|--------|------|
| 16.0 | 65.8  | 86.0 | 1083.0 | 9.2  | 61.0  | 100.4 | 1075.0 | 7.3  | 56.2  | 118.5 | 1078.0 | 5.7  |
| 20.0 | 73.2  | 85.2 | 1169.0 | 10.3 | 68.2  | 98.4  | 1154.0 | 8.3  | 63.0  | 115.0 | 1148.0 | 6.6  |
| 24.0 | 81.7  | 85.4 | 1272.0 | 11.5 | 76.3  | 98.0  | 1250.0 | 9.4  | 70.8  | 113.4 | 1236.0 | 7.5  |
| 28.0 | 91.7  | 85.9 | 1393.0 | 12.8 | 85.8  | 98.0  | 1364.0 | 10.5 | 79.9  | 112.5 | 1342.0 | 8.5  |
| 32.0 | 103.5 | 86.6 | 1537.0 | 14.3 | 97.2  | 98.3  | 1501.0 | 11.9 | 90.7  | 112.2 | 1471.0 | 9.7  |
| 36.0 | 116.5 | 87.5 | 1697.0 | 16.0 | 109.7 | 99.1  | 1654.0 | 13.3 | 102.7 | 112.5 | 1616.0 | 11.0 |
| 40.0 | 126.5 | 88.1 | 1818.0 | 17.2 | 119.2 | 99.8  | 1770.0 | 14.3 | 111.8 | 112.8 | 1726.0 | 11.9 |

## YCWS0180SC

|      |       |      |        |      |       |       |        |      |       |       |        |      |
|------|-------|------|--------|------|-------|-------|--------|------|-------|-------|--------|------|
| 16.0 | 80.0  | 96.1 | 1288.0 | 10.0 | 74.9  | 111.4 | 1279.0 | 8.1  | 68.8  | 130.6 | 1271.0 | 6.3  |
| 20.0 | 89.9  | 95.3 | 1403.0 | 11.3 | 83.2  | 109.7 | 1373.0 | 9.1  | 76.9  | 127.4 | 1357.0 | 7.2  |
| 24.0 | 98.8  | 95.6 | 1511.0 | 12.4 | 93.4  | 109.4 | 1494.0 | 10.2 | 88.2  | 125.9 | 1488.0 | 8.4  |
| 28.0 | 112.7 | 96.2 | 1680.0 | 14.1 | 104.9 | 109.6 | 1632.0 | 11.5 | 97.3  | 125.4 | 1595.0 | 9.3  |
| 32.0 | 127.4 | 96.8 | 1859.0 | 15.8 | 119.7 | 110.0 | 1811.0 | 13.0 | 110.0 | 125.2 | 1747.0 | 10.5 |
| 36.0 | 143.8 | 97.6 | 2059.0 | 17.7 | 135.4 | 110.9 | 2003.0 | 14.6 | 126.7 | 125.7 | 1949.0 | 12.1 |
| 40.0 | 156.0 | 97.9 | 2206.0 | 19.1 | 146.8 | 111.5 | 2142.0 | 15.8 | 138.0 | 126.2 | 2087.0 | 13.1 |

### NOTES:

1. Tons = Unit Cooling Capacity Output
2. kW = Compressor Input Power
3. MBH = Condenser heat rejection
4. EER = Chiller Energy Efficiency Ratio (Capacity [Tons x 12] ÷ kW)
5. LCWT = Leaving Chilled Water Temperature
6. Ratings based on 2.4 GPM cooler water per ton
7. For ratings other than 30% glycol, refer to the design 03 dxchill program.

| LCWT<br>(°F) | LEAVING CONDENSER WATER TEMPERATURE (°F) |    |     |     |      |    |     |     |       |    |     |     |
|--------------|--|----|-----|-----|------|----|-----|-----|-------|----|-----|-----|
|              | 85.0                                     |    |     |     | 95.0 |    |     |     | 105.0 |    |     |     |
|              | TONS                                     | KW | MBH | EER | TONS | KW | MBH | EER | TONS  | KW | MBH | EER |

**YCWS0200SC**

|             |       |       |        |      |       |       |        |      |       |       |        |      |
|-------------|-------|-------|--------|------|-------|-------|--------|------|-------|-------|--------|------|
| <b>16.0</b> | 92.3  | 108.0 | 1476.0 | 10.2 | 85.8  | 125.0 | 1456.0 | 8.2  | 78.7  | 146.1 | 1443.0 | 6.5  |
| <b>20.0</b> | 102.8 | 107.2 | 1599.0 | 11.5 | 94.5  | 123.3 | 1555.0 | 9.2  | 87.6  | 142.8 | 1538.0 | 7.4  |
| <b>24.0</b> | 114.8 | 107.6 | 1744.0 | 12.8 | 107.3 | 123.0 | 1707.0 | 10.5 | 99.6  | 141.4 | 1678.0 | 8.5  |
| <b>28.0</b> | 128.8 | 108.2 | 1915.0 | 14.3 | 120.7 | 123.3 | 1869.0 | 11.8 | 112.4 | 140.8 | 1830.0 | 9.6  |
| <b>32.0</b> | 145.7 | 108.9 | 2119.0 | 16.1 | 136.8 | 123.8 | 2064.0 | 13.3 | 127.7 | 140.8 | 2013.0 | 10.9 |
| <b>36.0</b> | 164.3 | 109.7 | 2346.0 | 18.0 | 154.7 | 124.8 | 2282.0 | 14.9 | 144.8 | 141.4 | 2220.0 | 12.3 |
| <b>40.0</b> | 178.3 | 110.1 | 2515.0 | 19.4 | 168.1 | 125.4 | 2445.0 | 16.1 | 157.8 | 141.9 | 2378.0 | 13.3 |

**YCWS0220SC**

|             |       |       |        |      |       |       |        |      |       |       |        |      |
|-------------|-------|-------|--------|------|-------|-------|--------|------|-------|-------|--------|------|
| <b>16.0</b> | 100.3 | 118.7 | 1609.0 | 10.1 | 93.1  | 137.4 | 1586.0 | 8.1  | 85.3  | 160.6 | 1572.0 | 6.4  |
| <b>20.0</b> | 110.4 | 117.7 | 1726.0 | 11.3 | 103.2 | 135.4 | 1701.0 | 9.1  | 95.1  | 157.0 | 1677.0 | 7.3  |
| <b>24.0</b> | 125.2 | 118.3 | 1905.0 | 12.7 | 116.8 | 135.2 | 1862.0 | 10.4 | 108.3 | 155.4 | 1830.0 | 8.4  |
| <b>28.0</b> | 140.4 | 119.0 | 2091.0 | 14.2 | 131.5 | 135.5 | 2041.0 | 11.6 | 122.4 | 154.8 | 1997.0 | 9.5  |
| <b>32.0</b> | 158.6 | 119.8 | 2312.0 | 15.9 | 145.8 | 136.0 | 2213.0 | 12.9 | 139.1 | 154.8 | 2197.0 | 10.8 |
| <b>36.0</b> | 179.0 | 120.8 | 2561.0 | 17.8 | 168.5 | 137.3 | 2491.0 | 14.7 | 157.8 | 155.6 | 2424.0 | 12.2 |
| <b>40.0</b> | 194.2 | 121.3 | 2744.0 | 19.2 | 183.2 | 138.1 | 2670.0 | 15.9 | 171.8 | 156.2 | 2595.0 | 13.2 |

**YCWS0240SC**

|             |       |       |        |      |       |       |        |      |       |       |        |      |
|-------------|-------|-------|--------|------|-------|-------|--------|------|-------|-------|--------|------|
| <b>16.0</b> | 108.6 | 129.7 | 1745.0 | 10.0 | 98.3  | 150.6 | 1693.0 | 7.8  | 90.0  | 176.4 | 1682.0 | 6.1  |
| <b>20.0</b> | 120.8 | 128.7 | 1889.0 | 11.3 | 112.2 | 148.0 | 1852.0 | 9.1  | 103.5 | 171.5 | 1827.0 | 7.2  |
| <b>24.0</b> | 134.9 | 129.3 | 2060.0 | 12.5 | 126.0 | 147.8 | 2016.0 | 10.2 | 116.8 | 169.9 | 1982.0 | 8.3  |
| <b>28.0</b> | 151.5 | 130.1 | 2262.0 | 14.0 | 141.8 | 148.1 | 2207.0 | 11.5 | 132.0 | 169.2 | 2161.0 | 9.4  |
| <b>32.0</b> | 171.3 | 131.0 | 2502.0 | 15.7 | 160.8 | 148.8 | 2437.0 | 13.0 | 146.2 | 169.2 | 2332.0 | 10.4 |
| <b>36.0</b> | 192.7 | 132.2 | 2764.0 | 17.5 | 181.7 | 150.1 | 2692.0 | 14.5 | 170.1 | 170.0 | 2621.0 | 12.0 |
| <b>40.0</b> | 209.1 | 132.7 | 2963.0 | 18.9 | 197.1 | 150.9 | 2880.0 | 15.7 | 185.3 | 170.7 | 2806.0 | 13.0 |

**NOTES:**

1. Tons = Unit Cooling Capacity Output
2. kW = Compressor Input Power
3. MBH = Condenser heat rejection
4. EER = Chiller Energy Efficiency Ratio (Capacity [Tons x 12] ÷ kW)
5. LCWT = Leaving Chilled Water Temperature
6. Ratings based on 2.4 GPM cooler water per ton
7. For ratings other than 30% glycol, refer to the design 03 dxchill program.

# Ratings- Brine (30 % Ethylene Glycol) (R-22 SI)

| LCWT<br>(°C) | LEAVING CONDENSER WATER TEMPERATURE (°C) |                 |    |     |                 |                 |    |     |                 |                 |    |     |
|--------------|--|-----------------|----|-----|-----------------|-----------------|----|-----|-----------------|-----------------|----|-----|
|              | 30.0                                     |                 |    |     | 35.0            |                 |    |     | 40.0            |                 |    |     |
|              | KW <sub>o</sub>                          | KW <sub>i</sub> | KW | COP | KW <sub>o</sub> | KW <sub>i</sub> | KW | COP | KW <sub>o</sub> | KW <sub>i</sub> | KW | COP |

## YCWS0100SC

|      |       |      |       |     |       |      |       |     |       |      |       |     |
|------|-------|------|-------|-----|-------|------|-------|-----|-------|------|-------|-----|
| -8.0 | 166.2 | 61.9 | 228.0 | 2.7 | 155.1 | 71.1 | 226.0 | 2.2 | 141.7 | 82.9 | 224.0 | 1.7 |
| -6.0 | 183.7 | 61.8 | 245.0 | 3.0 | 171.7 | 70.3 | 242.0 | 2.4 | 159.7 | 80.9 | 240.0 | 2.0 |
| -4.0 | 203.3 | 62.0 | 265.0 | 3.3 | 190.7 | 70.1 | 260.0 | 2.7 | 177.9 | 79.9 | 257.0 | 2.2 |
| -2.0 | 226.1 | 62.4 | 288.0 | 3.6 | 212.7 | 70.1 | 282.0 | 3.0 | 198.8 | 79.3 | 278.0 | 2.5 |
| 0.0  | 252.8 | 62.9 | 315.0 | 4.0 | 238.3 | 70.3 | 308.0 | 3.4 | 223.4 | 79.1 | 302.0 | 2.8 |
| 2.0  | 283.1 | 63.5 | 346.0 | 4.5 | 267.4 | 70.9 | 338.0 | 3.8 | 251.3 | 79.3 | 330.0 | 3.2 |
| 4.0  | 305.1 | 64.0 | 369.0 | 4.8 | 288.7 | 71.4 | 360.0 | 4.0 | 271.8 | 79.6 | 351.0 | 3.4 |

## YCWS0120SC

|      |       |      |       |     |       |      |       |     |       |      |       |     |
|------|-------|------|-------|-----|-------|------|-------|-----|-------|------|-------|-----|
| -8.0 | 201.9 | 74.1 | 276.0 | 2.7 | 188.6 | 84.9 | 273.0 | 2.2 | 175.1 | 98.4 | 273.0 | 1.8 |
| -6.0 | 222.6 | 74.0 | 296.0 | 3.0 | 208.7 | 84.1 | 292.0 | 2.5 | 194.4 | 96.6 | 291.0 | 2.0 |
| -4.0 | 246.2 | 74.3 | 320.0 | 3.3 | 231.4 | 83.9 | 315.0 | 2.8 | 216.2 | 95.5 | 311.0 | 2.3 |
| -2.0 | 273.6 | 74.7 | 348.0 | 3.7 | 257.5 | 83.9 | 341.0 | 3.1 | 241.3 | 95.0 | 336.0 | 2.5 |
| 0.0  | 305.4 | 75.2 | 380.0 | 4.1 | 288.3 | 84.2 | 372.0 | 3.4 | 270.7 | 94.7 | 365.0 | 2.9 |
| 2.0  | 341.4 | 76.0 | 417.0 | 4.5 | 323.1 | 84.9 | 408.0 | 3.8 | 304.1 | 95.1 | 399.0 | 3.2 |
| 4.0  | 367.7 | 76.5 | 444.0 | 4.8 | 348.2 | 85.4 | 433.0 | 4.1 | 328.6 | 95.3 | 424.0 | 3.5 |

## YCWS0140SC

|      |       |      |       |     |       |      |       |     |       |       |       |     |
|------|-------|------|-------|-----|-------|------|-------|-----|-------|-------|-------|-----|
| -8.0 | 239.8 | 86.5 | 326.0 | 2.8 | 224.3 | 99.1 | 323.0 | 2.3 | 208.7 | 114.6 | 323.0 | 1.8 |
| -6.0 | 264.2 | 86.4 | 350.0 | 3.1 | 247.9 | 98.2 | 346.0 | 2.5 | 231.2 | 112.7 | 343.0 | 2.1 |
| -4.0 | 292.1 | 86.7 | 378.0 | 3.4 | 274.7 | 97.9 | 372.0 | 2.8 | 256.9 | 111.5 | 368.0 | 2.3 |
| -2.0 | 324.1 | 87.1 | 411.0 | 3.7 | 305.5 | 98.0 | 403.0 | 3.1 | 286.5 | 110.9 | 397.0 | 2.6 |
| 0.0  | 361.8 | 87.7 | 449.0 | 4.1 | 341.7 | 98.3 | 440.0 | 3.5 | 321.2 | 110.7 | 431.0 | 2.9 |
| 2.0  | 404.1 | 88.6 | 492.0 | 4.6 | 382.5 | 99.1 | 481.0 | 3.9 | 360.5 | 111.1 | 471.0 | 3.3 |
| 4.0  | 435.1 | 89.1 | 524.0 | 4.9 | 412.3 | 99.6 | 511.0 | 4.1 | 389.1 | 111.3 | 500.0 | 3.5 |

## YCWS0180SC

|      |       |      |       |     |       |       |       |     |       |       |       |     |
|------|-------|------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|
| -8.0 | 293.8 | 96.7 | 390.0 | 3.0 | 274.6 | 110.2 | 384.0 | 2.5 | 255.6 | 126.6 | 382.0 | 2.0 |
| -6.0 | 323.8 | 96.7 | 420.0 | 3.4 | 302.2 | 109.6 | 411.0 | 2.8 | 283.7 | 124.9 | 408.0 | 2.3 |
| -4.0 | 356.1 | 97.0 | 453.0 | 3.7 | 335.0 | 109.4 | 444.0 | 3.1 | 315.6 | 124.0 | 439.0 | 2.5 |
| -2.0 | 398.5 | 97.5 | 496.0 | 4.1 | 375.6 | 109.6 | 485.0 | 3.4 | 347.8 | 123.7 | 471.0 | 2.8 |
| 0.0  | 445.5 | 98.1 | 543.0 | 4.5 | 420.6 | 110.0 | 530.0 | 3.8 | 389.2 | 123.6 | 512.0 | 3.2 |
| 2.0  | 498.7 | 98.9 | 597.0 | 5.0 | 472.0 | 110.9 | 582.0 | 4.3 | 444.7 | 124.1 | 568.0 | 3.6 |
| 4.0  | 537.1 | 99.2 | 636.0 | 5.4 | 508.6 | 111.4 | 620.0 | 4.6 | 480.5 | 124.5 | 605.0 | 3.9 |

### NOTES:

1. KW<sub>o</sub> = Unit kW Cooling Capacity Output
2. KW<sub>i</sub> = Compressor kW Input
3. COP = Coefficient of Performance
4. LCWT= Leaving Chilled Water Temperature
5. Ratings based on 0.047 l/s cooler water per kW.
6. For ratings other than 30% glycol, refer to the design 03 dxchill program.

| LCWT<br>(°C) | LEAVING CONDENSER WATER TEMPERATURE (°C) |                 |    |     |                 |                 |    |     |                 |                 |    |     |
|--------------|--|-----------------|----|-----|-----------------|-----------------|----|-----|-----------------|-----------------|----|-----|
|              | 30.0                                     |                 |    |     | 35.0            |                 |    |     | 40.0            |                 |    |     |
|              | KW <sub>o</sub>                          | KW <sub>i</sub> | KW | COP | KW <sub>o</sub> | KW <sub>i</sub> | KW | COP | KW <sub>o</sub> | KW <sub>i</sub> | KW | COP |

**YCWS0200SC**

|      |       |       |       |     |       |       |       |     |       |       |       |     |
|------|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|
| -8.0 | 336.2 | 108.7 | 445.0 | 3.1 | 311.0 | 123.8 | 434.0 | 2.5 | 289.7 | 141.9 | 431.0 | 2.0 |
| -6.0 | 371.1 | 108.7 | 479.0 | 3.4 | 348.0 | 123.1 | 471.0 | 2.8 | 324.9 | 140.1 | 465.0 | 2.3 |
| -4.0 | 410.2 | 109.1 | 519.0 | 3.8 | 386.2 | 123.0 | 509.0 | 3.1 | 361.1 | 139.3 | 500.0 | 2.6 |
| -2.0 | 455.6 | 109.7 | 565.0 | 4.2 | 429.6 | 123.3 | 553.0 | 3.5 | 403.1 | 138.9 | 542.0 | 2.9 |
| 0.0  | 509.1 | 110.3 | 619.0 | 4.6 | 481.0 | 123.8 | 604.0 | 3.9 | 452.3 | 138.9 | 591.0 | 3.3 |
| 2.0  | 569.6 | 111.1 | 680.0 | 5.1 | 539.1 | 124.7 | 663.0 | 4.3 | 508.2 | 139.6 | 647.0 | 3.6 |
| 4.0  | 612.8 | 111.5 | 724.0 | 5.5 | 581.6 | 125.3 | 706.0 | 4.6 | 549.0 | 140.1 | 689.0 | 3.9 |

**YCWS0220SC**

|      |       |       |       |     |       |       |       |     |       |       |       |     |
|------|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|
| -8.0 | 366.2 | 119.5 | 485.0 | 3.1 | 0.0   | 0.0   | 468.0 | 0.0 | 318.2 | 155.8 | 474.0 | 2.0 |
| -6.0 | 404.0 | 119.5 | 523.0 | 3.4 | 378.8 | 135.2 | 514.0 | 2.8 | 353.0 | 154.0 | 507.0 | 2.3 |
| -4.0 | 446.9 | 120.0 | 566.0 | 3.7 | 421.1 | 135.2 | 556.0 | 3.1 | 393.0 | 153.1 | 546.0 | 2.6 |
| -2.0 | 496.6 | 120.7 | 617.0 | 4.1 | 468.0 | 135.6 | 603.0 | 3.5 | 438.8 | 152.7 | 591.0 | 2.9 |
| 0.0  | 554.4 | 121.4 | 675.0 | 4.6 | 513.0 | 136.0 | 649.0 | 3.8 | 492.7 | 152.8 | 645.0 | 3.2 |
| 2.0  | 620.9 | 122.4 | 743.0 | 5.1 | 587.5 | 137.2 | 724.0 | 4.3 | 553.6 | 153.6 | 707.0 | 3.6 |
| 4.0  | 668.4 | 122.9 | 791.0 | 5.4 | 633.7 | 137.9 | 771.0 | 4.6 | 598.1 | 154.1 | 752.0 | 3.9 |

**YCWS0240SC**

|      |       |       |       |     |       |       |       |     |       |       |       |     |
|------|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|
| -8.0 | 395.3 | 130.6 | 525.0 | 3.0 | 363.9 | 148.8 | 512.0 | 2.5 | 329.5 | 171.4 | 501.0 | 1.9 |
| -6.0 | 436.1 | 130.6 | 566.0 | 3.3 | 408.9 | 147.8 | 556.0 | 2.8 | 381.1 | 168.4 | 549.0 | 2.3 |
| -4.0 | 482.0 | 131.1 | 613.0 | 3.7 | 453.6 | 147.8 | 601.0 | 3.1 | 424.1 | 167.3 | 591.0 | 2.5 |
| -2.0 | 535.8 | 131.9 | 667.0 | 4.1 | 504.9 | 148.1 | 653.0 | 3.4 | 473.4 | 166.9 | 640.0 | 2.8 |
| 0.0  | 598.6 | 132.7 | 731.0 | 4.5 | 565.4 | 148.8 | 714.0 | 3.8 | 531.4 | 167.0 | 698.0 | 3.2 |
| 2.0  | 668.8 | 133.8 | 802.0 | 5.0 | 633.4 | 150.0 | 783.0 | 4.2 | 597.0 | 167.9 | 764.0 | 3.6 |
| 4.0  | 719.2 | 134.4 | 853.0 | 5.4 | 681.9 | 150.8 | 832.0 | 4.5 | 644.5 | 168.5 | 813.0 | 3.8 |

**NOTES:**

1. KW<sub>o</sub> = Unit kW Cooling Capacity Output
2. KW<sub>i</sub> = Compressor kW Input
3. COP = Coefficient of Performance
4. LCWT= Leaving Chilled Water Temperature
5. Ratings based on 0.047 l/s cooler water per kW.
6. For ratings other than 30% glycol, refer to the design 03 dxchill program.

# Ratings- Brine (30 % Propylene Glycol) (R-22 English)

| LCWT<br>(°F) | LEAVING CONDENSER WATER TEMPERATURE (°F) |      |    |     |      |      |    |     |       |      |    |     |
|--------------|--|------|----|-----|------|------|----|-----|-------|------|----|-----|
|              | 85.0                                     |      |    |     | 95.0 |      |    |     | 105.0 |      |    |     |
|              |  | TONS | KW | MBH | EER  | TONS | KW | MBH | EER   | TONS | KW | MBH |

## YCWS0100SC

|      |      |      |        |      |      |      |        |      |      |      |        |      |
|------|------|------|--------|------|------|------|--------|------|------|------|--------|------|
| 16.0 | 45.4 | 61.6 | 755.0  | 8.9  | 42.0 | 72.1 | 749.0  | 7.0  | 38.4 | 85.8 | 754.0  | 5.4  |
| 20.0 | 50.6 | 60.9 | 815.0  | 10.0 | 47.0 | 70.5 | 804.0  | 8.0  | 43.3 | 82.8 | 802.0  | 6.3  |
| 24.0 | 56.6 | 61.2 | 888.0  | 11.1 | 52.7 | 70.1 | 872.0  | 9.0  | 48.8 | 81.4 | 863.0  | 7.2  |
| 28.0 | 63.6 | 61.6 | 973.0  | 12.4 | 59.4 | 70.1 | 952.0  | 10.2 | 55.1 | 80.6 | 936.0  | 8.2  |
| 32.0 | 72.0 | 62.1 | 1075.0 | 13.9 | 67.4 | 70.3 | 1049.0 | 11.5 | 62.8 | 80.2 | 1026.0 | 9.4  |
| 36.0 | 81.3 | 62.8 | 1189.0 | 15.5 | 76.3 | 70.9 | 1157.0 | 12.9 | 71.2 | 80.4 | 1129.0 | 10.6 |
| 40.0 | 88.3 | 63.2 | 1275.0 | 16.8 | 83.0 | 71.4 | 1240.0 | 14.0 | 77.7 | 80.6 | 1207.0 | 11.6 |

## YCWS0120SC

|      |       |      |        |      |       |      |        |      |      |       |        |      |
|------|-------|------|--------|------|-------|------|--------|------|------|-------|--------|------|
| 16.0 | 55.1  | 73.7 | 912.0  | 9.0  | 51.0  | 86.1 | 906.0  | 7.1  | 46.9 | 102.0 | 910.0  | 5.5  |
| 20.0 | 61.3  | 72.9 | 984.0  | 10.1 | 57.0  | 84.3 | 972.0  | 8.1  | 52.6 | 98.8  | 968.0  | 6.4  |
| 24.0 | 68.5  | 73.2 | 1071.0 | 11.2 | 63.9  | 83.9 | 1053.0 | 9.1  | 59.2 | 97.3  | 1042.0 | 7.3  |
| 28.0 | 76.8  | 73.7 | 1173.0 | 12.5 | 71.9  | 83.9 | 1149.0 | 10.3 | 66.9 | 96.4  | 1131.0 | 8.3  |
| 32.0 | 86.8  | 74.2 | 1295.0 | 14.0 | 81.5  | 84.2 | 1265.0 | 11.6 | 76.0 | 96.0  | 1239.0 | 9.5  |
| 36.0 | 97.9  | 75.1 | 1431.0 | 15.7 | 92.1  | 84.9 | 1395.0 | 13.0 | 86.1 | 96.3  | 1362.0 | 10.7 |
| 40.0 | 106.3 | 75.6 | 1533.0 | 16.9 | 100.1 | 85.5 | 1493.0 | 14.1 | 93.9 | 96.6  | 1456.0 | 11.7 |

## YCWS0140SC

|      |       |      |        |      |       |       |        |      |       |       |        |      |
|------|-------|------|--------|------|-------|-------|--------|------|-------|-------|--------|------|
| 16.0 | 65.4  | 86.0 | 1078.0 | 9.1  | 60.7  | 100.4 | 1070.0 | 7.2  | 55.8  | 118.7 | 1074.0 | 5.6  |
| 20.0 | 72.8  | 85.1 | 1163.0 | 10.3 | 67.7  | 98.5  | 1149.0 | 8.3  | 62.6  | 115.1 | 1144.0 | 6.5  |
| 24.0 | 81.2  | 85.4 | 1265.0 | 11.4 | 75.8  | 98.0  | 1244.0 | 9.3  | 70.4  | 113.5 | 1231.0 | 7.4  |
| 28.0 | 91.1  | 85.9 | 1386.0 | 12.7 | 85.3  | 98.0  | 1357.0 | 10.4 | 79.4  | 112.6 | 1336.0 | 8.5  |
| 32.0 | 102.8 | 86.5 | 1529.0 | 14.3 | 96.6  | 98.3  | 1494.0 | 11.8 | 90.1  | 112.2 | 1464.0 | 9.6  |
| 36.0 | 115.8 | 87.5 | 1688.0 | 15.9 | 109.0 | 99.1  | 1646.0 | 13.2 | 102.0 | 112.5 | 1608.0 | 10.9 |
| 40.0 | 125.7 | 88.0 | 1808.0 | 17.1 | 118.5 | 99.7  | 1762.0 | 14.3 | 111.1 | 112.8 | 1718.0 | 11.8 |

## YCWS0180SC

|      |       |      |        |      |       |       |        |      |       |       |        |      |
|------|-------|------|--------|------|-------|-------|--------|------|-------|-------|--------|------|
| 16.0 | 80.5  | 96.1 | 1294.0 | 10.1 | 74.7  | 111.5 | 1276.0 | 8.0  | 69.1  | 130.5 | 1274.0 | 6.4  |
| 20.0 | 89.6  | 95.3 | 1400.0 | 11.3 | 83.5  | 109.6 | 1376.0 | 9.1  | 77.2  | 127.3 | 1360.0 | 7.3  |
| 24.0 | 100.1 | 95.7 | 1528.0 | 12.6 | 93.5  | 109.4 | 1495.0 | 10.3 | 86.8  | 126.0 | 1471.0 | 8.3  |
| 28.0 | 112.4 | 96.2 | 1677.0 | 14.0 | 105.3 | 109.6 | 1637.0 | 11.5 | 98.0  | 125.3 | 1604.0 | 9.4  |
| 32.0 | 127.0 | 96.8 | 1855.0 | 15.7 | 119.3 | 110.0 | 1807.0 | 13.0 | 111.4 | 125.2 | 1764.0 | 10.7 |
| 36.0 | 143.4 | 97.6 | 2053.0 | 17.6 | 134.9 | 110.9 | 1998.0 | 14.6 | 126.3 | 125.7 | 1945.0 | 12.1 |
| 40.0 | 155.6 | 97.9 | 2201.0 | 19.1 | 146.7 | 111.5 | 2141.0 | 15.8 | 137.6 | 126.2 | 2082.0 | 13.1 |

### NOTES:

1. Tons = Unit Cooling Capacity Output
2. kW = Compressor Input Power
3. MBH = Condenser heat rejection
4. EER = Chiller Energy Efficiency Ratio (Capacity [Tons x 12] ÷ kW)
5. LCWT = Leaving Chilled Water Temperature
6. Ratings based on 2.4 GPM cooler water per ton
7. For ratings other than 30% glycol, refer to the design 03 dxchill program.

| LCWT<br>(°F) | LEAVING CONDENSER WATER TEMPERATURE (°F) |      |    |     |      |      |    |     |       |      |    |     |
|--------------|--|------|----|-----|------|------|----|-----|-------|------|----|-----|
|              | 85.0                                     |      |    |     | 95.0 |      |    |     | 105.0 |      |    |     |
|              |  | TONS | KW | MBH | EER  | TONS | KW | MBH | EER   | TONS | KW | MBH |

**YCWS0200SC**

|             |       |       |        |      |       |       |        |      |       |       |        |      |
|-------------|-------|-------|--------|------|-------|-------|--------|------|-------|-------|--------|------|
| <b>16.0</b> | 92.1  | 108.0 | 1474.0 | 10.2 | 85.5  | 125.1 | 1453.0 | 8.2  | 78.7  | 146.0 | 1443.0 | 6.5  |
| <b>20.0</b> | 102.5 | 107.2 | 1596.0 | 11.5 | 95.5  | 123.2 | 1566.0 | 9.3  | 88.3  | 142.7 | 1547.0 | 7.4  |
| <b>24.0</b> | 114.5 | 107.6 | 1740.0 | 12.8 | 107.0 | 123.0 | 1704.0 | 10.4 | 99.3  | 141.4 | 1674.0 | 8.4  |
| <b>28.0</b> | 128.4 | 108.2 | 1910.0 | 14.2 | 120.4 | 123.2 | 1865.0 | 11.7 | 112.1 | 140.8 | 1825.0 | 9.6  |
| <b>32.0</b> | 145.1 | 108.8 | 2113.0 | 16.0 | 136.4 | 123.7 | 2058.0 | 13.2 | 127.4 | 140.8 | 2008.0 | 10.9 |
| <b>36.0</b> | 163.7 | 109.7 | 2338.0 | 17.9 | 154.1 | 124.7 | 2275.0 | 14.8 | 144.3 | 141.4 | 2214.0 | 12.2 |
| <b>40.0</b> | 177.5 | 110.1 | 2506.0 | 19.4 | 167.5 | 125.4 | 2438.0 | 16.0 | 157.2 | 141.9 | 2371.0 | 13.3 |

**YCWS0220SC**

|             |       |       |        |      |       |       |        |      |       |       |        |      |
|-------------|-------|-------|--------|------|-------|-------|--------|------|-------|-------|--------|------|
| <b>16.0</b> | 100.3 | 118.7 | 1609.0 | 10.1 | 93.1  | 137.4 | 1586.0 | 8.1  | 85.6  | 160.5 | 1575.0 | 6.4  |
| <b>20.0</b> | 111.8 | 117.8 | 1743.0 | 11.4 | 104.0 | 135.4 | 1710.0 | 9.2  | 96.1  | 156.8 | 1688.0 | 7.4  |
| <b>24.0</b> | 124.7 | 118.3 | 1900.0 | 12.7 | 116.5 | 135.2 | 1860.0 | 10.3 | 108.1 | 155.4 | 1828.0 | 8.3  |
| <b>28.0</b> | 140.0 | 119.0 | 2086.0 | 14.1 | 131.2 | 135.5 | 2036.0 | 11.6 | 122.1 | 154.8 | 1993.0 | 9.5  |
| <b>32.0</b> | 158.2 | 119.8 | 2307.0 | 15.9 | 148.6 | 136.1 | 2248.0 | 13.1 | 138.8 | 154.8 | 2193.0 | 10.8 |
| <b>36.0</b> | 178.4 | 120.8 | 2553.0 | 17.7 | 168.0 | 137.3 | 2484.0 | 14.7 | 157.3 | 155.5 | 2418.0 | 12.1 |
| <b>40.0</b> | 193.7 | 121.3 | 2738.0 | 19.2 | 182.5 | 138.0 | 2661.0 | 15.9 | 171.3 | 156.1 | 2589.0 | 13.2 |

**YCWS0240SC**

|             |       |       |        |      |       |       |        |      |       |       |        |      |
|-------------|-------|-------|--------|------|-------|-------|--------|------|-------|-------|--------|------|
| <b>16.0</b> | 108.3 | 129.7 | 1742.0 | 10.0 | 100.4 | 150.2 | 1717.0 | 8.0  | 92.3  | 175.6 | 1707.0 | 6.3  |
| <b>20.0</b> | 120.5 | 128.7 | 1885.0 | 11.2 | 112.2 | 148.0 | 1851.0 | 9.1  | 103.7 | 171.5 | 1829.0 | 7.3  |
| <b>24.0</b> | 134.6 | 129.3 | 2056.0 | 12.5 | 125.7 | 147.8 | 2012.0 | 10.2 | 116.6 | 169.9 | 1979.0 | 8.2  |
| <b>28.0</b> | 151.0 | 130.1 | 2256.0 | 13.9 | 141.4 | 148.1 | 2203.0 | 11.5 | 131.6 | 169.2 | 2157.0 | 9.3  |
| <b>32.0</b> | 170.6 | 131.0 | 2494.0 | 15.6 | 160.3 | 148.8 | 2431.0 | 12.9 | 149.6 | 169.2 | 2372.0 | 10.6 |
| <b>36.0</b> | 192.2 | 132.1 | 2758.0 | 17.5 | 181.1 | 150.0 | 2685.0 | 14.5 | 169.5 | 170.0 | 2614.0 | 12.0 |
| <b>40.0</b> | 208.8 | 132.7 | 2959.0 | 18.9 | 196.9 | 150.9 | 2878.0 | 15.7 | 184.5 | 170.7 | 2797.0 | 13.0 |

**NOTES:**

1. Tons = Unit Cooling Capacity Output
2. kW = Compressor Input Power
3. MBH = Condenser heat rejection
4. EER = Chiller Energy Efficiency Ratio (Capacity [Tons x 12] ÷ kW)
5. LCWT = Leaving Chilled Water Temperature
6. Ratings based on 2.4 GPM cooler water per ton
7. For ratings other than 30% glycol, refer to the design 03 dxchill program.

# Ratings- Brine (30 % Propylene Glycol) (R-22 SI)

| LCWT<br>(°C) | LEAVING CONDENSER WATER TEMPERATURE (°C) |                 |    |     |                 |                 |    |     |                 |                 |    |     |
|--------------|--|-----------------|----|-----|-----------------|-----------------|----|-----|-----------------|-----------------|----|-----|
|              | 30.0                                     |                 |    |     | 35.0            |                 |    |     | 40.0            |                 |    |     |
|              | KW <sub>o</sub>                          | KW <sub>i</sub> | KW | COP | KW <sub>o</sub> | KW <sub>i</sub> | KW | COP | KW <sub>o</sub> | KW <sub>i</sub> | KW | COP |

## YCWS0100SC

|      |       |      |       |     |       |      |       |     |       |      |       |     |
|------|-------|------|-------|-----|-------|------|-------|-----|-------|------|-------|-----|
| -8.0 | 165.5 | 61.9 | 227.0 | 2.7 | 154.4 | 71.1 | 225.0 | 2.2 | 143.1 | 82.7 | 225.0 | 1.7 |
| -6.0 | 182.8 | 61.8 | 244.0 | 3.0 | 171.0 | 70.3 | 241.0 | 2.4 | 159.1 | 81.0 | 240.0 | 2.0 |
| -4.0 | 202.3 | 62.0 | 264.0 | 3.3 | 189.8 | 70.1 | 259.0 | 2.7 | 177.2 | 80.0 | 257.0 | 2.2 |
| -2.0 | 224.9 | 62.4 | 287.0 | 3.6 | 211.6 | 70.1 | 281.0 | 3.0 | 197.9 | 79.4 | 277.0 | 2.5 |
| 0.0  | 251.5 | 62.9 | 314.0 | 4.0 | 237.1 | 70.3 | 307.0 | 3.4 | 222.3 | 79.1 | 301.0 | 2.8 |
| 2.0  | 281.6 | 63.5 | 345.0 | 4.4 | 266.0 | 70.9 | 336.0 | 3.8 | 250.1 | 79.3 | 329.0 | 3.2 |
| 4.0  | 303.5 | 63.9 | 367.0 | 4.8 | 287.2 | 71.3 | 358.0 | 4.0 | 270.5 | 79.6 | 350.0 | 3.4 |

## YCWS0120SC

|      |       |      |       |     |       |      |       |     |       |      |       |     |
|------|-------|------|-------|-----|-------|------|-------|-----|-------|------|-------|-----|
| -8.0 | 200.6 | 74.1 | 274.0 | 2.7 | 187.5 | 85.0 | 272.0 | 2.2 | 174.1 | 98.5 | 272.0 | 1.8 |
| -6.0 | 221.3 | 74.0 | 295.0 | 3.0 | 207.4 | 84.2 | 291.0 | 2.5 | 193.3 | 96.7 | 290.0 | 2.0 |
| -4.0 | 244.8 | 74.2 | 319.0 | 3.3 | 230.0 | 83.9 | 313.0 | 2.7 | 214.9 | 95.6 | 310.0 | 2.3 |
| -2.0 | 271.7 | 74.7 | 346.0 | 3.6 | 256.0 | 83.9 | 340.0 | 3.1 | 239.9 | 95.0 | 334.0 | 2.5 |
| 0.0  | 303.5 | 75.2 | 378.0 | 4.0 | 286.5 | 84.2 | 370.0 | 3.4 | 269.1 | 94.8 | 363.0 | 2.8 |
| 2.0  | 339.5 | 75.9 | 415.0 | 4.5 | 321.1 | 84.9 | 406.0 | 3.8 | 302.3 | 95.1 | 397.0 | 3.2 |
| 4.0  | 365.6 | 76.4 | 442.0 | 4.8 | 346.4 | 85.4 | 431.0 | 4.1 | 326.7 | 95.3 | 422.0 | 3.4 |

## YCWS0140SC

|      |       |      |       |     |       |      |       |     |       |       |       |     |
|------|-------|------|-------|-----|-------|------|-------|-----|-------|-------|-------|-----|
| -8.0 | 238.2 | 86.5 | 324.0 | 2.8 | 222.9 | 99.2 | 322.0 | 2.3 | 207.2 | 114.7 | 322.0 | 1.8 |
| -6.0 | 262.5 | 86.4 | 348.0 | 3.0 | 246.3 | 98.3 | 344.0 | 2.5 | 229.8 | 112.8 | 342.0 | 2.0 |
| -4.0 | 290.1 | 86.6 | 376.0 | 3.4 | 272.9 | 97.9 | 370.0 | 2.8 | 255.3 | 111.6 | 366.0 | 2.3 |
| -2.0 | 322.0 | 87.1 | 409.0 | 3.7 | 303.5 | 98.0 | 401.0 | 3.1 | 284.7 | 110.9 | 395.0 | 2.6 |
| 0.0  | 359.3 | 87.6 | 447.0 | 4.1 | 339.6 | 98.3 | 437.0 | 3.5 | 319.2 | 110.7 | 429.0 | 2.9 |
| 2.0  | 401.7 | 88.5 | 490.0 | 4.5 | 380.1 | 99.0 | 479.0 | 3.8 | 358.2 | 111.0 | 469.0 | 3.2 |
| 4.0  | 432.3 | 89.0 | 521.0 | 4.9 | 409.8 | 99.6 | 509.0 | 4.1 | 386.8 | 111.3 | 498.0 | 3.5 |

## YCWS0180SC

|      |       |      |       |     |       |       |       |     |       |       |       |     |
|------|-------|------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|
| -8.0 | 293.4 | 96.7 | 390.0 | 3.0 | 274.5 | 110.2 | 384.0 | 2.5 | 255.8 | 126.6 | 382.0 | 2.0 |
| -6.0 | 323.5 | 96.7 | 420.0 | 3.4 | 303.5 | 109.5 | 413.0 | 2.8 | 279.0 | 125.2 | 404.0 | 2.2 |
| -4.0 | 357.8 | 97.0 | 454.0 | 3.7 | 336.6 | 109.4 | 446.0 | 3.1 | 315.0 | 124.0 | 439.0 | 2.5 |
| -2.0 | 399.0 | 97.6 | 496.0 | 4.1 | 374.8 | 109.6 | 484.0 | 3.4 | 351.6 | 123.6 | 475.0 | 2.8 |
| 0.0  | 444.1 | 98.1 | 542.0 | 4.5 | 419.7 | 110.0 | 529.0 | 3.8 | 394.7 | 123.6 | 518.0 | 3.2 |
| 2.0  | 497.0 | 98.8 | 595.0 | 5.0 | 470.6 | 110.8 | 581.0 | 4.3 | 443.4 | 124.1 | 567.0 | 3.6 |
| 4.0  | 535.2 | 99.2 | 634.0 | 5.4 | 507.5 | 111.4 | 618.0 | 4.6 | 479.1 | 124.5 | 603.0 | 3.9 |

### NOTES:

1. KW<sub>o</sub> = Unit kW Cooling Capacity Output
2. KW<sub>i</sub> = Compressor kW Input
3. COP = Coefficient of Performance
4. LCWT= Leaving Chilled Water Temperature
5. Ratings based on 0.047 l/s cooler water per kW.
6. For ratings other than 30% glycol, refer to the design 03 dxchill program.



| LCWT<br>(°C) | LEAVING CONDENSER WATER TEMPERATURE (°C) |                 |    |     |                 |                 |    |     |                 |                 |    |     |
|--------------|--|-----------------|----|-----|-----------------|-----------------|----|-----|-----------------|-----------------|----|-----|
|              | 30.0                                     |                 |    |     | 35.0            |                 |    |     | 40.0            |                 |    |     |
|              | KW <sub>o</sub>                          | KW <sub>i</sub> | KW | COP | KW <sub>o</sub> | KW <sub>i</sub> | KW | COP | KW <sub>o</sub> | KW <sub>i</sub> | KW | COP |

**YCWS0200SC**

|             |       |       |       |     |       |       |       |     |       |       |       |     |
|-------------|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|
| <b>-8.0</b> | 335.6 | 108.7 | 444.0 | 3.1 | 314.2 | 123.7 | 438.0 | 2.5 | 292.3 | 141.8 | 434.0 | 2.1 |
| <b>-6.0</b> | 370.0 | 108.7 | 478.0 | 3.4 | 347.4 | 123.1 | 470.0 | 2.8 | 324.2 | 140.1 | 464.0 | 2.3 |
| <b>-4.0</b> | 409.1 | 109.1 | 518.0 | 3.8 | 385.2 | 123.0 | 508.0 | 3.1 | 360.4 | 139.3 | 499.0 | 2.6 |
| <b>-2.0</b> | 454.2 | 109.7 | 563.0 | 4.1 | 428.4 | 123.3 | 551.0 | 3.5 | 402.0 | 138.9 | 541.0 | 2.9 |
| <b>0.0</b>  | 507.3 | 110.3 | 617.0 | 4.6 | 479.5 | 123.7 | 603.0 | 3.9 | 451.1 | 138.9 | 590.0 | 3.3 |
| <b>2.0</b>  | 567.6 | 111.1 | 678.0 | 5.1 | 537.5 | 124.7 | 662.0 | 4.3 | 506.6 | 139.6 | 646.0 | 3.6 |
| <b>4.0</b>  | 610.7 | 111.5 | 722.0 | 5.5 | 579.5 | 125.2 | 704.0 | 4.6 | 547.3 | 140.1 | 687.0 | 3.9 |

**YCWS0220SC**

|             |       |       |       |     |       |       |       |     |       |       |       |     |
|-------------|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|
| <b>-8.0</b> | 365.6 | 119.5 | 485.0 | 3.1 | 342.1 | 136.0 | 478.0 | 2.5 | 318.1 | 155.8 | 474.0 | 2.0 |
| <b>-6.0</b> | 403.8 | 119.5 | 523.0 | 3.4 | 378.6 | 135.2 | 513.0 | 2.8 | 353.7 | 154.0 | 507.0 | 2.3 |
| <b>-4.0</b> | 445.8 | 120.0 | 565.0 | 3.7 | 419.8 | 135.2 | 555.0 | 3.1 | 392.4 | 153.1 | 545.0 | 2.6 |
| <b>-2.0</b> | 495.1 | 120.6 | 615.0 | 4.1 | 466.9 | 135.5 | 602.0 | 3.4 | 438.0 | 152.7 | 590.0 | 2.9 |
| <b>0.0</b>  | 553.1 | 121.3 | 674.0 | 4.6 | 522.6 | 136.1 | 658.0 | 3.8 | 491.4 | 152.8 | 644.0 | 3.2 |
| <b>2.0</b>  | 618.8 | 122.3 | 741.0 | 5.1 | 585.8 | 137.2 | 723.0 | 4.3 | 552.0 | 153.6 | 705.0 | 3.6 |
| <b>4.0</b>  | 666.3 | 122.8 | 789.0 | 5.4 | 631.4 | 137.9 | 769.0 | 4.6 | 596.3 | 154.1 | 750.0 | 3.9 |

**YCWS0240SC**

|             |       |       |       |     |       |       |       |     |       |       |       |     |
|-------------|-------|-------|-------|-----|-------|-------|-------|-----|-------|-------|-------|-----|
| <b>-8.0</b> | 394.4 | 130.6 | 525.0 | 3.0 | 368.7 | 148.6 | 517.0 | 2.5 | 343.0 | 170.4 | 513.0 | 2.0 |
| <b>-6.0</b> | 434.9 | 130.6 | 565.0 | 3.3 | 408.0 | 147.8 | 555.0 | 2.8 | 380.5 | 168.4 | 549.0 | 2.3 |
| <b>-4.0</b> | 480.9 | 131.1 | 612.0 | 3.7 | 452.3 | 147.8 | 600.0 | 3.1 | 423.1 | 167.4 | 590.0 | 2.5 |
| <b>-2.0</b> | 534.1 | 131.8 | 666.0 | 4.1 | 503.5 | 148.1 | 651.0 | 3.4 | 472.2 | 166.9 | 639.0 | 2.8 |
| <b>0.0</b>  | 596.4 | 132.7 | 729.0 | 4.5 | 563.5 | 148.8 | 712.0 | 3.8 | 529.8 | 167.0 | 696.0 | 3.2 |
| <b>2.0</b>  | 666.7 | 133.8 | 800.0 | 5.0 | 631.6 | 150.0 | 781.0 | 4.2 | 595.0 | 167.8 | 762.0 | 3.5 |
| <b>4.0</b>  | 718.5 | 134.4 | 852.0 | 5.4 | 681.1 | 150.7 | 831.0 | 4.5 | 642.4 | 168.4 | 810.0 | 3.8 |

**NOTES:**

1. KW<sub>o</sub> = Unit kW Cooling Capacity Output
2. KW<sub>i</sub> = Compressor kW Input
3. COP = Coefficient of Performance
4. LCWT= Leaving Chilled Water Temperature
5. Ratings based on 0.047 l/s cooler water per kW.
6. For ratings other than 30% glycol, refer to the design 03 dxchill program.

# Part Load Ratings

## English

| <b>YCWS0100SC</b> |      |      |      |
|-------------------|------|------|------|
| Load              | Tons | kW   | EER  |
| 1.0               | 91.3 | 72.0 | 15.2 |
| 0.8               | 68.5 | 51.5 | 16.0 |
| 0.5               | 45.7 | 24.5 | 22.3 |
| 0.3               | 22.8 | 17.4 | 15.8 |
| <b>IPLV: 18.8</b> |      |      |      |

| <b>YCWS0200SC</b> |       |       |      |
|-------------------|-------|-------|------|
| Load              | Tons  | kW    | EER  |
| 1.0               | 183.2 | 126.0 | 17.5 |
| 0.8               | 137.4 | 89.5  | 18.4 |
| 0.5               | 91.6  | 42.1  | 26.1 |
| 0.3               | 45.8  | 30.4  | 18.1 |
| <b>IPLV: 21.8</b> |       |       |      |

| <b>YCWS0120SC</b> |       |      |      |
|-------------------|-------|------|------|
| Load              | Tons  | kW   | EER  |
| 1.0               | 110.3 | 86.2 | 15.4 |
| 0.8               | 82.7  | 61.4 | 16.2 |
| 0.5               | 55.1  | 31.3 | 21.2 |
| 0.3               | 27.6  | 23.4 | 14.1 |
| <b>IPLV: 18.2</b> |       |      |      |

| <b>YCWS0220SC</b> |       |       |      |
|-------------------|-------|-------|------|
| Load              | Tons  | kW    | EER  |
| 1.0               | 199.6 | 138.8 | 17.3 |
| 0.8               | 149.7 | 98.6  | 18.2 |
| 0.5               | 99.8  | 48.9  | 24.5 |
| 0.3               | 49.9  | 36.1  | 16.6 |
| <b>IPLV: 20.8</b> |       |       |      |

| <b>YCWS0140SC</b> |       |       |      |
|-------------------|-------|-------|------|
| Load              | Tons  | kW    | EER  |
| 1.0               | 130.5 | 100.5 | 15.6 |
| 0.8               | 97.9  | 71.4  | 16.5 |
| 0.5               | 65.3  | 34.3  | 22.8 |
| 0.3               | 32.6  | 24.5  | 16.0 |
| <b>IPLV: 19.3</b> |       |       |      |

| <b>YCWS0240SC</b> |       |       |      |
|-------------------|-------|-------|------|
| Load              | Tons  | kW    | EER  |
| 1.0               | 215.4 | 151.8 | 17.0 |
| 0.8               | 161.5 | 107.8 | 18.0 |
| 0.5               | 107.7 | 51.1  | 25.3 |
| 0.3               | 53.8  | 37.0  | 17.5 |
| <b>IPLV: 21.2</b> |       |       |      |

| <b>YCWS0180SC</b> |       |       |      |
|-------------------|-------|-------|------|
| Load              | Tons  | kW    | EER  |
| 1.0               | 160.3 | 112.0 | 17.2 |
| 0.8               | 120.2 | 79.4  | 18.2 |
| 0.5               | 80.2  | 39.2  | 24.6 |
| 0.3               | 40.1  | 28.7  | 16.8 |
| <b>IPLV: 20.9</b> |       |       |      |

Rated in accordance with ARI Standard 550/590

## SI

| <b>YCWS0100SC</b> |       |      |     |
|-------------------|-------|------|-----|
| Load              | kWo   | kWi  | COP |
| 100%              | 321.1 | 72.0 | 4.5 |
| 75%               | 240.8 | 51.5 | 4.7 |
| 50%               | 160.6 | 24.5 | 6.5 |
| 25%               | 80.3  | 17.4 | 4.6 |
| <b>5.51</b>       |       |      |     |

| <b>YCWS0200SC</b> |       |       |     |
|-------------------|-------|-------|-----|
| Load              | kWo   | kWi   | COP |
| 100%              | 644.4 | 126.0 | 5.1 |
| 75%               | 483.3 | 89.5  | 5.4 |
| 50%               | 322.2 | 42.1  | 7.7 |
| 25%               | 161.1 | 30.4  | 5.3 |
| <b>6.40</b>       |       |       |     |

| <b>YCWS0120SC</b> |       |      |     |
|-------------------|-------|------|-----|
| Load              | kWo   | kWi  | COP |
| 100%              | 387.9 | 86.2 | 4.5 |
| 75%               | 290.9 | 61.4 | 4.7 |
| 50%               | 193.9 | 31.3 | 6.2 |
| 25%               | 97.0  | 23.4 | 4.1 |
| <b>5.32</b>       |       |      |     |

| <b>YCWS0220SC</b> |       |       |     |
|-------------------|-------|-------|-----|
| Load              | kWo   | kWi   | COP |
| 100%              | 702.2 | 138.8 | 5.1 |
| 75%               | 526.6 | 98.6  | 5.3 |
| 50%               | 351.1 | 48.9  | 7.2 |
| 25%               | 175.5 | 36.1  | 4.9 |
| <b>6.11</b>       |       |       |     |

| <b>YCWS0140SC</b> |       |       |     |
|-------------------|-------|-------|-----|
| Load              | kWo   | kWi   | COP |
| 100%              | 459.0 | 100.5 | 4.6 |
| 75%               | 344.2 | 71.4  | 4.8 |
| 50%               | 229.5 | 34.3  | 6.7 |
| 25%               | 114.7 | 24.5  | 4.7 |
| <b>5.65</b>       |       |       |     |

| <b>YCWS0240SC</b> |       |       |     |
|-------------------|-------|-------|-----|
| Load              | kWo   | kWi   | COP |
| 100%              | 757.5 | 151.8 | 5.0 |
| 75%               | 568.1 | 107.8 | 5.3 |
| 50%               | 378.7 | 51.1  | 7.4 |
| 25%               | 189.4 | 37.0  | 5.1 |
| <b>6.21</b>       |       |       |     |

| <b>YCWS0180SC</b> |       |       |     |
|-------------------|-------|-------|-----|
| Load              | kWo   | kWi   | COP |
| 100%              | 563.8 | 112.0 | 5.0 |
| 75%               | 422.9 | 79.4  | 5.3 |
| 50%               | 281.9 | 39.2  | 7.2 |
| 25%               | 141.0 | 28.7  | 4.9 |
| <b>6.11</b>       |       |       |     |

Rated in accordance with ARI Standard 550/590

# Physical Data

## English

| MODEL YCWS                                   | 0100SC      | 0120SC      | 0140SC       | 0180SC       | 0200SC      | 0220SC      | 0240SC       |
|--|-------------|-------------|--------------|--------------|-------------|-------------|--------------|
| <b>General Unit Data</b>                     |             |             |              |              |             |             |              |
| Nominal Unit Capacity (Tons)                 | 91          | 110         | 131          | 160          | 183         | 200         | 216          |
| Number of Independent Refrigerant Circuits   | 2           | 2           | 2            | 2            | 2           | 2           | 2            |
| Refrigerant Charge, R22, Ckt 1/Ckt. 2 (lbs.) | 100/100     | 100/120     | 120/120      | 210/220      | 220/220     | 220/240     | 240/240      |
| Oil Charge, Ckt. 1/Ckt. 2, (gal.)            | 2/2         | 2/3         | 3/3          | 3/3          | 3/3         | 3/3         | 3/3          |
| Shipping Weight (lbs.)                       | 7323        | 7632        | 7972         | 11722        | 11840       | 11897       | 12006        |
| Operating Weight (lbs.)                      | 8160        | 8469        | 8809         | 13256        | 13374       | 13393       | 13502        |
| <b>Compressors, Semi-Hermetic Twin Screw</b> |             |             |              |              |             |             |              |
| Quantity per Chiller                         | 2           | 2           | 2            | 2            | 2           | 2           | 2            |
| Nominal Size, Ckt. 1/ Ckt. 2                 | F/F         | F/C         | C/C          | C/A          | A/A         | A/B         | B/B          |
| <b>Condenser - Code</b>                      |             |             |              |              |             |             |              |
|  | S           | S           | S            | U            | U           | U           | U            |
| Water Volume (gal.)                          | 26          | 26          | 26           | 61           | 61          | 61          | 61           |
| Maximum Water Side Pressure (psig)           | 150         | 150         | 150          | 150          | 150         | 150         | 150          |
| Maximum Refrigerant Side Pressure (psig)     | 330         | 330         | 330          | 330          | 330         | 330         | 330          |
| Dia. X Length, inches                        | 16 x 108    | 16 x 108    | 16 x 108     | 18 x 156     | 18 x 156    | 18 x 156    | 18 x 156     |
| Water Nozzle Connection Size, (inches)       | 5           | 5           | 5            | 6            | 6           | 6           | 6            |
| <b>Evaporator, Direct Expansion - Code</b>   |             |             |              |              |             |             |              |
|  | O           | O           | O            | P            | P           | Q           | Q            |
| Water Volume (gals.)                         | 64          | 64          | 64           | 94           | 94          | 107         | 107          |
| Maximum Water Side Pressure (psig)           | 150         | 150         | 150          | 150          | 150         | 150         | 150          |
| Maximum Refrigerant Side Pressure (psig)     | 300         | 300         | 300          | 300          | 300         | 300         | 300          |
| Dia. X Length, inches                        | 19-1/2x 108 | 19-1/2x 108 | 19-1/2 x 108 | 21-1/4 x 156 | 21-1/4x 156 | 21-1/4x 156 | 21-1/4 x 156 |
| Water Nozzle Connection Size, (inches)       | 8           | 8           | 8            | 8            | 8           | 8           | 8            |

## SI

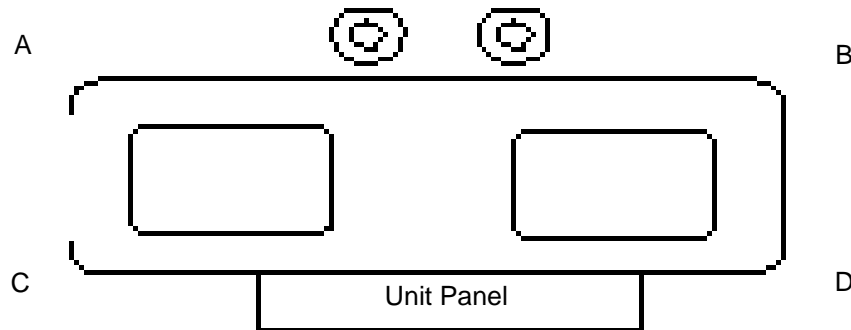
| MODEL YCWS                                   | 0100SC     | 0120SC     | 0140SC      | 0180SC      | 0200SC      | 0220SC      | 0240SC      |
|--|------------|------------|-------------|-------------|-------------|-------------|-------------|
| <b>General Unit Data</b>                     |            |            |             |             |             |             |             |
| Nominal Unit Capacity (kW)                   | 321        | 388        | 461         | 564         | 644         | 702         | 758         |
| Number of Independent Refrigerant Circuits   | 2          | 2          | 2           | 2           | 2           | 2           | 2           |
| Refrigerant Charge, R22, Ckt 1/Ckt. 2 (kgs.) | 46/46      | 46/55      | 55/55       | 95/100      | 100/100     | 100/109     | 109/109     |
| Oil Charge, Ckt. 1/Ckt. 2, (l)               | 7.6 / 7.6  | 7.6 / 11.4 | 11.4 / 11.4 | 11.4 / 11.4 | 11.4 / 11.4 | 11.4 / 11.4 | 11.4 / 11.4 |
| Shipping Weight (kg.)                        | 3322       | 3464       | 3616        | 5317        | 5370        | 5396        | 5446        |
| Operating Weight (kg.)                       | 3701       | 3841       | 3996        | 6013        | 6066        | 6075        | 6124        |
| <b>Compressors, Semi-Hermetic Twin Screw</b> |            |            |             |             |             |             |             |
| Quantity per Chiller                         | 2          | 2          | 2           | 2           | 2           | 2           | 2           |
| Nominal Size, Ckt. 1/ Ckt. 2                 | F/F        | F/C        | C/C         | C/A         | A/A         | A/B         | B/B         |
| <b>Condenser - Code</b>                      |            |            |             |             |             |             |             |
|  | S          | S          | S           | U           | U           | U           | U           |
| Water Volume (l)                             | 98         | 98         | 98          | 230         | 230         | 230         | 230         |
| Maximum Water Side Pressure (barg)           | 10.0       | 10.0       | 10.0        | 10.0        | 10.0        | 10.0        | 10.0        |
| Maximum Refrigerant Side Pressure (barg)     | 22.8       | 22.8       | 22.8        | 22.8        | 22.8        | 22.8        | 22.8        |
| Dia. X Length, mm                            | 406 x 2743 | 406 x 2743 | 406 x 2743  | 457 x 3963  | 457 x 3963  | 457 x 3963  | 457 x 3963  |
| Water Nozzle Connection Size, (inches)       | 5          | 5          | 5           | 6           | 6           | 6           | 6           |
| <b>Evaporator, Direct Expansion - Code</b>   |            |            |             |             |             |             |             |
|  | O          | O          | O           | P           | P           | Q           | Q           |
| Water Volume (l/s)                           | 242        | 242        | 242         | 357         | 357         | 406         | 406         |
| Maximum Water Side Pressure (barg)           | 10.0       | 10.0       | 10.0        | 10.0        | 10.0        | 10.0        | 10.0        |
| Maximum Refrigerant Side Pressure (barg)     | 22.7       | 22.7       | 22.7        | 22.7        | 22.7        | 22.7        | 22.7        |
| Dia. X Length, mm                            | 495 x 2743 | 495 x 2743 | 495 x 2743  | 540 x 3963  | 540 x 3963  | 540 x 3963  | 540 x 3963  |
| Water Nozzle Connection Size, (inches)       | 8          | 8          | 8           | 8           | 8           | 8           | 8           |

# Isolator Selection Data

## Weight Distribution by Model

| Model      | A    | B    | C    | D    | Oper. Weight (lbs) |
|------------|------|------|------|------|--------------------|
| YCWS0100SC | 1997 | 1997 | 2082 | 2082 | 8160               |
| YCWS0120SC | 2104 | 2104 | 2131 | 2131 | 8469               |
| YCWS0140SC | 2210 | 2210 | 2195 | 2195 | 8809               |
| YCWS0180SC | 3314 | 3314 | 3314 | 3314 | 13256              |
| YCWS0200SC | 3336 | 3336 | 3351 | 3351 | 13374              |

| Model      | A    | B    | C    | D    | Oper. Weight (kg) |
|------------|------|------|------|------|-------------------|
| YCWS0100SC | 906  | 906  | 945  | 945  | 3701              |
| YCWS0120SC | 954  | 954  | 967  | 967  | 3842              |
| YCWS0140SC | 1002 | 1002 | 995  | 995  | 3996              |
| YCWS0180SC | 1503 | 1503 | 1503 | 1503 | 6013              |
| YCWS0200SC | 1513 | 1513 | 1520 | 1520 | 6066              |
| YCWS0220SC | 1512 | 1512 | 1526 | 1526 | 6075              |
| YCWS0240SC | 1522 | 1522 | 1540 | 1540 | 6124              |



## Sismic Isolator AWMR-X- Selections

| Model      | A     | B     | C     | D     |
|------------|-------|-------|-------|-------|
| YCWS0100SC | 2-530 | 2-530 | 2-530 | 2-530 |
| YCWS0120SC | 2-530 | 2-530 | 2-530 | 2-530 |
| YCWS0140SC | 2-530 | 2-530 | 2-530 | 2-530 |
| YCWS0180SC | 2-552 | 2-552 | 2-552 | 2-552 |
| YCWS0200SC | 2-552 | 2-552 | 2-552 | 2-552 |
| YCWS0220SC | 2-552 | 2-552 | 2-552 | 2-552 |
| YCWS0240SC | 2-552 | 2-552 | 2-552 | 2-552 |

## 1" Isolator Selections - VMC Type CP-4- X

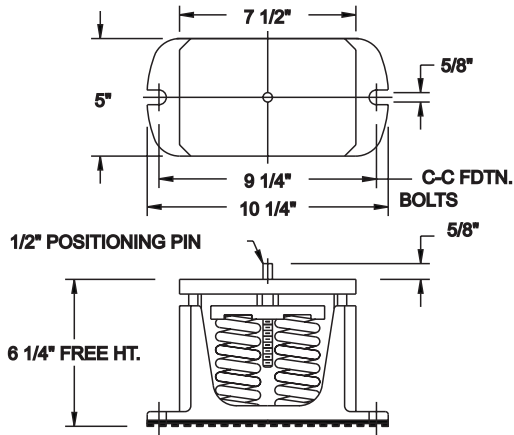
| Model      | A  | B  | C  | D  |
|------------|----|----|----|----|
| YCWS0100SC | 26 | 26 | 26 | 26 |
| YCWS0120SC | 26 | 26 | 26 | 26 |
| YCWS0140SC | 26 | 26 | 26 | 26 |
| YCWS0180SC | 31 | 31 | 31 | 31 |
| YCWS0200SC | 31 | 31 | 31 | 31 |
| YCWS0220SC | 31 | 31 | 31 | 31 |
| YCWS0240SC | 31 | 31 | 31 | 31 |

## Neoprene -VMC Type RD-4 Selections

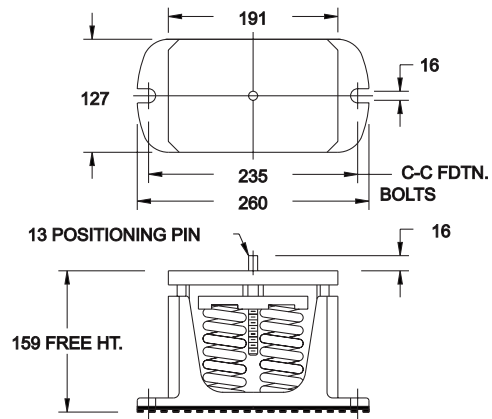
| Model      | A     | B     | C     | D     |
|------------|-------|-------|-------|-------|
| YCWS0100SC | Green | Green | Green | Green |
| YCWS0120SC | Green | Green | Green | Green |
| YCWS0140SC | Green | Green | Green | Green |
| YCWS0180SC | Gray  | Gray  | Gray  | Gray  |
| YCWS0200SC | Gray  | Gray  | Gray  | Gray  |
| YCWS0220SC | Gray  | Gray  | Gray  | Gray  |

# Isolator Details

## 1" ISOLATOR DETAILS



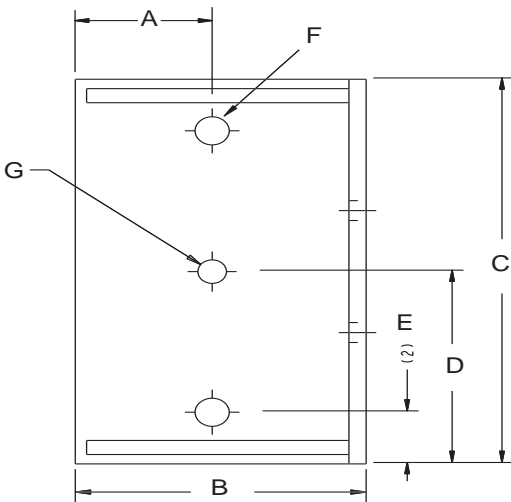
ENGLISH



SI

| TYPE & SIZE | MAX LOAD |        | DEFL. |      | SPRING |
|-------------|----------|--------|-------|------|--------|
|             | lbs.     | kg     | in.   | mm   | COLOR  |
| CP-4-26     | 2400     | 1088.6 | 1.17  | 29.7 | Purple |
| CP-4-31     | 4400     | 1995.8 | 0.83  | 21.0 | Gray   |

## ISOLATOR MOUNTING BRACKET



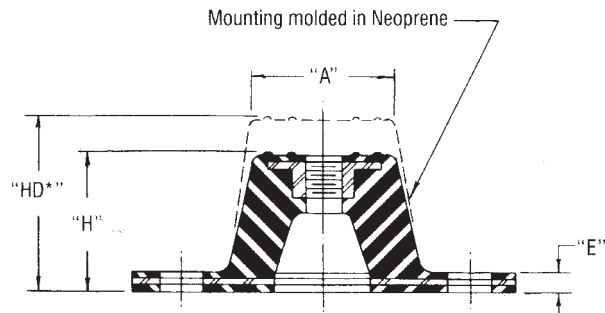
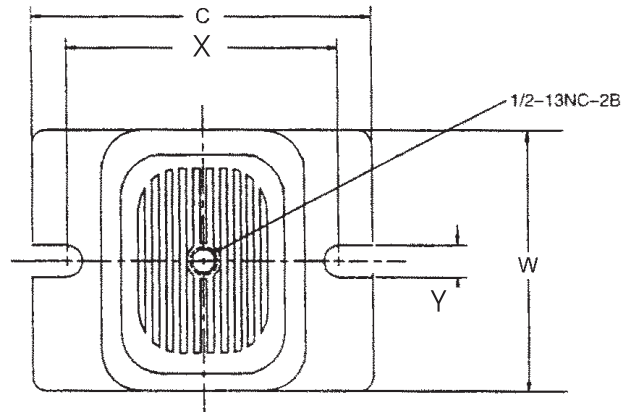
ISOLATOR BRACKET DIMENSIONS

| Item | A  | B     | C      | D     |
|------|----|-------|--------|-------|
| Eng  | 3  | 6 3/8 | 10 1/4 | 5 1/8 |
| SI   | 76 | 162   | 260    | 130   |

| Item | E     | F   | G    |
|------|-------|-----|------|
| Eng  | 1 3/8 | 3/4 | 5/16 |
| SI   | 35    | 19  | 8    |

## NEOPRENE ISOLATOR DETAILS

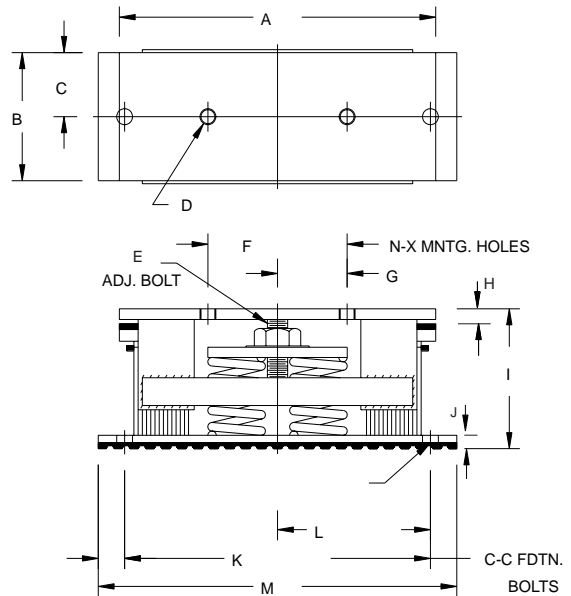


| TYPE        | A    | C      | E    | H      | HD    | W      | X     | Y     |
|-------------|------|--------|------|--------|-------|--------|-------|-------|
| R-4 or RD-4 | 3"   | 6.250" | 0.4" | 1.625" | 2.75" | 4.625" | 5"    | 0.55" |
|             | 76mm | 159mm  | 10mm | 41mm   | 70mm  | 118mm  | 127mm | 14mm  |

## SEISMIC ISOLATORS

| TYPE & SIZE | MAX LOAD |      | DEFL. |    |
|-------------|----------|------|-------|----|
|             | kg       | lbs. | mm    | in |
| AWMR-2-530  | 1043     | 2300 | 51    | 2  |
| AWMR-2-552  | 1724     | 3800 | 51    | 2  |

## SEISMIC ISOLATOR DETAILS



## AWMR DIMENSIONS

|                  | A     | B     | C    | D          | E    | F     | G    | H    | I     | J    | K     | L     | M     | N/X          |
|------------------|-------|-------|------|------------|------|-------|------|------|-------|------|-------|-------|-------|--------------|
| AWMR-2<br>50-5XX | 381mm | 152mm | 76mm | 16<br>11NC | 19mm | 191mm | 95mm | 13mm | 241mm | 17mm | 368mm | 184mm | 432mm | 19mm<br>16mm |

|                  | A   | B  | C  | D          | E  | F    | G      | H    | I  | J    | K     | L      | M      | N/X          |
|------------------|-----|----|----|------------|----|------|--------|------|----|------|-------|--------|--------|--------------|
| AWMR-2<br>50-5XX | 15" | 6" | 3" | 16<br>11NC | 1" | 7.5" | 3-3/4" | 1/2" | 9" | 5/8" | 14.5" | 7-1/4" | 17.25" | 3/8"<br>5/8" |

# Sound Data

Sound Pressure Levels (SPL), dB re 20 microPa in accordance with ARI Standard 575-94

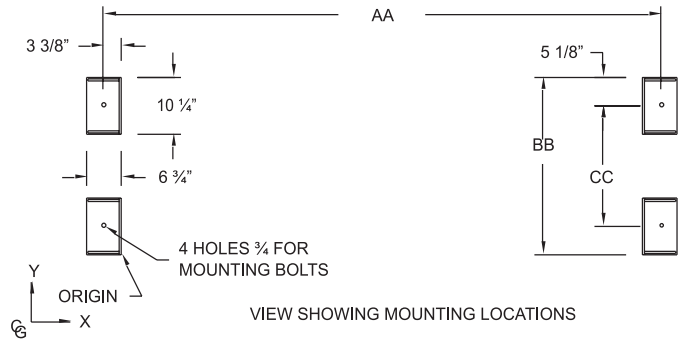
| MODEL      | Octave Band Hz |     |      |     |      |      |      |      | Weighted dBA |
|------------|----------------|-----|------|-----|------|------|------|------|--------------|
|            | 63             | 125 | 250  | 500 | 1000 | 2000 | 4000 | 8000 |              |
| YCWS0100SC | 76             | 72  | 71.5 | 76  | 75   | 73   | 64   | 62   | 79           |
| YCWS0120SC | 76             | 72  | 72   | 77  | 76   | 73   | 64   | 62   | 80           |
| YCWS0140SC | 76             | 72  | 72.5 | 78  | 77   | 74   | 65   | 62   | 81           |
| YCWS0180SC | 76             | 73  | 73   | 79  | 78.5 | 75   | 65   | 62   | 82           |
| YCWS0200SC | 76             | 73  | 73.5 | 80  | 79.5 | 76   | 66   | 62   | 83           |
| YCWS0220SC | 76             | 74  | 74   | 81  | 80.5 | 77   | 66.5 | 62   | 84           |
| YCWS0240SC | 76             | 74  | 75   | 82  | 81.5 | 78   | 67   | 62   | 85           |

Note: All 'A' weighted sound pressure data ± 3 dBA

# Dimensions (English)

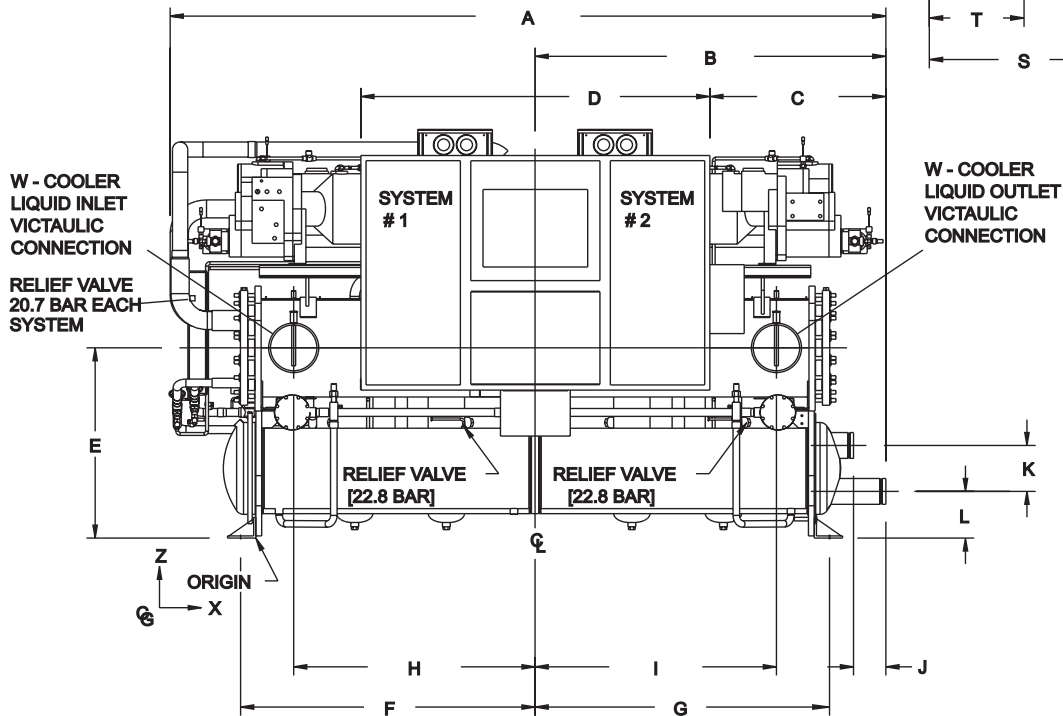
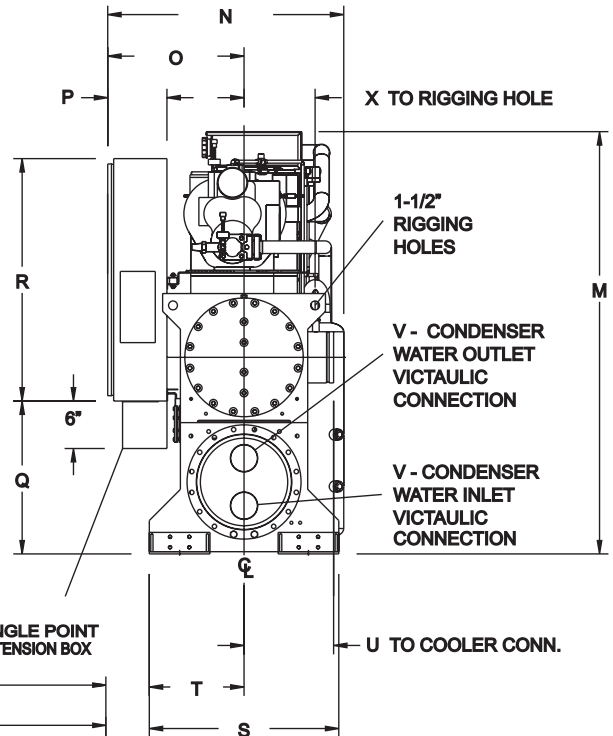
## Mounting Dimensions

| Model      | AA      | BB | CC     |
|------------|---------|----|--------|
| YCWS0100SC | 115-5/8 | 34 | 23-3/4 |
| YCWS0120SC | 115-5/8 | 34 | 23-3/4 |
| YCWS0140SC | 115-5/8 | 34 | 23-3/4 |
| YCWS0180SC | 162-7/8 | 36 | 25-3/4 |
| YCWS0200SC | 162-7/8 | 36 | 25-3/4 |
| YCWS0220SC | 162-7/8 | 36 | 25-3/4 |
| YCWS0240SC | 162-7/8 | 36 | 25-3/4 |



## Center of gravity (inches)

| Model      | X  | Y  | Z  |
|------------|----|----|----|
| YCWS0100SC | 57 | 21 | 34 |
| YCWS0120SC | 58 | 22 | 34 |
| YCWS0140SC | 57 | 22 | 34 |
| YCWS0180SC | 80 | 24 | 36 |
| YCWS0200SC | 80 | 24 | 36 |
| YCWS0220SC | 80 | 24 | 37 |
| YCWS0240SC | 80 | 24 | 37 |



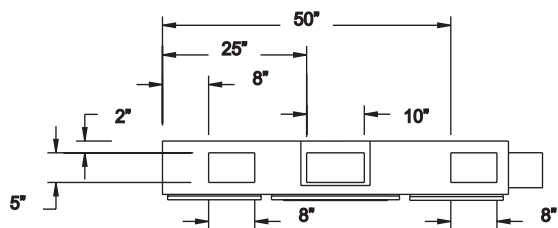


**DIMENSIONS**

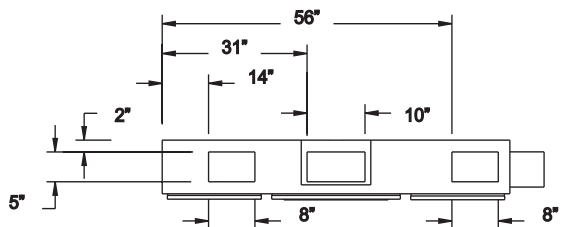
| REF | YCWS0100  | YCWS0120  | YCWS0140  | YCWS0180  | YCWS0200  | YCWS0220  | YCWS0240  |
|-----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| A   | 138-7/8"  | 138-7/8"  | 138-7/8"  | 185-9/16" | 185-9/16" | 185-9/16" | 185-9/16" |
| B   | 67-1/2"   | 67-1/2"   | 67-1/2"   | 91-3/16"  | 91-3/16"  | 91-3/16"  | 91-3/16"  |
| C   | 37-1/2"   | 37-1/2"   | 37-1/2"   | 61-1/4"   | 61-1/4"   | 61-1/4"   | 61-1/4"   |
| D   | 60"       | 60"       | 60"       | 60"       | 60"       | 60"       | 60"       |
| E   | 36-5/8"   | 36-5/8"   | 36-5/8"   | 39-31/32" | 39-31/32" | 39-31/32" | 39-31/32" |
| F   | 57-7/16"  | 57-7/16"  | 57-7/16"  | 81-7/16"  | 81-7/16"  | 81-7/16"  | 81-7/16"  |
| G   | 57-7/16"  | 57-7/16"  | 57-7/16"  | 81-7/16"  | 81-7/16"  | 81-7/16"  | 81-7/16"  |
| H   | 46-1/32"  | 46-1/32"  | 46-1/32"  | 67-13/16" | 67-13/16" | 67-13/16" | 67-13/16" |
| I   | 46-1/32"  | 46-1/32"  | 46-1/32"  | 67-13/16" | 67-13/16" | 67-13/16" | 67-13/16" |
| J   | 6-1/8"    | 6-1/8"    | 6-1/8"    | 5-1/8"    | 5-1/8"    | 5-1/8"    | 5-1/8"    |
| K   | 8-1/4"    | 8-1/4"    | 8-1/4"    | 9"        | 9"        | 9"        | 9"        |
| L   | 8-1/4"    | 8-1/4"    | 8-1/4"    | 9-7/8"    | 9-7/8"    | 9-7/8"    | 9-7/8"    |
| M   | 72-17/32" | 72-17/32" | 72-17/32" | 79-9/32"  | 79-9/32"  | 79-9/32"  | 79-9/32"  |
| N   | 41-5/16"  | 41-5/16"  | 41-5/16"  | 41-27/32" | 41-27/32" | 41-27/32" | 41-27/32" |
| O   | 23-11/16" | 23-11/16" | 23-11/16" | 23-27/32" | 23-27/32" | 23-27/32" | 23-27/32" |
| P   | 10"       | 10"       | 10"       | 10"       | 10"       | 10"       | 10"       |
| Q   | 29-1/4"   | 29-1/4"   | 29-1/4"   | 32-15/16" | 32-15/16" | 32-15/16" | 32-15/16" |
| R   | 40-7/8"   | 40-7/8"   | 40-7/8"   | 40-7/8"   | 40-7/8"   | 40-7/8"   | 40-7/8"   |
| S   | 34"       | 34"       | 34"       | 36"       | 36"       | 36"       | 36"       |
| T   | 17"       | 17"       | 17"       | 18"       | 18"       | 18"       | 18"       |
| U   | 16-1/8"   | 16-1/8"   | 16-1/8"   | 16-5/8"   | 16-5/8"   | 16-5/8"   | 16-5/8"   |
| V   | 5-1/2"    | 5-1/2"    | 5-1/2"    | 6-39/64"  | 6-39/64"  | 6-39/64"  | 6-39/64"  |
| W   | 8-5/8"    | 8-5/8"    | 8-5/8"    | 8-5/8"    | 8-5/8"    | 8-5/8"    | 8-5/8"    |
| X   | 13-1/4"   | 13-1/4"   | 13-1/4"   | 13-1/4"   | 13-1/4"   | 13-1/4"   | 13-1/4"   |

**REVISED DIMENSIONS FOR 200/230V CHILLERS**

| REF | YCWS0100 | YCWS0120 | YCWS0140 | YCWS0180  | YCWS0200  | YCWS0220  | YCWS0240  |
|-----|----------|----------|----------|-----------|-----------|-----------|-----------|
| C   | 32-1/4"  | 32-1/4"  | 32-1/4"  | 56"       | 56"       | 56"       | 56"       |
| D   | 70-1/2"  | 70-1/2"  | 70-1/2"  | 70-1/2"   | 70-1/2"   | 70-1/2"   | 70-1/2"   |
| Q   | 20-7/8"  | 20-7/8"  | 20-7/8"  | 25-15/16" | 25-15/16" | 25-15/16" | 25-15/16" |



VIEW SHOWING CUSTOMER POWER ENTRY LOCATIONS ON UNDERSIDE OF PANEL

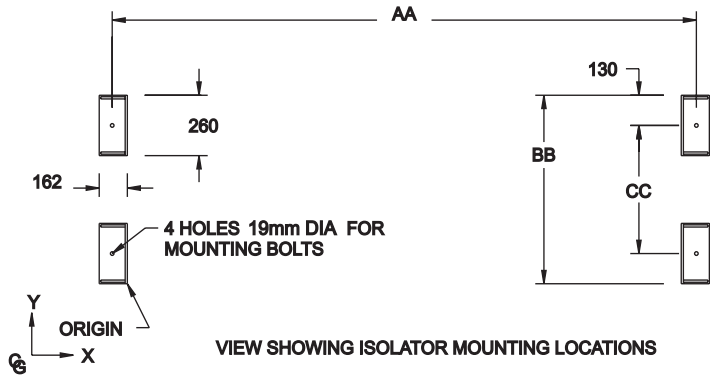


VIEW SHOWING DIMENSIONS FOR 200/230V PANEL

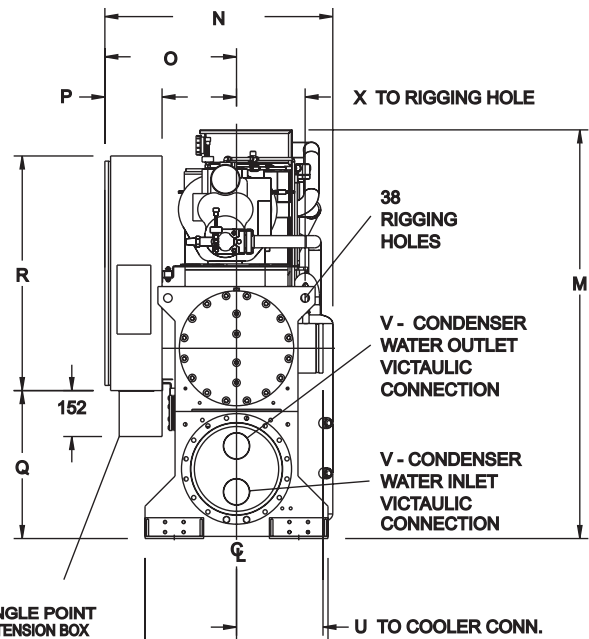
**NOTES:**

- CLEARANCES - Recommended YORK clearances to service the unit are as follows:  
 Rear to Wall: 1' 8"  
 Front to Wall: 2' 8"  
 Top: 1' 8"  
 Tube cleaning and removal: 8' (either end)
- Shipping skids (not shown) will increase the height of the unit by 6", but **MUST** be removed upon installation.
- Spring and neoprene isolators will increase the overall height of the unit by approximately 3".

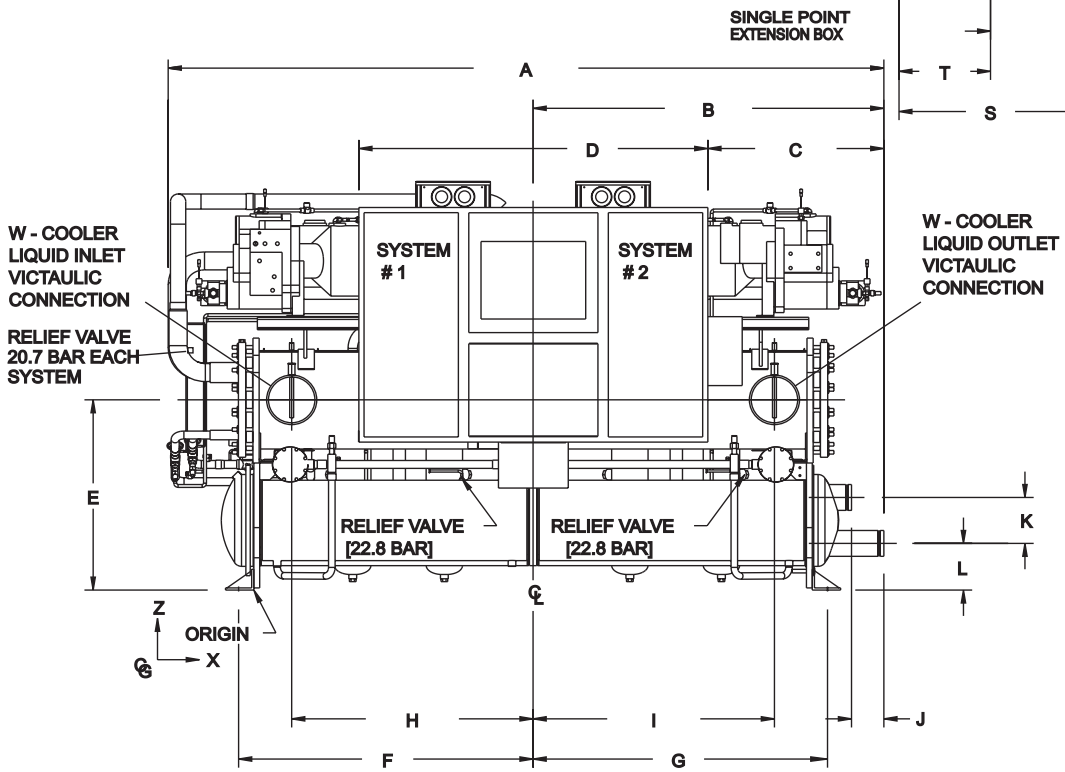
| Mounting Dimensions (mm) |      |     |     |
|--------------------------|------|-----|-----|
| Model                    | AA   | BB  | CC  |
| YCWS0100SC               | 2937 | 864 | 603 |
| YCWS0120SC               | 2937 | 864 | 603 |
| YCWS0140SC               | 2937 | 864 | 603 |
| YCWS0180SC               | 4137 | 914 | 654 |
| YCWS0200SC               | 4137 | 914 | 654 |
| YCWS0220SC               | 4137 | 914 | 654 |
| YCWS0240SC               | 4137 | 914 | 654 |



| Center of gravity (mm) |      |     |     |
|------------------------|------|-----|-----|
| Model                  | X    | Y   | Z   |
| YCWS0100SC             | 1442 | 545 | 862 |
| YCWS0120SC             | 1464 | 550 | 866 |
| YCWS0140SC             | 1443 | 554 | 870 |
| YCWS0180SC             | 2031 | 613 | 920 |
| YCWS0200SC             | 2026 | 612 | 925 |



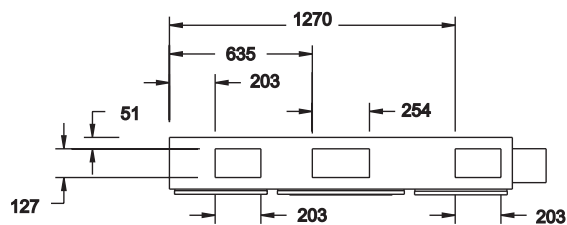
All dimensions are in mm unless otherwise noted.



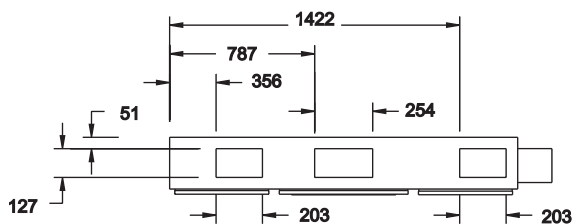
| REF NO | YCWS0100 | YCWS0120 | YCWS0140 | YCWS0180 | YCWS0200 | YCWS0220 | YCWS0240 |
|--------|----------|----------|----------|----------|----------|----------|----------|
| A      | 3527     | 3527     | 3527     | 4714     | 4714     | 4714     | 4714     |
| B      | 1715     | 1715     | 1715     | 2316     | 2316     | 2316     | 2316     |
| C      | 953      | 953      | 953      | 1556     | 1556     | 1556     | 1556     |
| D      | 1524     | 1524     | 1524     | 1524     | 1524     | 1524     | 1524     |
| E      | 930      | 930      | 930      | 1015     | 1015     | 1015     | 1015     |
| F      | 1459     | 1459     | 1459     | 2069     | 2069     | 2069     | 2069     |
| G      | 1459     | 1459     | 1459     | 2069     | 2069     | 2069     | 2069     |
| H      | 1169     | 1169     | 1169     | 1722     | 1722     | 1722     | 1722     |
| I      | 1169     | 1169     | 1169     | 1722     | 1722     | 1722     | 1722     |
| J      | 156      | 156      | 156      | 130      | 130      | 130      | 130      |
| K      | 210      | 210      | 210      | 229      | 229      | 229      | 229      |
| L      | 210      | 210      | 210      | 251      | 251      | 251      | 251      |
| M      | 1842     | 1842     | 1842     | 2014     | 2014     | 2014     | 2014     |
| N      | 1049     | 1049     | 1049     | 1063     | 1063     | 1063     | 1063     |
| O      | 602      | 602      | 602      | 606      | 606      | 606      | 606      |
| P      | 254      | 254      | 254      | 254      | 254      | 254      | 254      |
| Q      | 743      | 743      | 743      | 837      | 837      | 837      | 837      |
| R      | 1038     | 1038     | 1038     | 1038     | 1038     | 1038     | 1038     |
| S      | 864      | 864      | 864      | 914      | 914      | 914      | 914      |
| T      | 432      | 432      | 432      | 457      | 457      | 457      | 457      |
| U      | 410      | 410      | 410      | 422      | 422      | 422      | 422      |
| V      | 141      | 141      | 141      | 168      | 168      | 168      | 168      |
| W      | 219      | 219      | 219      | 219      | 219      | 219      | 219      |
| X      | 337      | 337      | 337      | 337      | 337      | 337      | 337      |

REVISED DIMENSIONS FOR 200/230V CHILLERS

| REF | YCWS0100 | YCWS0120 | YCWS0140 | YCWS0180 | YCWS0200 | YCWS0220 | YCWS0240 |
|-----|----------|----------|----------|----------|----------|----------|----------|
| C   | 819      | 819      | 819      | 1422     | 1422     | 1422     | 1422     |
| D   | 1791     | 1791     | 1791     | 1791     | 1791     | 1791     | 1791     |
| Q   | 530      | 530      | 530      | 659      | 659      | 659      | 659      |
| R   | 1219     | 1219     | 1219     | 1219     | 1219     | 1219     | 1219     |



VIEW SHOWING CUSTOMER POWER ENTRY LOCATIONS ON UNDERSIDE OF PANEL



VIEW SHOWING DIMENSIONS FOR 200/230V PANEL

NOTES:

- CLEARANCES - Recommended YORK clearances to service the unit are as follows:  
 Rear to Wall: 508mm  
 Front to Wall: 813mm  
 Top: 508mm  
 Tube cleaning and removal: 2438mm (either end)
- Shipping skids (not shown) will increase the height of the unit by 152mm, but **MUST** be removed upon installation.
- Spring and neoprene isolators will increase the

# Electrical Data

## MULTIPOINT POWER SUPPLY (SEE FIG 9 , PAGE 30)

(Each of the two field provided power supply circuits individually protected with branch circuit protection. Field connections to factory provided Terminal Block(std), Non-Fused Disconnects(opt) or individual system Circuit Breakers(opt) in each of the two motor control centers.)

| SYSTEM #1     |              |                             |                |               |                      |     |         |
|---------------|--------------|-----------------------------|----------------|---------------|----------------------|-----|---------|
| CHILLER MODEL | VOLT CODE HZ | MIN <sup>(1)</sup> CIR. MCA | MIN NF DISC SW | MIN DUAL FUSE | MAX DUAL FUSE MAX CB | RLA | Y-D LRA |
| YCWS0100SC    | -17          | 175                         | 200            | 225           | 300                  | 132 | 404     |
| YCWS0120SC    |              | 175                         | 200            | 225           | 300                  | 132 | 404     |
| YCWS0140SC    |              | 227                         | 250            | 300           | 400                  | 172 | 591     |
| YCWS0180SC    |              | 227                         | 250            | 300           | 400                  | 172 | 591     |
| YCWS0200SC    |              | 284                         | 400            | 350           | 500                  | 215 | 708     |
| YCWS0220SC    |              | 284                         | 400            | 350           | 500                  | 215 | 708     |
| YCWS0240SC    |              | 337                         | 400            | 450           | 600                  | 255 | 708     |
| YCWS0100SC    |              | -28                         | 153            | 150           | 200                  | 250 | 115     |
| YCWS0120SC    | 153          |                             | 150            | 200           | 250                  | 115 | 354     |
| YCWS0140SC    | 198          |                             | 200            | 250           | 350                  | 150 | 481     |
| YCWS0180SC    | 198          |                             | 200            | 250           | 350                  | 150 | 481     |
| YCWS0200SC    | 247          |                             | 250            | 300           | 400                  | 187 | 642     |
| YCWS0220SC    | 247          |                             | 250            | 300           | 400                  | 187 | 642     |
| YCWS0240SC    | 293          |                             | 400            | 400           | 500                  | 222 | 642     |
| YCWS0100SC    | -40          |                             | 93             | 100           | 125                  | 150 | 70      |
| YCWS0120SC    |              | 93                          | 100            | 125           | 150                  | 70  | 219     |
| YCWS0140SC    |              | 120                         | 150            | 150           | 200                  | 91  | 285     |
| YCWS0180SC    |              | 120                         | 150            | 150           | 200                  | 91  | 285     |
| YCWS0200SC    |              | 149                         | 150            | 200           | 250                  | 113 | 343     |
| YCWS0220SC    |              | 149                         | 150            | 200           | 250                  | 113 | 343     |
| YCWS0240SC    |              | 177                         | 200            | 225           | 300                  | 134 | 343     |
| YCWS0100SC    |              | -46                         | 77             | 100           | 100                  | 125 | 58      |
| YCWS0120SC    | 77           |                             | 100            | 100           | 125                  | 58  | 174     |
| YCWS0140SC    | 99           |                             | 100            | 125           | 175                  | 75  | 228     |
| YCWS0180SC    | 99           |                             | 100            | 125           | 175                  | 75  | 228     |
| YCWS0200SC    | 123          |                             | 150            | 150           | 200                  | 93  | 280     |
| YCWS0220SC    | 123          |                             | 150            | 150           | 200                  | 93  | 280     |
| YCWS0240SC    | 147          |                             | 150            | 200           | 250                  | 111 | 280     |
| YCWS0100SC    | -58          |                             | 62             | 60            | 80                   | 110 | 46      |
| YCWS0120SC    |              | 62                          | 60             | 80            | 110                  | 46  | 138     |
| YCWS0140SC    |              | 79                          | 100            | 100           | 125                  | 60  | 182     |
| YCWS0180SC    |              | 79                          | 100            | 100           | 125                  | 60  | 182     |
| YCWS0200SC    |              | 99                          | 100            | 125           | 175                  | 75  | 224     |
| YCWS0220SC    |              | 99                          | 100            | 125           | 175                  | 75  | 224     |
| YCWS0240SC    |              | 118                         | 150            | 150           | 200                  | 89  | 224     |

| SYSTEM #2     |              |                             |                |               |                      |     |         |
|---------------|--------------|-----------------------------|----------------|---------------|----------------------|-----|---------|
| CHILLER MODEL | VOLT CODE HZ | MIN <sup>(1)</sup> CIR. MCA | MIN NF DISC SW | MIN DUAL FUSE | MAX DUAL FUSE MAX CB | RLA | Y-D LRA |
| YCWS0100SC    | -17          | 175                         | 200            | 225           | 300                  | 140 | 404     |
| YCWS0120SC    |              | 227                         | 250            | 300           | 400                  | 181 | 591     |
| YCWS0140SC    |              | 227                         | 250            | 300           | 400                  | 181 | 591     |
| YCWS0180SC    |              | 284                         | 400            | 350           | 500                  | 227 | 708     |
| YCWS0200SC    |              | 284                         | 400            | 350           | 500                  | 227 | 708     |
| YCWS0220SC    |              | 337                         | 400            | 450           | 600                  | 269 | 708     |
| YCWS0240SC    |              | 337                         | 400            | 450           | 600                  | 269 | 708     |
| YCWS0100SC    | -28          | 153                         | 150            | 200           | 250                  | 122 | 354     |
| YCWS0120SC    |              | 198                         | 200            | 250           | 300                  | 158 | 481     |
| YCWS0140SC    |              | 198                         | 200            | 250           | 350                  | 158 | 481     |
| YCWS0180SC    |              | 247                         | 250            | 300           | 400                  | 197 | 642     |
| YCWS0200SC    |              | 247                         | 250            | 300           | 400                  | 197 | 642     |
| YCWS0220SC    |              | 293                         | 400            | 400           | 500                  | 234 | 642     |
| YCWS0240SC    |              | 293                         | 400            | 400           | 500                  | 234 | 642     |
| YCWS0100SC    | -40          | 93                          | 100            | 125           | 150                  | 74  | 219     |
| YCWS0120SC    |              | 120                         | 150            | 150           | 200                  | 96  | 285     |
| YCWS0140SC    |              | 120                         | 150            | 150           | 200                  | 96  | 285     |
| YCWS0180SC    |              | 149                         | 150            | 200           | 250                  | 119 | 343     |
| YCWS0200SC    |              | 149                         | 150            | 200           | 250                  | 119 | 343     |
| YCWS0220SC    |              | 177                         | 200            | 225           | 300                  | 141 | 343     |
| YCWS0240SC    |              | 177                         | 200            | 225           | 300                  | 141 | 343     |
| YCWS0100SC    | -46          | 77                          | 100            | 100           | 125                  | 61  | 174     |
| YCWS0120SC    |              | 99                          | 100            | 125           | 175                  | 79  | 228     |
| YCWS0140SC    |              | 99                          | 100            | 125           | 175                  | 79  | 228     |
| YCWS0180SC    |              | 123                         | 150            | 150           | 200                  | 98  | 280     |
| YCWS0200SC    |              | 123                         | 150            | 150           | 200                  | 98  | 280     |
| YCWS0220SC    |              | 147                         | 150            | 200           | 250                  | 117 | 280     |
| YCWS0240SC    |              | 147                         | 150            | 200           | 250                  | 117 | 280     |
| YCWS0100SC    | -58          | 62                          | 60             | 80            | 110                  | 49  | 138     |
| YCWS0120SC    |              | 79                          | 100            | 100           | 125                  | 63  | 182     |
| YCWS0140SC    |              | 79                          | 100            | 100           | 125                  | 63  | 182     |
| YCWS0180SC    |              | 99                          | 100            | 125           | 175                  | 79  | 224     |
| YCWS0200SC    |              | 99                          | 100            | 125           | 175                  | 79  | 224     |
| YCWS0220SC    |              | 118                         | 150            | 150           | 175                  | 94  | 224     |
| YCWS0240SC    |              | 118                         | 150            | 150           | 200                  | 94  | 224     |

# Electrical Data - Cont.

## SINGLE POINT POWER SUPPLY (SEE FIG 10 & 11 , PAGE 30 & 31)

(One field provided power supply circuit to the control panel. Field connections to factory provided Terminal Blocks(opt) or Non-Fused Disconnect(opt). Individual system Circuit Breakers, Non-Fused Disconnects or Class 'J' Fuse/Fuse Blocks in each motor control center.)

| CHILLER MODELS | VOLT CODE HZ | MIN <sup>(1)</sup> CIR MCA | MIN N/F DISC SW | MIN DUAL FUSE | MAX DUAL FUSE MAX CB | SYSTEM #1 |         | SYSTEM #2 |         |
|----------------|--------------|----------------------------|-----------------|---------------|----------------------|-----------|---------|-----------|---------|
|                |              |                            |                 |               |                      | RLA       | Y-D LRA | RLA       | Y-D LRA |
| YCWS0100SC     | -17          | 315                        | 400             | 400           | 450                  | 140       | 404     | 140       | 404     |
| YCWS0120SC     |              | 366                        | 400             | 450           | 500                  | 140       | 404     | 181       | 591     |
| YCWS0140SC     |              | 407                        | 600             | 500           | 500                  | 181       | 591     | 181       | 591     |
| YCWS0180SC     |              | 465                        | 600             | 600           | 600                  | 181       | 591     | 227       | 708     |
| YCWS0200SC     |              | 511                        | 600             | 600           | 700                  | 227       | 708     | 227       | 708     |
| YCWS0220SC     |              | 563                        | 600             | 700           | 800                  | 227       | 708     | 269       | 708     |
| YCWS0240SC     |              | 605                        | 800             | 700           | 800                  | 269       | 708     | 269       | 708     |
| YCWS0100SC     |              | -28                        | 275             | 400           | 350                  | 350       | 122     | 354       | 122     |
| YCWS0120SC     | 320          |                            | 400             | 400           | 450                  | 122       | 354     | 158       | 481     |
| YCWS0140SC     | 356          |                            | 400             | 400           | 500                  | 158       | 481     | 158       | 481     |
| YCWS0180SC     | 404          |                            | 600             | 500           | 600                  | 158       | 481     | 197       | 642     |
| YCWS0200SC     | 443          |                            | 600             | 500           | 600                  | 197       | 642     | 197       | 642     |
| YCWS0220SC     | 490          |                            | 600             | 600           | 700                  | 197       | 642     | 234       | 642     |
| YCWS0240SC     | 527          |                            | 600             | 600           | 700                  | 234       | 642     | 234       | 642     |
| YCWS0100SC     | -40          |                            | 167             | 200           | 200                  | 225       | 74      | 219       | 74      |
| YCWS0120SC     |              | 194                        | 200             | 225           | 250                  | 74        | 219     | 96        | 285     |
| YCWS0140SC     |              | 216                        | 250             | 250           | 300                  | 96        | 285     | 96        | 285     |
| YCWS0180SC     |              | 245                        | 250             | 300           | 350                  | 96        | 285     | 119       | 343     |
| YCWS0200SC     |              | 268                        | 400             | 300           | 350                  | 119       | 343     | 119       | 343     |
| YCWS0220SC     |              | 295                        | 400             | 350           | 400                  | 119       | 343     | 141       | 343     |
| YCWS0240SC     |              | 317                        | 400             | 400           | 450                  | 141       | 343     | 141       | 343     |
| YCWS0100SC     |              | -46                        | 137             | 150           | 175                  | 175       | 61      | 174       | 61      |
| YCWS0120SC     | 160          |                            | 200             | 200           | 225                  | 61        | 174     | 79        | 228     |
| YCWS0140SC     | 178          |                            | 200             | 200           | 250                  | 79        | 228     | 79        | 228     |
| YCWS0180SC     | 202          |                            | 250             | 250           | 250                  | 79        | 228     | 98        | 280     |
| YCWS0200SC     | 221          |                            | 250             | 250           | 300                  | 98        | 280     | 98        | 280     |
| YCWS0220SC     | 244          |                            | 250             | 300           | 350                  | 98        | 280     | 117       | 280     |
| YCWS0240SC     | 263          |                            | 400             | 300           | 350                  | 117       | 280     | 117       | 280     |
| YCWS0100SC     | -58          |                            | 110             | 150           | 125                  | 150       | 49      | 138       | 49      |
| YCWS0120SC     |              | 128                        | 150             | 150           | 175                  | 49        | 138     | 63        | 182     |
| YCWS0140SC     |              | 142                        | 150             | 175           | 200                  | 63        | 182     | 63        | 182     |
| YCWS0180SC     |              | 162                        | 200             | 200           | 225                  | 63        | 182     | 79        | 224     |
| YCWS0200SC     |              | 178                        | 200             | 200           | 250                  | 79        | 224     | 79        | 224     |
| YCWS0220SC     |              | 197                        | 200             | 225           | 250                  | 79        | 224     | 94        | 224     |
| YCWS0240SC     |              | 212                        | 250             | 250           | 300                  | 94        | 224     | 94        | 224     |

# Incoming Wire Range Selections

## SINGLE POINT POWER SUPPLY

| MODEL NUMBER | SYSTEM # 1 & #2 |                    |                       |                    |                         |
|--------------|-----------------|--------------------|-----------------------|--------------------|-------------------------|
|              | VOLT CODE       | TERM BLK           | TERM BLK CUST. GROUND | N-F DIS SW         | N-F DIS SW CUST. GROUND |
| YCWS0100SC   | -17             | #2/0 - 500 KCM     | # 4 - 3/0 AWG         | 250 - 500 KCM      | # 4 - 3/0 AWG           |
| YCWS0120SC   |                 | (2) #2 - 300 KCM   | (2) # 4 - 3/0 AWG     | (2) 250 - 500 KCM  | (2) # 4 - 3/0 AWG       |
| YCWS0140SC   |                 | (2) #2 - 300 KCM   | (2) # 4 - 3/0 AWG     | (2) 250 - 500 KCM  | (2) # 4 - 3/0 AWG       |
| YCWS0180SC   |                 | (2) #2/0 - 500 KCM | (2) # 4 - 3/0 AWG     | (2) 250 - 500 KCM  | (2) # 4 - 3/0 AWG       |
| YCWS0200SC   |                 | (2) #2/0 - 500 KCM | (2) # 4 - 3/0 AWG     | (2) 250 - 500 KCM  | (2) # 2 - 4/0 AWG       |
| YCWS0220SC   |                 | (2) #2/0 - 500 KCM | (2) # 4 - 3/0 AWG     | (2) 250 - 500 KCM  | (2) # 2 - 4/0 AWG       |
| YCWS0240SC   |                 | (2) #2/0 - 500 KCM | (2) # 4 - 3/0 AWG     | (2) 250 - 500 KCM  | (2) # 2 - 4/0 AWG       |
| YCWS0100SC   | -28             | #2/0 - 500 KCM     | # 4 - 3/0 AWG         | 250 - 500 KCM      | # 4 - 3/0 AWG           |
| YCWS0120SC   |                 | (2)# 2 - 4/0 AWG   | (2) # 6 - 1/0 AWG     | (2) #3/0 - 250 KCM | (2)#6 - 1/0 AWG         |
| YCWS0140SC   |                 | (2) #2 - 300 KCM   | (2) # 4 - 3/0 AWG     | (2) 250 - 500 KCM  | (2) # 4 - 3/0 AWG       |
| YCWS0180SC   |                 | (2) #2 - 300 KCM   | (2) # 4 - 3/0 AWG     | (2) 250 - 500 KCM  | (2) # 4 - 3/0 AWG       |
| YCWS0200SC   |                 | (2) #2/0 - 500 KCM | (2) # 4 - 3/0 AWG     | (2) 250 - 500 KCM  | (2) # 4 - 3/0 AWG       |
| YCWS0220SC   |                 | (2) #2/0 - 500 KCM | (2) # 4 - 3/0 AWG     | (2) 250 - 500 KCM  | (2) # 4 - 3/0 AWG       |
| YCWS0240SC   |                 | (2) #2/0 - 500 KCM | (2) # 4 - 3/0 AWG     | (2) 250 - 500 KCM  | (2) # 2 - 4/0 AWG       |
| YCWS0100SC   | -40             | #2 - 4/0 AWG       | # 8 - 2 AWG           | #4 - 300 KCM       | # 6 - 1/0 AWG           |
| YCWS0120SC   |                 | #2 - 300 KCM       | # 6 - 1/0 AWG         | #6 - 350 KCM       | # 6 - 1/0 AWG           |
| YCWS0140SC   |                 | #2/0 - 500 KCM     | # 4 - 3/0 AWG         | 250 - 500 KCM      | # 4 - 3/0 AWG           |
| YCWS0180SC   |                 | #2/0 - 500 KCM     | # 4 - 3/0 AWG         | 250 - 500 KCM      | # 4 - 3/0 AWG           |
| YCWS0200SC   |                 | #2/0 - 500 KCM     | # 4 - 3/0 AWG         | 250 - 500 KCM      | # 4 - 3/0 AWG           |
| YCWS0220SC   |                 | #2/0 - 500 KCM     | # 4 - 3/0 AWG         | 250 - 500 KCM      | # 4 - 3/0 AWG           |
| YCWS0240SC   |                 | #2/0 - 500 KCM     | # 4 - 3/0 AWG         | 250 - 500 KCM      | # 4 - 3/0 AWG           |
| YCWS0100SC   | -46             | #2 - 4/0 AWG       | # 8 - 2 AWG           | #4 - 300 KCM       | # 6 - 1/0 AWG           |
| YCWS0120SC   |                 | #2 - 4/0 AWG       | # 8 - 2 AWG           | #4 - 300 KCM       | # 6 - 1/0 AWG           |
| YCWS0140SC   |                 | #2 - 300 KCM       | # 6 - 1/0 AWG         | #4 - 300 KCM       | # 6 - 1/0 AWG           |
| YCWS0180SC   |                 | #2 - 300 KCM       | # 6 - 1/0 AWG         | #6 - 350 KCM       | # 6 - 1/0 AWG           |
| YCWS0200SC   |                 | #2/0 - 500 KCM     | # 4 - 3/0 AWG         | 250 - 500 KCM      | # 4 - 3/0 AWG           |
| YCWS0220SC   |                 | #2/0 - 500 KCM     | # 4 - 3/0 AWG         | 250 - 500 KCM      | # 4 - 3/0 AWG           |
| YCWS0240SC   |                 | #2/0 - 500 KCM     | # 4 - 3/0 AWG         | 250 - 500 KCM      | # 4 - 3/0 AWG           |
| YCWS0100SC   | -58             | #6 - 1/0 AWG       | # 8 - 2 AWG           | #2 - 4/0 AWG       | # 8 - 2 AWG             |
| YCWS0120SC   |                 | #2 - 4/0 AWG       | # 8 - 2 AWG           | #6 - 350 KCM       | #6 - 1/0 AWG            |
| YCWS0140SC   |                 | #2 - 4/0 AWG       | # 8 - 2 AWG           | #6 - 350 KCM       | #6 - 1/0 AWG            |
| YCWS0180SC   |                 | #2 - 4/0 AWG       | # 8 - 2 AWG           | #6 - 350 KCM       | #6 - 1/0 AWG            |
| YCWS0200SC   |                 | #2 - 300 KCM       | # 6 - 1/0 AWG         | #6 - 350 KCM       | #6 - 1/0 AWG            |
| YCWS0220SC   |                 | #2 - 300 KCM       | # 6 - 1/0 AWG         | #6 - 350 KCM       | #6 - 1/0 AWG            |
| YCWS0240SC   |                 | #2 - 300 KCM       | # 6 - 1/0 AWG         | 250 - 500 KCM      | #4 - 3/0 AWG            |

# Incoming Wire Range Selections (Cont.)

## MULTIPOINT WIRING SYSTEM #1

| CHILLER MODEL |     | TERM BLK       | TERMINAL BLK CUSTOMER GROUND | N-F DIS SW       | N-F DIS SW CUSTOMER GROUND | CKT.BRKR         | CKT.BRKR CUSTOMER GROUND |
|---------------|-----|----------------|------------------------------|------------------|----------------------------|------------------|--------------------------|
| YCWS0100SC    |     | #2 - 300 KCM   | # 6 - 1/0 AWG                | #4 - 300 KCM     | # 6 - 1/0 AWG              | #6 - 350 KCM     | # 6 - 1/0 AWG            |
| YCWS0120SC    |     | #1/0 - 300 KCM | # 6 - 1/0 AWG                | #4 - 300 KCM     | # 6 - 1/0 AWG              | #6 - 350 KCM     | # 6 - 1/0 AWG            |
| YCWS0140SC    |     | #2/0 - 500 KCM | # 4 - 3/0 AWG                | #6 - 350 KCM     | # 6 - 1/0 AWG              | 250 - 500 KCM    | # 4 - 3/0 AWG            |
| YCWS0180SC    | -17 | #2/0 - 500 KCM | # 4 - 3/0 AWG                | 250 - 500 KCM    | # 4 - 3/0 AWG              | 250 - 500 KCM    | # 4 - 3/0 AWG            |
| YCWS0200SC    |     | #2/0 - 500 KCM | # 4 - 3/0 AWG                | 250 - 500 KCM    | # 2 - 4/0 AWG              | 250 - 500 KCM    | # 4 - 3/0 AWG            |
| YCWS0220SC    |     | (2) #2-4/0 AWG | (2) # 6 - 1/0 AWG            | 250 - 500 KCM    | # 2 - 4/0 AWG              | (2)250 - 500 KCM | (2) # 2 - 4/0 AWG        |
| YCWS0240SC    |     | (2) #2-4/0 AWG | (2) # 6 - 1/0 AWG            | (2) #3/0-250 KCM | # 2 - 4/0 AWG              | (2)250 - 500 KCM | (2) # 2 - 4/0 AWG        |
| YCWS0100SC    |     | #2 - 4/0 AWG   | # 8 - 2 AWG                  | #4 - 300 KCM     | # 6 - 1/0 AWG              | #4 - 300 KCM     | # 6 - 1/0 AWG            |
| YCWS0120SC    |     | #2 - 4/0 AWG   | # 8 - 2 AWG                  | #4 - 300 KCM     | # 6 - 1/0 AWG              | #4 - 300 KCM     | # 6 - 1/0 AWG            |
| YCWS0140SC    |     | #2 - 300 KCM   | # 6 - 1/0 AWG                | #4 - 300 KCM     | # 6 - 1/0 AWG              | #4 - 300 KCM     | # 4 - 3/0 AWG            |
| YCWS0180SC    | -28 | #2 - 300 KCM   | # 6 - 1/0 AWG                | #4 - 300 KCM     | # 6 - 1/0 AWG              | 250 - 500 KCM    | # 4 - 3/0 AWG            |
| YCWS0200SC    |     | #2/0 - 500 KCM | # 4 - 3/0 AWG                | 250 - 500 KCM    | # 4 - 3/0 AWG              | 250 - 500 KCM    | # 4 - 3/0 AWG            |
| YCWS0220SC    |     | #2/0 - 500 KCM | # 4 - 3/0 AWG                | 250 - 500 KCM    | # 4 - 3/0 AWG              | 250 - 500 KCM    | # 4 - 3/0 AWG            |
| YCWS0240SC    |     | #2/0 - 500 KCM | # 4 - 3/0 AWG                | 250 - 500 KCM    | # 2 - 4/0 AWG              | (2)250 - 500 KCM | (2)# 2 - 4/0 AWG         |
| YCWS0100SC    |     | #6 - 1/0 AWG   | # 8 - 2 AWG                  | #14 - 1/0 AWG    | # 8 - 2 AWG                | #4 - 300 KCM     | # 8 - 2 AWG              |
| YCWS0120SC    |     | #6 - 1/0 AWG   | # 8 - 2 AWG                  | #14 - 1/0 AWG    | # 8 - 2 AWG                | #4 - 300 KCM     | # 8 - 2 AWG              |
| YCWS0140SC    |     | #2 - 4/0 AWG   | # 8 - 2 AWG                  | #4 - 300 KCM     | # 8 - 2 AWG                | #4 - 300 KCM     | # 6 - 1/0 AWG            |
| YCWS0180SC    | -40 | #2 - 4/0 AWG   | # 8 - 2 AWG                  | #4 - 300 KCM     | # 8 - 2 AWG                | #4 - 300 KCM     | # 6 - 1/0 AWG            |
| YCWS0200SC    |     | #2 - 4/0 AWG   | # 8 - 2 AWG                  | #4 - 300 KCM     | # 6 - 1/0 AWG              | #4 - 300 KCM     | # 6 - 1/0 AWG            |
| YCWS0220SC    |     | #2 - 4/0 AWG   | # 8 - 2 AWG                  | #4 - 300 KCM     | # 6 - 1/0 AWG              | #4 - 300 KCM     | # 6 - 1/0 AWG            |
| YCWS0240SC    |     | #2 - 300 KCM   | # 6 - 1/0 AWG                | #4 - 300 KCM     | # 6 - 1/0 AWG              | #6 - 350 KCM     | # 6 - 1/0 AWG            |
| YCWS0100SC    |     | #6 - 1/0 AWG   | # 8 - 2 AWG                  | #14 - 1/0 AWG    | # 8 - 2 AWG                | #2 - 4/0 AWG     | # 8 - 2 AWG              |
| YCWS0120SC    |     | #6 - 1/0 AWG   | # 8 - 2 AWG                  | #14 - 1/0 AWG    | # 8 - 2 AWG                | #2 - 4/0 AWG     | # 8 - 2 AWG              |
| YCWS0140SC    |     | #6 - 1/0 AWG   | # 8 - 2 AWG                  | #4 - 300 KCM     | # 8 - 2 AWG                | #4 - 300 KCM     | # 8 - 2 AWG              |
| YCWS0180SC    | -46 | # 6 - 1/0 AWG  | # 8 - 2 AWG                  | #4 - 300 KCM     | # 8 - 2 AWG                | #4 - 300 KCM     | # 8 - 2 AWG              |
| YCWS0200SC    |     | #2 - 4/0 AWG   | # 8 - 2 AWG                  | #4 - 300 KCM     | # 8 - 2 AWG                | #4 - 300 KCM     | # 6 - 1/0 AWG            |
| YCWS0220SC    |     | #2 - 4/0 AWG   | # 8 - 2 AWG                  | #4 - 300 KCM     | # 8 - 2 AWG                | #4 - 300 KCM     | # 6 - 1/0 AWG            |
| YCWS0240SC    |     | #2 - 4/0 AWG   | # 8 - 2 AWG                  | #4 - 300 KCM     | # 6 - 1/0 AWG              | #4 - 300 KCM     | # 6 - 1/0 AWG            |
| YCWS0100SC    |     | #18 - 2 AWG    | # 8 - 2 AWG                  | #14 - 1/0 AWG    | # 8 - 2 AWG                | #14 - 1/0 AWG    | # 8 - 2 AWG              |
| YCWS0120SC    |     | #18 - 2 AWG    | # 8 - 2 AWG                  | #14 - 1/0 AWG    | # 8 - 2 AWG                | #14 - 1/0 AWG    | # 8 - 2 AWG              |
| YCWS0140SC    |     | #6 - 1/0 AWG   | # 8 - 2 AWG                  | #14 - 1/0 AWG    | # 8 - 2 AWG                | #2 - 4/0 AWG     | # 8 - 2 AWG              |
| YCWS0180SC    | -58 | #6 - 1/0 AWG   | # 8 - 2 AWG                  | #14 - 1/0 AWG    | # 8 - 2 AWG                | #2 - 4/0 AWG     | # 8 - 2 AWG              |
| YCWS0200SC    |     | #6 - 1/0 AWG   | # 8 - 2 AWG                  | #4 - 300 KCM     | # 8 - 2 AWG                | #4 - 300 KCM     | # 8 - 2 AWG              |
| YCWS0220SC    |     | #6 - 1/0 AWG   | # 8 - 2 AWG                  | #4 - 300 KCM     | # 8 - 2 AWG                | #4 - 300 KCM     | # 8 - 2 AWG              |
| YCWS0240SC    |     | #2 - 4/0 AWG   | # 8 - 2 AWG                  | #4 - 300 KCM     | # 8 - 2 AWG                | #6 - 350 KCM     | # 6 - 1/0 AWG            |

**NOTES:** (for Electrical Data on pages 26-28)

1. Minimum Circuit Ampacity (MCA) is based on 125% of the rated load amps for the largest motor plus 100% of the rated load amps for all other loads included in the circuit, per N.E.C. Article 430-24. If the optional Factory Mounted Control Transformer is provided, add the following MCA values to the electrical tables for the system providing power to the transformer: -50, add 5 amps;
2. The minimum recommended disconnect switch is based on 115% of the rated load amps for all loads included in the circuit, per N.E.C. Article 440.
3. Minimum fuse size is based upon 150% of the rated load amps for the largest motor plus 100% of the rated load amps for all other loads included in the circuit to avoid nuisance trips at start-up due to lock rotor amps. It is not recommended in applications where brown outs, frequent starting and stopping of the unit, and/or operation at ambient temperatures in excess of 35°C (95°F) is anticipated.
4. Maximum fuse size is based upon 225% of the rated load amps for the largest motor plus 100% of the rated load amps for all other loads included in the circuit, per N.E.C. Article 440-22.



**MULTIPOINT WIRING SYSTEM #2**

| CHILLER MODEL | TERM BLK | TERMINAL BLK CUSTOMER GROUND | N-F DIS SW        | N-F DIS SW CUSTOMER GROUND | CKT.BRKR      | CKT.BRKR CUSTOMER GROUND           |
|---------------|----------|------------------------------|-------------------|----------------------------|---------------|------------------------------------|
| YCWS0100SC    | -17      | #2 - 300 KCM                 | # 6 - 1/0 AWG     | #4 - 300 KCM               | # 6 - 1/0 AWG | # 6 - 1/0 AWG                      |
| YCWS0120SC    |          | #2/0 - 500 KCM               | # 4 - 3/0 AWG     | #6 - 350 KCM               | # 6 - 1/0 AWG | # 4 - 3/0 AWG                      |
| YCWS0140SC    |          | #2/0 - 500 KCM               | # 4 - 3/0 AWG     | #6 - 350 KCM               | # 6 - 1/0 AWG | # 4 - 3/0 AWG                      |
| YCWS0180SC    |          | #2/0 - 500 KCM               | # 4 - 3/0 AWG     | #6 - 350 KCM               | # 6 - 1/0 AWG | # 4 - 3/0 AWG                      |
| YCWS0200SC    |          | #2/0 - 500 KCM               | # 4 - 3/0 AWG     | 250 - 500 KCM              | # 2 - 4/0 AWG | # 4 - 3/0 AWG                      |
| YCWS0220SC    |          | #2/0 - 500 KCM               | # 4 - 3/0 AWG     | 250 - 500 KCM              | # 2 - 4/0 AWG | # 4 - 3/0 AWG                      |
| YCWS0240SC    |          | (2) #2-4/0 AWG               | (2) # 6 - 1/0 AWG | (2) #3/0-250 KCM           | # 2 - 4/0 AWG | (2)250 - 500 KCM (2) # 2 - 4/0 AWG |
| YCWS0100SC    | -28      | #2 - 4/0 AWG                 | # 8 - 2 AWG       | #4 - 300 KCM               | # 6 - 1/0 AWG | # 6 - 1/0 AWG                      |
| YCWS0120SC    |          | #2 - 300 KCM                 | # 6 - 1/0 AWG     | #4 - 300 KCM               | # 6 - 1/0 AWG | # 4 - 3/0 AWG                      |
| YCWS0140SC    |          | #2 - 300 KCM                 | # 6 - 1/0 AWG     | #4 - 300 KCM               | # 6 - 1/0 AWG | # 4 - 3/0 AWG                      |
| YCWS0180SC    |          | #2/0 - 500 KCM               | # 4 - 3/0 AWG     | 250 - 500 KCM              | # 2 - 4/0 AWG | # 4 - 3/0 AWG                      |
| YCWS0200SC    |          | #2/0 - 500 KCM               | # 4 - 3/0 AWG     | 250 - 500 KCM              | # 4 - 3/0 AWG | # 4 - 3/0 AWG                      |
| YCWS0220SC    |          | #2/0 - 500 KCM               | # 4 - 3/0 AWG     | 250 - 500 KCM              | # 4 - 3/0 AWG | (2)250 - 500 KCM (2)# 2 - 4/0 AWG  |
| YCWS0240SC    |          | #2/0 - 500 KCM               | # 4 - 3/0 AWG     | 250 - 500 KCM              | # 2 - 4/0 AWG | (2)250 - 500 KCM (2)# 2 - 4/0 AWG  |
| YCWS0100SC    | -40      | #6 - 1/0 AWG                 | # 8 - 2 AWG       | #14 - 1/0 AWG              | # 8 - 2 AWG   | # 8 - 2 AWG                        |
| YCWS0120SC    |          | #2 - 4/0 AWG                 | # 8 - 2 AWG       | #4 - 300 KCM               | # 8 - 2 AWG   | # 6 - 1/0 AWG                      |
| YCWS0140SC    |          | #2 - 4/0 AWG                 | # 8 - 2 AWG       | #4 - 300 KCM               | # 8 - 2 AWG   | # 6 - 1/0 AWG                      |
| YCWS0180SC    |          | #2 - 4/0 AWG                 | # 8 - 2 AWG       | #4 - 300 KCM               | # 6 - 1/0 AWG | # 6 - 1/0 AWG                      |
| YCWS0200SC    |          | #2 - 4/0 AWG                 | # 8 - 2 AWG       | #4 - 300 KCM               | # 6 - 1/0 AWG | # 6 - 1/0 AWG                      |
| YCWS0220SC    |          | #2 - 4/0 AWG                 | # 8 - 2 AWG       | #4 - 300 KCM               | # 6 - 1/0 AWG | # 6 - 1/0 AWG                      |
| YCWS0240SC    |          | #2 - 300 KCM                 | # 6 - 1/0 AWG     | #4 - 300 KCM               | # 6 - 1/0 AWG | # 6 - 350 KCM # 6 - 1/0 AWG        |
| YCWS0100SC    | -46      | #6 - 1/0 AWG                 | # 8 - 2 AWG       | #14 - 1/0 AWG              | # 8 - 2 AWG   | # 8 - 2 AWG                        |
| YCWS0120SC    |          | #6 - 1/0 AWG                 | # 8 - 2 AWG       | #4 - 300 KCM               | # 8 - 2 AWG   | # 8 - 2 AWG                        |
| YCWS0140SC    |          | #6 - 1/0 AWG                 | # 8 - 2 AWG       | #4 - 300 KCM               | # 8 - 2 AWG   | # 8 - 2 AWG                        |
| YCWS0180SC    |          | # 2 - 4/0 AWG                | # 8 - 2 AWG       | #4 - 300 KCM               | # 8 - 2 AWG   | # 6 - 1/0 AWG                      |
| YCWS0200SC    |          | #2 - 4/0 AWG                 | # 8 - 2 AWG       | #4 - 300 KCM               | # 8 - 2 AWG   | # 6 - 1/0 AWG                      |
| YCWS0220SC    |          | #2 - 4/0 AWG                 | # 8 - 2 AWG       | #4 - 300 KCM               | # 6 - 1/0 AWG | # 6 - 1/0 AWG                      |
| YCWS0240SC    |          | #2 - 4/0 AWG                 | # 8 - 2 AWG       | #4 - 300 KCM               | # 6 - 1/0 AWG | # 4 - 300 KCM # 6 - 1/0 AWG        |
| YCWS0100SC    | -58      | #18 - 2 AWG                  | # 8 - 2 AWG       | #14 - 1/0 AWG              | # 8 - 2 AWG   | # 8 - 2 AWG                        |
| YCWS0120SC    |          | #6 - 1/0 AWG                 | # 8 - 2 AWG       | #14 - 1/0 AWG              | # 8 - 2 AWG   | # 8 - 2 AWG                        |
| YCWS0140SC    |          | #6 - 1/0 AWG                 | # 8 - 2 AWG       | #14 - 1/0 AWG              | # 8 - 2 AWG   | # 8 - 2 AWG                        |
| YCWS0180SC    |          | #6 - 1/0 AWG                 | # 8 - 2 AWG       | #14 - 1/0 AWG              | # 8 - 2 AWG   | # 8 - 2 AWG                        |
| YCWS0200SC    |          | #6 - 1/0 AWG                 | # 8 - 2 AWG       | #4 - 300 KCM               | # 8 - 2 AWG   | # 8 - 2 AWG                        |
| YCWS0220SC    |          | #2 - 4/0 AWG                 | # 8 - 2 AWG       | #4 - 300 KCM               | # 8 - 2 AWG   | # 6 - 1/0 AWG                      |
| YCWS0240SC    |          | #2 - 4/0 AWG                 | # 8 - 2 AWG       | #4 - 300 KCM               | # 8 - 2 AWG   | # 6 - 350 KCM # 6 - 1/0 AWG        |

5. Circuit breakers supplied by third party vendors must be certified by local electrical standards. Maximum size is based on 225% of the rated load amps for the largest motor plus 100% of the rated load amps for all other loads included in the circuit.

6. The "INCOMING WIRE RANGE" is the minimum and maximum wire size that can be accommodated by the unit wiring lugs. The (2) preceding the wire range indicates the number of termination points available per phase of the wire range specified. Actual wire size and number of wires per phase must be determined based on the National Electrical Code, using copper connectors only. Field wiring must also comply with local codes.

7. A ground lug is provided for each compressor system to accommodate a field grounding conductor per N.E.C. Table 250-95. A control circuit grounding lug is also supplied.

8. The supplied disconnect is a "Disconnecting Means" as defined in the N.E.C. 100, and is intended for isolating the unit for the available power supply to perform maintenance and troubleshooting. This disconnect is not intended to be a Load Break Device.

9. Field Wiring by others which complies to the National Electrical Code & Local Codes.

# Customer Wiring Data

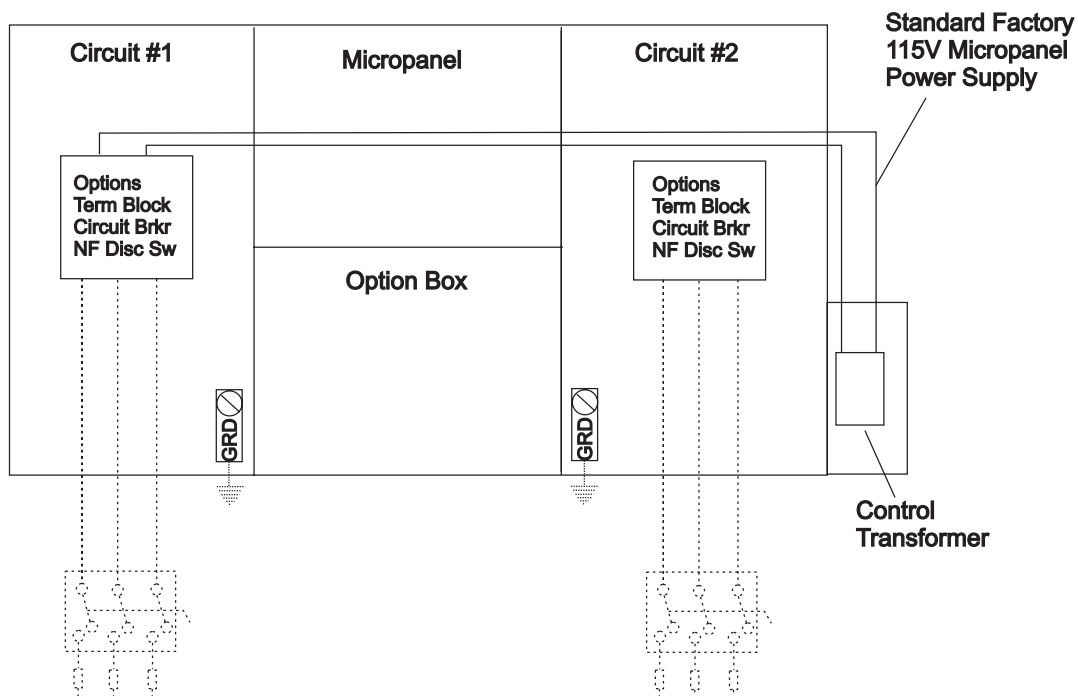


FIGURE 9 - MULTIPOINT POWER SUPPLY CONNECTION - STANDARD UNIT

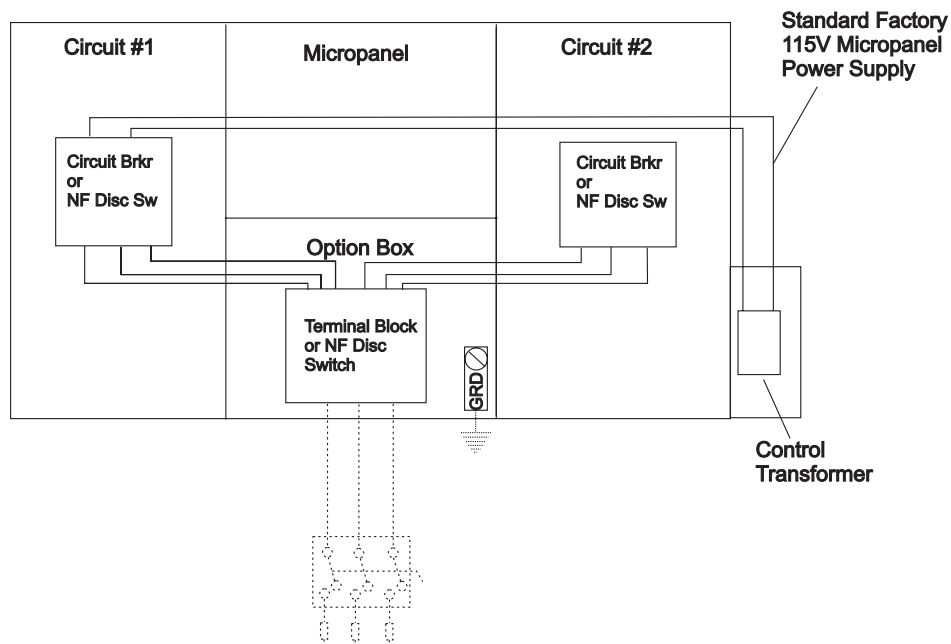
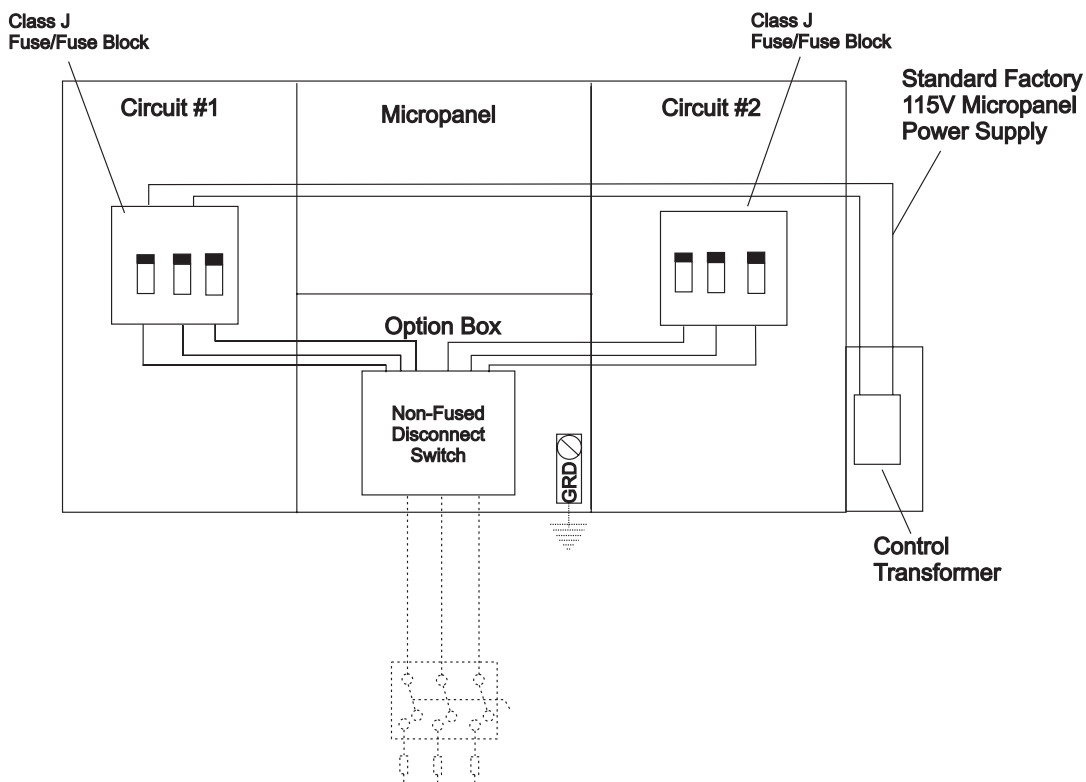


FIGURE 10 - SINGLE POINT POWER SUPPLY WITH INTERNAL CIRCUIT BREAKER OR NON-FUSED DISCONNECT SWITCH



**FIGURE 11 - OPTIONAL SINGLE POINT POWER SUPPLY WITH INTERNAL CLASS J FUSES/BLOCK**

**Notes:**

1. Dashed line indicates field provided wiring
2. The above recommendations are based upon the National Electric Code and the use of copper connectors only.  
Field wiring must comply with local codes.
3. Single point Non-Fused Disconnect Switch is not offered with additional separate Non-Fused Disconnect Switches

**VOLTAGE CODE**

- 17 = 200-3-60
- 28 = 230-3-60
- 40 = 380-3-60
- 46 = 460-3-60
- 58 = 575-3-60

**LEGEND**

|            |   |
|------------|---|
| TERM BLOCK | TERMINAL BLOCK (FACTORY MOUNTED)              |
| C.B.       | CIRCUIT BREAKER (FACTORY MOUNTED)             |
| NF DISC SW | NON-FUSED DISCONNECT SWITCH (FACTORY MOUNTED) |
| D.F.       | DUAL FUSE                                     |
| DISC       | SW DISCONNECT SWITCH                          |
| HZ         | HERTZ   |
| MAX        | MAXIMUM                                       |
| MCA        | MINIMUM CIRCUIT AMPACITY                      |
| MIN        | MINIMUM                                       |
| MIN NF     | MINIMUM NON FUSED                             |
| RLA        | RATED LOAD AMPS                               |
| Y-D LRA    | WYE-DELTA INRUSH LOCKED ROTOR AMPS            |

# Typical Control Panel Wiring

## LEGEND

TS



TRANSIENT VOLTAGE SUPPRESSION  
TERMINAL BLOCK FOR CUSTOMER  
CONNECTIONS. -XCCTB

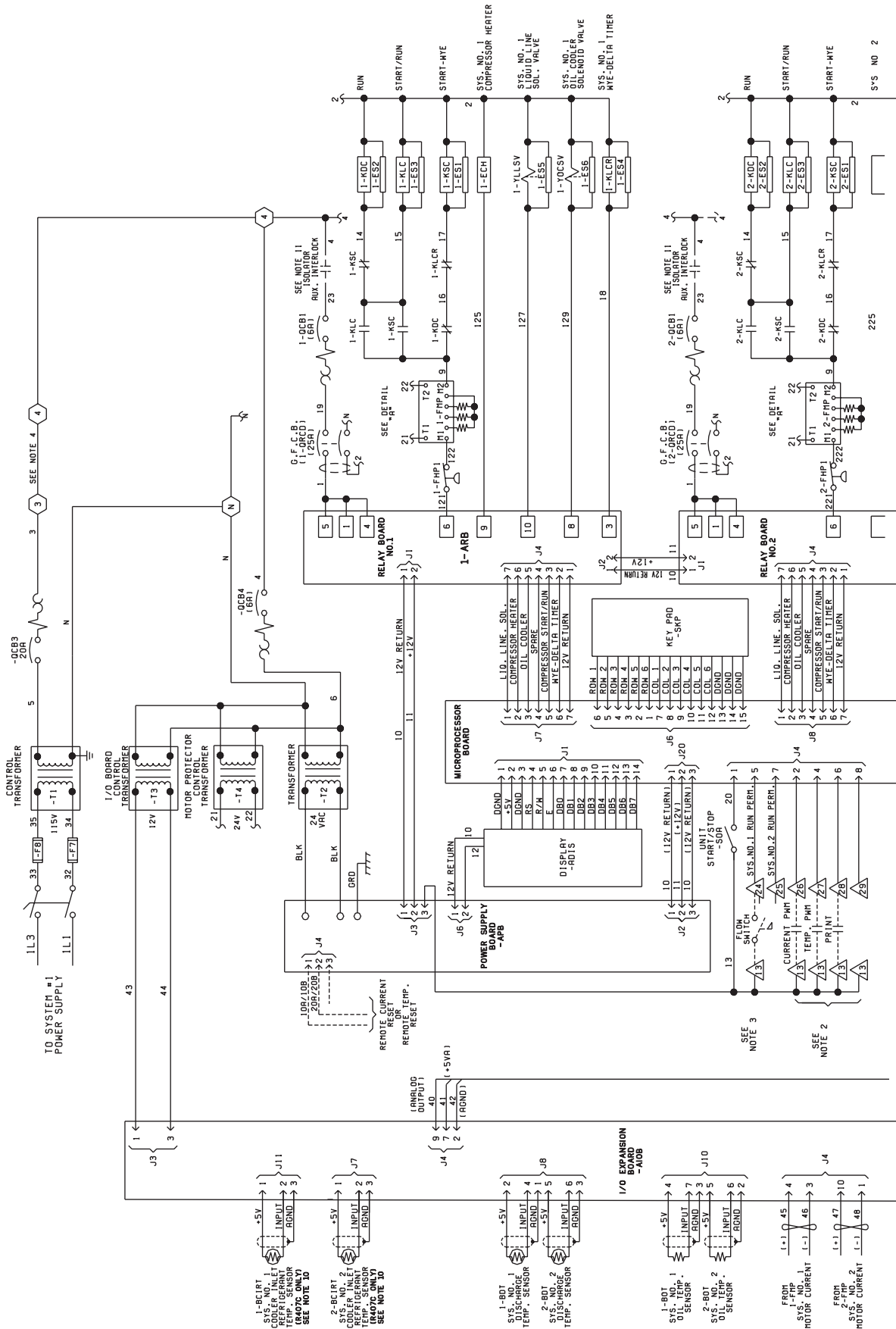
TERMINAL BLOCK FOR CUSTOMER LOW VOLTAGE  
(CLASS 2) CONNECTIONS. SEE NOTE 2, -XT1B1

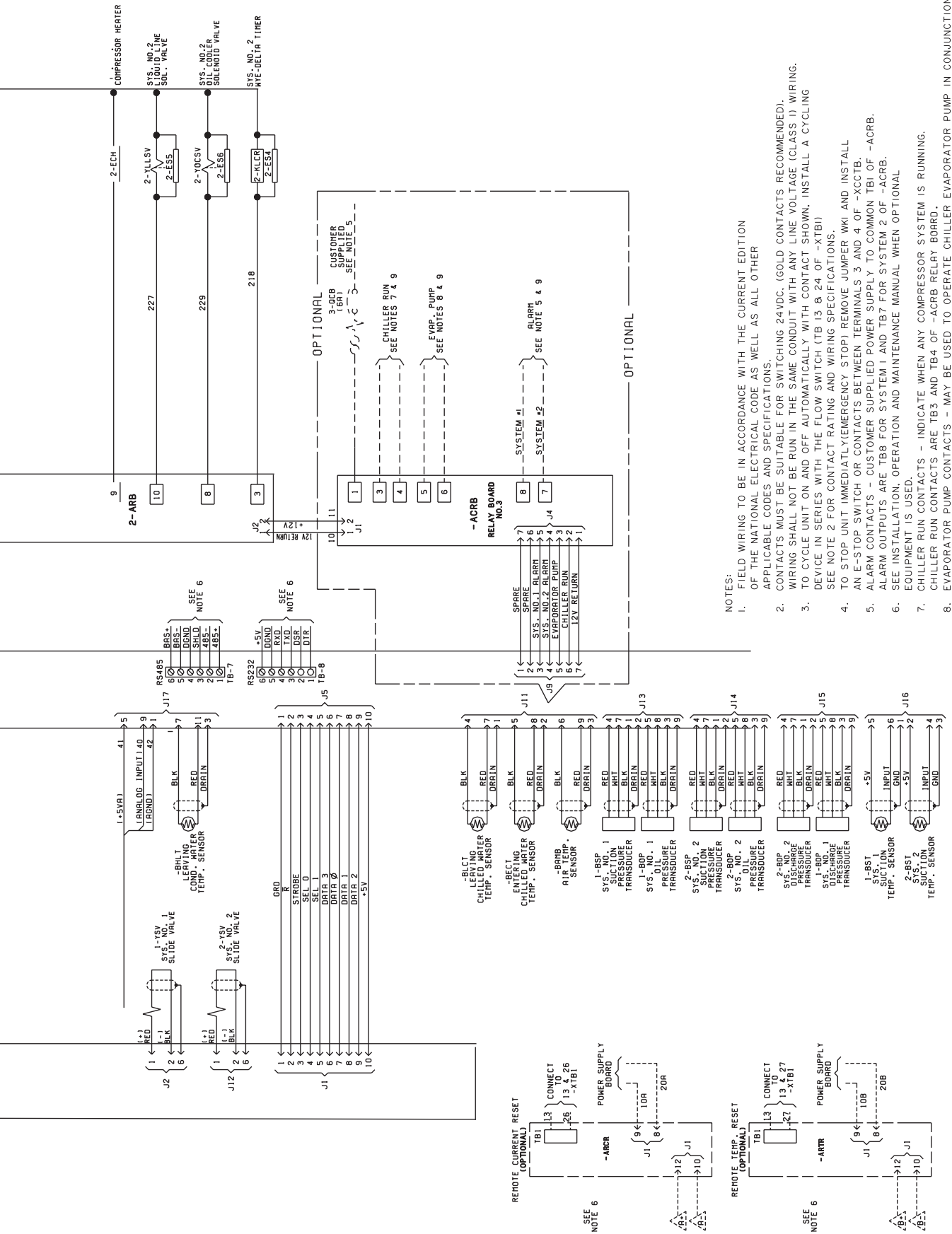
TERMINAL BLOCK FOR YORK  
CONNECTIONS ONLY

WIRING AND COMPONENTS BY YORK

OPTIONAL EQUIPMENT

WIRING AND/OR COMPONENTS BY OTHERS





- NOTES:
- FIELD WIRING TO BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE NATIONAL ELECTRICAL CODE AS WELL AS ALL OTHER APPLICABLE CODES AND SPECIFICATIONS.
  - CONTACTS MUST BE SUITABLE FOR SWITCHING 24VDC. (GOLD CONTACTS RECOMMENDED).
  - WIRING SHALL NOT BE RUN IN THE SAME CONDUIT WITH ANY LINE VOLTAGE (CLASS 1) WIRING. TO CYCLE UNIT ON AND OFF AUTOMATICALLY WITH CONTACT SHOWN, INSTALL A CYCLING DEVICE IN SERIES WITH THE FLOW SWITCH (TB 13 & 24 OF -XTBI) SEE NOTE 2 FOR CONTACT RATING AND WIRING SPECIFICATIONS.
  - AN E-STOP SWITCH OR CONTACTS BETWEEN TERMINALS 3 AND 4 OF -XCSTB. ALARM CONTACTS - CUSTOMER SUPPLIED POWER SUPPLY TO COMMON TB1 OF -ACRB. ALARM OUTPUTS ARE TB8 FOR SYSTEM 1 AND TB7 FOR SYSTEM 2 OF -ACRB. SEE INSTALLATION, OPERATION AND MAINTENANCE MANUAL WHEN OPTIONAL EQUIPMENT IS USED.
  - CHILLER RUN CONTACTS - INDICATE WHEN ANY COMPRESSOR SYSTEM IS RUNNING. CHILLER RUN CONTACTS ARE TB3 AND TB4 OF -ACRB RELAY BOARD.
  - EVAPORATOR PUMP CONTACTS - MAY BE USED TO OPERATE CHILLER EVAPORATOR PUMP IN CONJUNCTION WITH OTHER CONTROLS. EVAPORATOR PUMP CONTACTS ARE TB5 & TB6 OF -ACRB RELAY BOARD.
  - CONTACTS ARE RATED FOR 15VAC. 100VA RESISTIVE LOAD ONLY. LOAD MUST BE SUPPRESSED AT SOURCE BY USER.
  - COOLER INLET REFRIGERANT SENSORS FITTED ONLY ON R-407C CHILLERS. WHEN ISOLATOR IS NOT INSTALLED (OPTIONAL EQUIPMENT) A JUMPER IS INSTALLED TO COMPLETE THE CIRCUIT.

# Application Data

## UNIT LOCATION

Chillers may be placed on the ground floor or upper floor of the building. The floor must be level and capable of supporting 150% of the operating weight of the unit. Units should be located away from noise-critical areas. Service clearance must be allowed and include space for removing cooler or condenser tubes. A doorway or window can sometimes provide space for tube removal. Units should be installed indoors where they are not exposed to rain or water splash. Chillers should be located near a drain. The use of chillers in corrosive, dusty or explosive atmospheres should be avoided unless the unit is properly protected. A unit located in a clean room will run best, require least maintenance, and last longest. Heat or ventilation may be required to maintain the ambient between 40°F and 115°F (4.4°C and 46.1°C).

## UNIT ISOLATION

The chiller foundation must be rigid to reduce vibration transmission to a minimum. All upper story installations should use vibration isolators under the unit base. To maintain isolator efficiency, no mechanical ties should be made to the building. Properly selected flexible connectors and piping isolators are recommended. All the above recommendations will help to reduce vibration transmission and result in a quieter operation.

## FIELD CONNECTED WATER PIPING

Piping must comply in all respects with applicable local plumbing codes and ordinances. In no case should the unit support the weight of connecting piping. Since elbows, tees, and valves increase pressure drop, all piping should be kept as simple as possible. Hand stop valves should be installed where required to facilitate servicing. Piping to the inlet and outlet connections of the cooler and condenser may include high-pressure rubber hose or piping loops to ensure against water pump transmission of vibration.

Facilities should be provided for measuring temperature and pressure in the cooler and condenser field water piping. Drain connections should be provided at all low points to permit complete drainage of the cooler(s), condenser(s), and system piping. This is especially important if the unit is located in an unheated room where freezing could prevail. Water lines subjected to ambient temperatures below freezing may require heater cables or antifreeze (by others).

Water loops should contain provisions for venting. A

strainer, preferably 40 mesh, should be installed in the cooler and condenser inlet lines, and located where it will protect the circulating pump and the heat exchanger tube bundles. It should be determined that the maximum water pressure at the cooler or condenser does not exceed the maximum design working pressure of the cooler or condenser.

The water circulating pumps should be located on the inlet side of the heat exchangers. If, however, space does not permit this, the pumps may be located in the outlet water piping. The net positive suction head must be considered when applying pumps.

## PARALLEL CHILLER APPLICATION

Multiple chillers are often used to provide increased reliability, reserve capacity, or to divide the design capacity. The standard factory packaged chiller is most compatible with parallel chilled liquid flow. Series flow arrangements are less desirable for pre-engineered packaged units due to excessive chilled liquid flow rate and higher pressure drops. YORK recommends that standard package chillers be arranged for parallel chilled liquid flow.

## FIELD WIRING

All field wiring must comply with the National Electric Code and all applicable local codes. YORK liquid

YORK Model YCWS \_\_\_\_\_ Packaged Chiller(s). The (each) unit shall have a cooling capacity of \_\_\_\_\_ tons with Compressor kW when cooling GPM of water from \_\_\_\_\_ °F (°C) to \_\_\_\_\_ °F (°C) and with \_\_\_\_\_ GPM of condensing water entering at \_\_\_\_\_ °F (°C) and leaving at \_\_\_\_\_ °F (°C), and a cooler fouling factor of \_\_\_\_\_ and condenser water fouling factor of \_\_\_\_\_. The water pressure drop shall not exceed \_\_\_\_\_ feet (kPa) of water through the cooler and \_\_\_\_\_ feet (kPa) of water through the condenser. The unit overall dimensions shall not exceed \_\_\_\_\_ feet (mm) \_\_\_\_\_ ins. in length, \_\_\_\_\_ feet (mm) \_\_\_\_\_ ins. in width and \_\_\_\_\_ feet (mm) \_\_\_\_\_ in height. The unit operating weight shall not exceed \_\_\_\_\_ lbs. (Kg).

## GENERAL

The (Each) Packaged Water Cooled Screw Chiller shall be completely factory assembled (in an ISO 9001 registered facility) including all interconnecting refrigerant piping and internal wiring of controls, mounted on a steel base which accommodates the condenser, compressor(s) and evaporator. Operating test shall include operation with water flowing through the evaporator.

Unit shall be painted with Caribbean Blue enamel. The unit shall be shipped with a full operating charge of R-22. The unit shall contain two separate refrigerant circuits, each with a single compressor for standby operation. All units shall be designed and constructed in accordance with the applicable sections of the following: American Society of Heating, Refrigeration and Air Conditioning Engineers ANSI/ASHRAE 15 Safety Code for Mechanical Refrigeration; American Society of Mechanical Engineers ASME Pressure Vessel Code; National Electrical Code/National Fire Protection Association NFPA 70. The unit shall be produced at an ISO 9001 registered facility. All chillers are rated in accordance with ARI Standard 550/590.

## COMPRESSORS

Compressors shall be direct drive, semi-hermetic, rotary twin-screw type, including: internal muffler, temperature actuated, off-cycle heater, terminal box, internal discharge check, discharge and suction shutoff service valves, and precision machined cast iron housing. Design working pressure of entire compressor, suction to discharge, shall be 31 bar (450psig).

Motors shall feature refrigerant suction-gas cooled two-pole accessible hermetic compressor motor, full suction gas flow through a mesh screen, with inherent internal thermal overload protection and external current overload on all three phases. Motor stator shall employ

APT2000 type magnet wire.

Lubrication shall feature external oil separators with no moving or fragile parts, 31 bar (450psig) design working pressure, and UL listing. Refrigerant system differential pressure shall provide oil flow through service replaceable, 0.5 micron, full flow, cartridge type oil filter internal to compressor. Filter bypass, less restrictive media, or oil pump not acceptable.

Compressors shall start at minimum load position. Capacity control range from 100% to 10% of chiller full load using continuous function slide valves, and without hot gas bypass. Step unloading unacceptable. Provide Microprocessor controlled, output pressure regulating capacity control valve to command compressor capacity independent of control valve input pressure and balance compressor capacity with cooling load.

## CAPACITY CONTROL SYSTEM

Continuous function, microprocessor controlled, 3-way proportional Capacity Control Valve provides regulated output pressure independent of valve input pressure for a stable, smooth, and precise match of compressor capacity to cooling load to 10% of chiller capacity.

## COOLER

The cooler shall be a direct expansion shell and tube type with refrigerant in the tubes and liquid to be chilled in the shell. The design working pressure of the cooler shell (liquid) side shall be 150 PSIG for the tube (refrigerant) side. Refrigerant heads shall be removable. The cooler shall be covered with 3/4" flexible closed cell foam insulation (K = 0.25 maximum) to prevent sweating. The cooler shall be constructed and tested in accordance with ASME Code requirements. Vent and drain connections shall be included. The water connections shall be fully accessible and grooved to accept victaulic couplings if used (by others).

## CONDENSER

The condenser is a cleanable thru-tube with steel shell, copper tubes, removable water heads and includes integral subcooling. Refer to PHYSICAL DATA for design working pressures. The shell will be constructed and tested in accordance with section VIII, division 1 of ASME pressure-vessel code. The condenser is equipped with relief valves and will hold the full refrigerant charge for

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each unit. All piping will be ACR copper with brazed joints. The liquid line will include: a shutoff valve with charging port; sightglass with moisture indicator; thermal expansion valve; solenoid valve; and high-absorption removable-core filter drier. The entire suction line and the liquid line between the expansion valve and the cooler will be insulated with flexible, closed-cell, foam insulation.

## **MICROCOMPUTER CONTROL CENTER**

Each unit shall contain a Microcomputer Control Center.

All logic and controls shall be contained within a IP 32 (NEMA 1) cabinet with hinged outer door with positive acting latches. Inside shall be contained the "user friendly" and interactive inputs and outputs as follows: LCD display with light emitting diode back lighting for easy viewing of data and input buttons for DISPLAY (temperatures, pressure, etc.). ENTRY (enter/cancel inputs, advance day, change AM/PM), SETPOINTS (change), CLOCK (set time and schedule), PRINT (calling up operating and shutdown data), PROGRAM (change inputs from special conditions such as brine chilling) and UNIT ON/OFF.

The Microcomputer Control Center shall be capable of displaying the following: return and leaving liquid temperature; return and leaving condenser water temperature (optional); low leaving liquid temperature cutout setting; system 1 and 2 percent full-load motor current and suction, discharge (optional) and oil differential pressures;

liquid pulldown control range (selectable for 0.6°C to 1.1° C [1°F to 2°F] in one-tenth increments above the setpoint); liquid pull-down rate sensitivity (0.3°C to 3.0°C [0.5°F to 5°F]/minute in 0.05°C [0.1°F] increments); anti-recycle timer status; compressor run status; no cooling load condition; day; date; time; out of range message; daily and holiday scheduling of start/stop times; automatic or manual lead/lag status; lead compressor definition; number of compressor starts and running hours; status of hot gas bypass valves (option), liquid line solenoid valves, and water pump; last three fault shutdowns data; number of unloading steps; compressor load and unload timer status.

The operating program shall be stored in nonvolatile memory (EPROM) to eliminate chiller failure due to AC power failure/battery discharge. Programmed set-points are retained in lithium battery – backed RTC memory for 5 years minimum.

Provisions shall be included for: pumpdown at shutdown and recycling pumpdown; a hard copy printout from a printer (by others) via an RS-232 electrical output; two steps of demand load limiting and remote chilled liquid reset from an external building automation system; unit alarm contacts; chilled water pump or remote air-cooled condenser control; or Remote Control with printout capability (up to 2000 feet) via an RS-485 electrical output.











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