

# It's All about Building a Better Product for Our Clients!





**J&M Fluidics, Inc.** 851 Tech Drive Telford, PA 18969

Due to J&M Fluidics policy of continuous product improvement, J&M reserves the right to make changes without notice.
Concept drawings in this booklet are representations of the equipment shown.
Contact the factory for specific unit drawings.

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Our reputation is built on our commitment to excellence, advanced controls, user-friendly touch screen interface and our ability to custom build units exactly matched to your process application. Your Satisfaction is what Drives Us!



Aquariums



Laser Cooling



Ice Skating Rinks

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#### TYPICAL J&M CHILLER APPLICATIONS

### Commercial, Industrial & Residential Cooling Applications

- Air Conditioning
- Oil
- · Injection Molding
- Plating Process
- · Welding Machine
- · Computer Room Air Conditioning
- Laser
- Dry Cleaning Machine
- Jacket Cooling
- Water-Cooled Condenser
- Printing Processing
- Swimming Pools
- Aguariums
- Fish Hatcheries
- · Ice skating Rinks
- Commercial Ship Cooling Applications
- Low Temperature Process
- Plastics & Rubber Industries
- Military
- Anodizing Process Cooling
- Semiconductor Cooling
- Chemical
- Energy
- Plasma Cooling
- · Data Center Cooling
- Cold Storage
- Extrusion Cooling
- Custom Cooling Inovation

## Food & Beverage Industry Applications

- Bakery Processing
- Brewery
- Winery
- · Drinking Water Fountain
- Batch Cooling
- Ice Machine Pre-Cool
- Fruit and Vegetable Washing and Processing
- Candy Manufacturing
- Dairy Cooling
- Soft Drink/Beverage Cooling

## Medical & Pharmaceutical Applications

- M.R.I. Imager Cooling
- Operating Room Air Conditioning
- P.E.T. Scan
- · C.A.T. Scan
- · Lab Cooling
- Hypothermia Pads and Blankets
- Pharmaceutical Process Cooling

Have Questions... Give Us a Call, We are Here to Help!



Dairy Cooling / Beverage Cooling



Winery & Brewery Process Cooling



Lab Cooling



M.R.I. Imager Cooling

#### **COMPANY MISSION AND CAPABILITIES**

#### JEM Fluidics Mission...

Our Mission is to Build the Best Equipment for Our Customers' Needs and Requirements. The J&M Fluidics Label on Our Chillers Stands for **Our Commitment to Excellence**. Our Business is Built on Outstanding After-the-Sale Technical Support and Friendly Customer Service. J&M Fluidics offers quality process fluid chillers built in the U.S. by Americans that are designed, manufactured, and delivered by quality people.



**J&M Fluidics**, **Inc.** is committed to serving our clients' application needs with innovative, high-quality process chillers, tank and pump skids, custom fluid cooling solutions and economizer products. Our products are built to support a large variety of applications with a diverse product line.

#### What We Build:

- · Air-Cooled Scroll Process Chillers
- Air-Cooled <u>Digital</u> Scroll Process Chillers
- Air-Cooled Semi-Hermetic Process Chillers
- Portable Air & Water-Cooled Process Chillers
- Water-Cooled Scroll Process Chillers
- Water-Cooled Semi-Hermetic Process Chillers
- Custom / OEM / Private Label Process Chillers

Water-Cooled Semi-Hermetic Chillers

- Tank & Pump Packages
- City Water Change-Over Panels







To compli

Air-Cooled Semi-Hermetic Chillers

> PZA22DF5 Air-Cooled Chiller

To compliment our complete line of standard products that J&M Fluidics Inc. offers, we also have the ability and resources to **custom design** and build equipment to a customers specific needs. **Please contact** the factory or your J&M Fluidics representative for a special application.

the factory or your J&M Fluidics repre for a special ap J&M Fluidics offers "F-Coated" Condenser Coil

J&M Fluidics offers

"E-Coated" Condenser Coils
for Exceptional Protection
Against Corrosive Environments.



We also offer

Custom Color

and Private Label Chillers

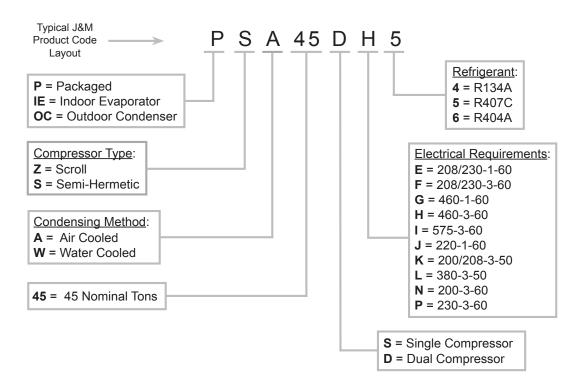


J&M Fluidics offers
Remote Access...
Complete Touchscreen
Control of the Chiller
from anywhere in Your Facility.

City Water Change-Over Panels for Extra Cooling Protection for Your Process.



#### NOMENCLATURE



#### HOW TO PROPERLY SELECT AN AIR-COOLED PACKAGED CHILLER...

#### Caution



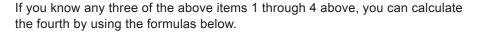
Low ambient, or lower leaving water temperatures, can require the recirculation of glycol solutions or other fluid blends.

These solutions can effect unit capacities.

Please consult the factory on these or other special applications for proper chiller and component sizing.

## To properly select an Air-Cooled Packaged Chiller, the following information must be known:

- 1. The required cooling capacity, BTUH.
- 2. Delta T of entering and leaving fluid temperatures.
- 3. Fluid factor (ex. water = 500).
- 4. GPM of process fluid to be circulated.
- **5.** Design ambient air temperature.



#### For 100% water:

- Cooling capacity (in BTUH) = GPM x Delta T x 500
- GPM = Capacity (in BTUH) / Delta T x 500
- Delta T = Capacity (in BTUH) / GPM x 500

#### Sample selection:

Select an air-cooled, packaged chiller to cool 108 GPM of 100% water from 54°F to 44°F. Design ambient air temperature 95°F. Find: Air-cooled chiller model.

#### Solution:

- 1. Chilled fluid Delta T = 54°F 44°F = 10°F
- 2. Capacity (in BTUH) = 108 GPM x 10°F Delta T x 500 = 540,000 BTUH
- **3.** From the PSA chiller capacity tables, it can be determined that the PSA45D has the capacity to meet the requirements.

Need Help... Just Give Us a Call... We are Here to Help!



# **16D - 88D** Semi-Hermetic, Air-Cooled Chillers





| Chiller | Compressor     | LWT |       | 80    |      |      | 90    |      |       | 95    |      |      | 100   |     |      | 105   |     |
|---------|----------------|-----|-------|-------|------|------|-------|------|-------|-------|------|------|-------|-----|------|-------|-----|
| Model   | Model          | °F  | TONS  | KW    | EER  | TONS | KW    | EER  | TONS  | KW    | EER  | TONS | KW    | EER | TONS | KW    | EER |
|         |                | 42  | 17.8  | 15.8  | 10.5 | 16.5 | 17.4  | 9.0  | 15.9  | 18.1  | 8.3  | 15.2 | 18.9  | 7.8 | 14.6 | 19.6  | 7.2 |
|         |                | 44  | 18.6  | 15.9  | 10.9 | 17.3 | 17.5  | 9.3  | 16.6  | 18.2  | 8.6  | 15.9 | 19.0  | 8.1 | 15.3 | 19.7  | 7.5 |
| 16D     | 3DA3R10ME      | 45  | 19.0  | 15.9  | 11.1 | 17.7 | 17.6  | 9.5  | 16.9  | 18.3  | 8.8  | 16.3 | 19.1  | 8.2 | 15.6 | 19.8  | 7.6 |
|         |                | 50  | 21.2  | 16.0  | 12.3 | 19.7 | 17.8  | 10.5 | 18.9  | 18.7  | 9.6  | 18.2 | 19.6  | 8.9 | 17.4 | 20.4  | 8.2 |
|         |                | 42  | 21.1  | 18.6  | 10.9 | 19.7 | 20.5  | 9.3  | 18.9  | 21.4  | 8.6  | 18.2 | 22.3  | 7.9 | 17.4 | 23.1  | 7.4 |
| 100     | 2DD2D42ME      | 44  | 22.0  | 18.7  | 11.4 | 20.5 | 20.7  | 9.7  | 19.8  | 21.6  | 9.0  | 19.0 | 22.5  | 8.3 | 18.3 | 23.4  | 7.7 |
| 19D     | 3DB3R12ME      | 45  | 22.5  | 18.7  | 11.6 | 21.2 | 20.7  | 9.9  | 20.2  | 20.7  | 9.2  | 19.4 | 22.7  | 8.5 | 18.7 | 23.6  | 7.9 |
|         |                | 50  | 25.0  | 18.8  | 12.8 | 23.3 | 21.0  | 10.8 | 22.4  | 22.1  | 10.0 | 21.3 | 23.2  | 9.2 | 20.7 | 24.2  | 8.5 |
|         |                | 42  | 24.8  | 23.1  | 10.7 | 22.9 | 25.2  | 9.2  | 22.1  | 26.2  | 8.5  | 21.2 | 27.2  | 7.9 | 20.3 | 28.2  | 7.3 |
| 22D     | 3DF3R15ME      | 44  | 25.8  | 23.3  | 11.1 | 24.0 | 25.5  | 9.5  | 23.0  | 26.6  | 8.8  | 22.1 | 27.6  | 8.2 | 21.2 | 28.6  | 7.6 |
| 220     | ODI OITTOWIL   | 45  | 26.4  | 23.3  | 11.3 | 24.5 | 24.6  | 9.6  | 23.5  | 26.7  | 9.0  | 22.6 | 27.8  | 8.3 | 21.7 | 28.8  | 7.7 |
|         |                | 50  | 29.4  | 23.7  | 12.4 | 27.3 | 26.2  | 10.5 | 26.2  | 27.4  | 9.7  | 25.1 | 28.6  | 8.9 | 24.1 | 29.8  | 8.3 |
|         |                | 42  | 28.0  | 25.8  | 10.3 | 26.0 | 28.3  | 8.9  | 25.1  | 29.4  | 8.3  | 24.2 | 30.6  | 7.7 | 23.3 | 31.7  | 7.2 |
| 25D     | 3DS3R17ME      | 44  | 29.3  | 26.0  | 10.7 | 27.2 | 28.5  | 9.2  | 26.2  | 29.8  | 8.6  | 25.3 | 31.0  | 8.0 | 24.3 | 32.2  | 7.4 |
| 200     | ODGOITTIME     | 45  | 30.7  | 26.1  | 10.9 | 27.8 | 28.7  | 9.4  | 26.8  | 29.9  | 8.7  | 25.8 | 31.2  | 8.1 | 24.8 | 32.4  | 7.5 |
|         |                | 50  | 33.2  | 26.4  | 12.0 | 30.8 | 29.2  | 10.2 | 29.6  | 30.6  | 9.5  | 28.5 | 32.0  | 8.8 | 27.4 | 33.3  | 8.1 |
|         |                | 42  | 35.7  | 33.9  | 10.0 | 32.5 | 36.7  | 8.5  | 31.0  | 38.1  | 7.9  | 29.5 | 39.4  | 7.3 | 28.1 | 40.8  | 6.7 |
| 33D     | 4DBNR20ME      | 44  | 37.3  | 34.2  | 10.4 | 34.2 | 37.2  | 8.8  | 32.5  | 38.6  | 8.2  | 31.0 | 40.0  | 7.6 | 29.4 | 41.4  | 7.0 |
| 330     |                | 45  | 38.2  | 34.3  | 10.6 | 34.8 | 37.4  | 9.0  | 33.3  | 38.8  | 8.3  | 31.8 | 40.2  | 7.7 | 30.2 | 41.6  | 7.1 |
|         |                | 50  | 42.7  | 34.7  | 11.7 | 39.2 | 38.1  | 9.9  | 37.5  | 39.7  | 9.2  | 35.7 | 41.4  | 8.4 | 34.0 | 42.8  | 7.8 |
|         | 4DHNR22ME      | 42  | 41.0  | 37.5  | 10.6 | 36.8 | 40.2  | 9.0  | 34.8  | 41.4  | 8.3  | 32.8 | 42.6  | 7.6 | 31.1 | 43.8  | 7.0 |
| 37D     |                | 44  | 43.2  | 38.0  | 11.0 | 38.7 | 40.8  | 9.3  | 36.5  | 42.0  | 8.6  | 34.3 | 43.4  | 7.8 | 32.5 | 44.6  | 7.2 |
| 370     |                | 45  | 44.2  | 38.3  | 11.2 | 39.5 | 41.0  | 9.5  | 37.3  | 42.4  | 8.7  | 35.2 | 43.6  | 8.0 | 33.3 | 44.8  | 7.4 |
|         |                | 50  | 50.2  | 40.8  | 12.3 | 44.7 | 42.6  | 10.3 | 42.0  | 44.0  | 9.5  | 39.5 | 45.4  | 8.7 | 37.2 | 46.6  | 8.0 |
|         |                | 42  | 50.8  | 48.0  | 10.7 | 46.8 | 51.6  | 9.2  | 45.2  | 53.4  | 8.6  | 43.8 | 55.4  | 8.1 | 42.7 | 57.4  | 7.6 |
| 45D     | 6DBNR32ME      | 44  | 52.8  | 48.2  | 11.0 | 48.8 | 52.2  | 9.5  | 47.2  | 54.2  | 8.9  | 45.8 | 56.2  | 8.3 | 44.7 | 58.4  | 7.8 |
| 430     | ODDIVINOZIVIE  | 45  | 53.8  | 48.4  | 11.2 | 49.8 | 52.4  | 9.7  | 49.0  | 54.4  | 9.0  | 46.7 | 56.6  | 8.5 | 45.7 | 58.8  | 8.0 |
|         |                | 50  | 58.5  | 48.8  | 12.1 | 54.3 | 53.4  | 10.4 | 52.8  | 55.8  | 9.7  | 51.5 | 58.4  | 9.1 | 50.5 | 61.0  | 8.6 |
|         |                | 42  | 59.7  | 60.4  | 9.8  | 56.0 | 63.6  | 8.7  | 54.5  | 65.8  | 8.2  | 53.3 | 68.0  | 7.8 | 52.5 | 70.2  | 7.5 |
| 55D     | 6DGNR37ME      | 44  | 62.2  | 60.0  | 10.1 | 58.3 | 64.4  | 9.0  | 56.8  | 66.8  | 8.4  | 55.7 | 69.0  | 8.0 | 54.8 | 71.4  | 7.7 |
| 330     | ODGINIC37 IVIL | 45  | 63.5  | 60.2  | 10.3 | 59.5 | 64.8  | 9.1  | 58.0  | 67.2  | 8.6  | 56.7 | 69.6  | 8.1 | 55.8 | 72.0  | 7.8 |
|         |                | 50  | 70.0  | 61.0  | 11.3 | 65.3 | 66.4  | 9.8  | 63.5  | 69.2  | 9.2  | 62.2 | 72.0  | 8.6 | 61.2 | 74.8  | 8.2 |
|         |                | 42  | 74.7  | 65.6  | 11.3 | 67.8 | 71.0  | 9.6  | 64.2  | 73.8  | 8.7  | 60.3 | 76.6  | 7.9 | 56.3 | 79.6  | 7.2 |
| 000     | CD INID 40ME   | 44  | 78.7  | 66.4  | 11.8 | 71.8 | 71.8  | 10.0 | 68.0  | 74.8  | 9.1  | 64.0 | 77.8  | 8.3 | 59.8 | 81.0  | 7.5 |
| 62D     | 6DJNR40ME      | 45  | 80.7  | 66.8  | 12.0 | 73.7 | 72.4  | 10.2 | 69.8  | 75.2  | 9.4  | 65.7 | 78.4  | 8.5 | 61.5 | 81.6  | 7.7 |
|         |                | 50  | 90.2  | 78.6  | 13.1 | 82.8 | 74.4  | 11.2 | 78.8  | 77.6  | 10.3 | 74.3 | 80.8  | 9.4 | 69.8 | 84.4  | 8.5 |
|         |                | 42  | 78.3  | 78.0  | 10.2 | 73.2 | 84.8  | 8.9  | 70.7  | 88.2  | 8.3  | 68.0 | 91.4  | 7.7 | 65.5 | 94.6  | 7.2 |
| 710     | 8DD3D56M       | 44  | 81.6  | 78.8  | 10.6 | 76.3 | 85.8  | 9.2  | 73.6  | 89.4  | 8.5  | 71.0 | 92.8  | 8.0 | 68.3 | 96.0  | 7.4 |
| 71D     | 8DP3R56M       | 45  | 83.3  | 79.2  | 10.7 | 78.0 | 86.4  | 9.3  | 75.2  | 89.8  | 8.7  | 72.5 | 93.4  | 8.1 | 69.7 | 96.8  | 7.5 |
|         |                | 50  | 92.3  | 80.6  | 11.7 | 86.3 | 88.6  | 10.1 | 83.3  | 92.4  | 9.4  | 80.4 | 96.2  | 8.7 | 77.4 | 100.0 | 8.1 |
|         |                | 42  | 94.3  | 100.0 | 9.9  | 88.2 | 107.4 | 8.7  | 85.2  | 111.0 | 8.1  | 82.3 | 114.6 | 7.6 | 79.4 | 117.8 | 7.2 |
| 88D     | 8DS3R67M       | 44  | 98.2  | 101.0 | 10.2 | 92.0 | 109.0 | 8.9  | 88.8  | 112.6 | 8.4  | 85.9 | 116.2 | 7.9 | 82.9 | 119.8 | 7.3 |
| עטט     | ODOSINO/ IVI   | 45  | 100.3 | 101.6 | 10.3 | 93.8 | 109.6 | 9.1  | 90.7  | 113.4 | 8.5  | 87.6 | 117.2 | 8.0 | 84.6 | 120.8 | 7.4 |
|         |                | 50  | 110.5 | 104.0 | 11.1 | 95.7 | 113.0 | 9.7  | 100.1 | 117.2 | 9.1  | 96.8 | 121.4 | 8.5 | 93.7 | 125.7 | 7.9 |

<sup>1.</sup> Capacities on this chart are based on refrigerant R407C. Lower leaving water or low ambient can require the use of a glycol solution or other fluid blends. These solutions affect unit capacities. Please consult the factory on these or other special fluids.

<sup>2.</sup> KW input is for compressor(s) only.

<sup>3.</sup> EER = Energy Efficiency Ratio (BTU/watt-hour). Power inputs include compressor (s), condenser fan motor (s) and control power.



#### J&M - Touch Screen User Interface



## Touch Screen Key Chiller Control Features:

- USB update slot for IN-PLACE HMI and PLC software updates available from jmchillers.com
- Free Software Upgrades
- CE, UL Listed
- Monitor / Control your chiller from anywhere\*
- · 4gb SD card in slot for data storage Standard
- · Ultra bright display screen with auto screen saver
- Real-time Pressure and Temperature readings
- Automatic COMPRESSOR Lag/Lead with FIVE operational modes
- Automatic SYSTEM PUMP Lag/Lead with FIVE operational modes
- Factory configured for ALL J&M's chiller options



Control Panel Shown for Model: PSA45DH6B



(PLC)
Pentra Logic
Controller

#### Other Touchscreen User Interface Examples...

(Inside Mounted)

**Touchscreen** 

**Control Monitor** 



Alarm Status Screen 1



Alarm Status Screen 2



Compressor Operation Status and Pressures



Operational Data and Fault Log

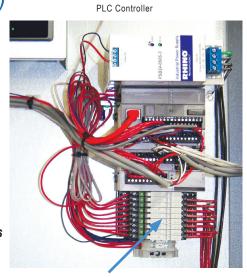
J&M - Pentra Microsmart, Programable Logic Controller (PLC)

#### Best-In-Class PLC available for ALL J&M production chiller models.

Factory installed and programmed into your next J&M Process Chiller. The Pentra PLC will seamlessly interface with our HMI touch screen.

#### Pentra Key features include:

- · CE, UL Listed
- Highly accurate and fast performance
- Embedded Ethernet Port
- Modbus (Slave) TCP, RTU and ASCII for integration with most Building Automation Systems (BAS)
- Optional BacNet and LONWORKS communication protocols via third party gateway hardware
- Expandable I/O, ideal for custom chiller control projects
- I/O status indicators on for easy diagnostics

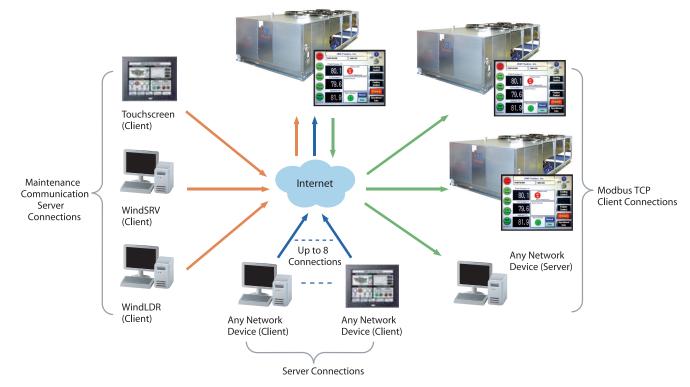


"Plugin" Control Relays for quick easy replacement. No circuit board to replace. Less downtime and cost.

#### Offering Extended Connectivity Options...

#### **Up to 14 Simultaneous Connections!**

Using Maintenance Communication Server connections, up to 3 Client devices, such as OI touchscreen, WindLDR software and SCADA OPC server such as WindSRV (KepServerEx), can simultaneously communicate with your MicroSmart Pentra PLC. Using Server Connections, an additional 8 connections can be established and each connection can be defined as Maintenance, User Communication or Modbus TCP server protocol. On top of that, another 3 connections can be configured as Modbus TCP client protocol, with a maximum of 255 requests. Each request can be for different slave devices with different IP addresses on the network.



IMPORTANT CONSIDERATION: J&M offers an optional Level 3 managed switch allowing MODBUS connectivity to the Pentra MicroSmart PLC controller. In most cases, end users firewall settings will need to be updated to allow remote WAN connectivity. J&M Fluidics can provide fee based network support for special Level 3 switch configuration.

Idec Touchscreen

Brazed Plate Evaporator

Accumulator



#### Packaged & Split System Air-Cooled Chillers

#### **Standard Features** (All Models):

- ETL listed to UL1995 & CAN/CSA C22.2
   No. 236-11, 4th edition, 10/14/2011
- Single point power connection
- Idec microprocessor controller with easy to use touch screen display
- STAINLESS STEEL, brazed plate evaporator
- Scroll compressor with crankcase heater
- Suction accumulator
- Water flow switch
- 24V control transformer
- · Direct drive condenser fan motor
- Rust resistant, high CFM, aluminum condenser fan blade
- Condenser(s): copper tube/aluminum fin
- · Compressor motor contactor
- · Condenser motor and control circuit fusin
- Painted (Powder Coated), galvanized sheet metal cabinet
- 1/2" insulation on all water and Low pressure refrigerant lines
- · Liquid line drier, sight glass, solenoid, TXV
- Complete refrigerant charge from factory

#### **Tank Models Only:**

- **STAINLESS STEEL** storage tank with 1/2" insulation
- Fused, STAINLESS STEEL re-circulation pump for tank operation with ball valve and cleanable strainer
- Tank pressure relief valve, vent and drain hose bibs

#### **Split System Models Only:**

- Outdoor Condenser Section
- Discharge and Liquid Line ball valves on indoor and outdoor equipment



Water Flow Switch

## Available Options (All Models): Remote Idea touchscreen

- control panel
- Industrial VPN Router
- 5 Port Ethernet Switch
- BacNet Gateway
- Pump VFD controller
- 4 year extended compressor warranty
- · Casters (factory mounted)
- 115 volt (rain tight) service outlet
- Non Fused disconnect
- Phase monitor, line voltage monitor offering protection against phase loss/reversal, unbalance and hi/lo voltage
- Compressor fusing
- Fan cycle control (+40°F)
- Flooded condenser with receiver/ head pressure control (0°F)
- Heated, flooded condenser with receiver/ head pressure control (-20°F)
- Factory installed evaporator heat tape freeze protection
- Low flow by-pass valve
- Fused, STAINLESS STEEL process pump
- Dual system pump with manual changeover
- Dual system pump with auto changeover
- Pump suction isolation valve
- · Water pressure gauge set
- · Water flow meter
- Copper finned condenser coil (coastal protection)
- E-Coat condenser coil (coastal protection)
- · Water flow meter
- · Auto city water make up solenoid
- · Auto city water changeover panel with filter
- Stainless steel, SCH80 PVC or Polypropylene piping for deionized and reverse osmosis water systems

#### Tank Models Only:

- Storage Tank Sight Glass
- Tank low liquid level indicator



Remote Idec Control Panel



5 Port Ethernet Switch



BacNet Gateway



VFD Controller



Industrial VPN Router



Disconnect Switch



# Dual Circuit Packaged Semi-Hermetic, Air-Cooled Chillers

| Chiller  | Nominal     | Length | Width  | Height | Fluid    |      | Com  | pressor        | RLA   | LRA  | Far  | n Motor | MCA | M.O.P. | Chiller |  |  |  |  |       |     |  |   |     |     |  |
|----------|-------------|--------|--------|--------|----------|------|------|----------------|-------|------|------|---------|-----|--------|---------|--|--|--|--|-------|-----|--|---|-----|-----|--|
| Model    | BTUH @ 44°F | Inches | Inches | Inches | Conn.    | Qty. | HP   | Model          | Ea.   | Ea.  | Qty. | FLA ea. | MCA | M.O.P. | WT LBS  |  |  |  |  |       |     |  |   |     |     |  |
| PSA16DF5 |             |        |        |        |          |      |      |                | 36.8  | 215  |      | 7       | 100 | 125    |         |  |  |  |  |       |     |  |   |     |     |  |
| PSA16DH5 | 199,200     | 176.5  | 45     | 55     | 2" FPT   | 2    | 8    | 3DA3R10ME      | 17.9  | 106  | 2    | 3.5     | 50  | 60     | 3200    |  |  |  |  |       |     |  |   |     |     |  |
| PSA16DI5 |             |        |        |        |          |      |      |                | 14.7  | 84   |      | 2.8     | 40  | 50     | 1       |  |  |  |  |       |     |  |   |     |     |  |
| PSA19DF5 |             |        |        |        |          |      |      |                | 39.1  | 215  |      | 7       | 110 | 140    |         |  |  |  |  |       |     |  |   |     |     |  |
| PSA19DH5 | 237,600     | 176.5  | 45     | 55     | 2" FPT   | 2    | 10   | 3DB3R12ME      | 17.9  | 106  | 2    | 3.5     | 50  | 60     | 3500    |  |  |  |  |       |     |  |   |     |     |  |
| PSA19DI5 |             |        |        |        |          |      |      |                | 14.8  | 84   |      | 2.8     | 40  | 50     |         |  |  |  |  |       |     |  |   |     |     |  |
| PSA22DF5 | 276.000     | 176.5  | 45     | 55     | 2" FPT   | 2    | 12.5 | 3DF3R15ME      | 43.2  | 275  | - 2  | 7       | 125 | 150    | 3700    |  |  |  |  |       |     |  |   |     |     |  |
| PSA22DH5 | 276,000     | 170.5  | 45     | 55     | 2 FPI    | 2    | 12.5 | 3DF3K15IVIE    | 21.2  | 138  |      | 3.5     | 60  | 70     | 3700    |  |  |  |  |       |     |  |   |     |     |  |
| PSA25DF5 |             |        |        |        |          |      |      |                | 53.5  | 275  |      | 7       | 150 | 175    |         |  |  |  |  |       |     |  |   |     |     |  |
| PSA25DH5 | 314,400     | 230    | 45.5   | 55     | 2" FPT   | 2    | 15   | 3DS3R17ME      | 26.0  | 138  | 3    | 3.5     | 70  | 90     | 4000    |  |  |  |  |       |     |  |   |     |     |  |
| PSA25DI5 |             |        |        |        |          |      |      |                | 21.2  | 110  | 1    | 2.8     | 60  | 70     | 1       |  |  |  |  |       |     |  |   |     |     |  |
| PSA33DF5 |             |        |        |        |          |      |      |                | 76.9  | 374  |      | 7       | 225 | 250    |         |  |  |  |  |       |     |  |   |     |     |  |
| PSA33DH5 | 390,000     | 180    | 89     | 55     | 2" FPT   | 2    | 17   | 4DBNR20ME      | 38.5  | 187  | 4    | 3.5     | 110 | 125    | 4700    |  |  |  |  |       |     |  |   |     |     |  |
| PSA33DI5 |             |        |        |        |          |      |      |                | 30.1  | 135  |      | 2.8     | 80  | 100    |         |  |  |  |  |       |     |  |   |     |     |  |
| PSA37DF5 |             |        |        |        |          |      |      |                | 96.2  | 428  |      | 7       | 250 | 300    |         |  |  |  |  |       |     |  |   |     |     |  |
| PSA37DH5 | 438,000     | 180    | 89     | 55     | 2.5" FPT | 2    | 20   | 4DHNR22ME      | 48.1  | 214  | 4    | 3.5     | 125 | 150    | 4900    |  |  |  |  |       |     |  |   |     |     |  |
| PSA37DI5 |             |        |        |        |          |      |      |                | 34.8  | 172  |      | 2.8     | 90  | 110    |         |  |  |  |  |       |     |  |   |     |     |  |
| PSA45DF5 |             |        |        |        |          |      |      |                |       |      |      |         |     |        |         |  |  |  |  | 122.9 | 565 |  | 7 | 350 | 400 |  |
| PSA45DH5 | 566,400     | 180    | 89     | 55     | 2.5" FPT | 2    | 25   | 6DBNR32ME      | 51.7  | 283  | 4    | 3.5     | 150 | 175    | 5100    |  |  |  |  |       |     |  |   |     |     |  |
| PSA45DI5 |             |        |        |        |          |      |      |                | 44.9  | 230  |      | 2.8     | 125 | 150    |         |  |  |  |  |       |     |  |   |     |     |  |
| PSA55DN5 |             |        |        |        |          |      |      |                | 155.1 | 650  |      | 7       | 400 | 500    |         |  |  |  |  |       |     |  |   |     |     |  |
| PSA55DP5 | 681,600     | 230    | 89     | 57     | 3" FPT   | 2    | 2 30 | 6DGNR37ME      | 141.7 | 594  | 6    | 7       | 400 | 500    | 6000    |  |  |  |  |       |     |  |   |     |     |  |
| PSA55DH5 | 001,000     | 230    | 09     | 31     | JIFI     | 2    |      | ODGINIX37 IVIL | 73.7  | 297  | 0    | 3.5     | 200 | 250    | 0000    |  |  |  |  |       |     |  |   |     |     |  |
| PSA55DI5 |             |        |        |        |          |      |      |                | 51.6  | 245  |      | 2.8     | 150 | 175    |         |  |  |  |  |       |     |  |   |     |     |  |
| PSA62DN5 |             |        |        |        |          |      |      |                | 167.9 | 754  |      | 7       | 450 | 500    |         |  |  |  |  |       |     |  |   |     |     |  |
| PSA62DP5 | 816.000     | 230    | 89     | 57     | 3" FPT   | 2    | 35   | 6DJNR40ME      | 142.3 | 594  | - 6  | 7       | 400 | 500    | 6200    |  |  |  |  |       |     |  |   |     |     |  |
| PSA62DH5 | 010,000     | 200    | 00     | 01     | 0 11 1   | _    | 00   | ODDINI (TOME   | 71.8  | 297  |      | 3.5     | 200 | 250    | 0200    |  |  |  |  |       |     |  |   |     |     |  |
| PSA62DI5 |             |        |        |        |          |      |      |                | 58.3  | 245  |      | 2.8     | 150 | 200    |         |  |  |  |  |       |     |  |   |     |     |  |
| PSA71DF5 |             |        |        |        |          |      |      |                | 161.5 | 1070 |      | 7       | 450 | 600    |         |  |  |  |  |       |     |  |   |     |     |  |
| PSA71DH5 | 883,200     | 230    | 89     | 57     | 4" FPT   | 2    | 50   | 8DP3R56M       | 80.9  | 535  | 6    | 3.5     | 225 | 250    | 6500    |  |  |  |  |       |     |  |   |     |     |  |
| PSA71DI5 |             |        |        |        |          |      |      |                | 67.3  | 405  |      | 2.8     | 175 | 225    |         |  |  |  |  |       |     |  |   |     |     |  |
| PSA88DF5 |             |        |        |        |          |      |      |                | 201.3 | 1070 |      | 7       | 500 | 600    |         |  |  |  |  |       |     |  |   |     |     |  |
| PSA88DH5 | 1,065,600   | 230    | 89     | 57     | 4" FPT   | 2    | 60   | 8DS3R67M       | 100.6 | 535  | 6    | 3.5     | 250 | 300    | 6700    |  |  |  |  |       |     |  |   |     |     |  |
| PSA88DI5 |             |        |        |        |          |      |      |                | 71.8  | 405  |      | 2.8     | 200 | 250    |         |  |  |  |  |       |     |  |   |     |     |  |

<sup>1)</sup> The calculations for the MCA and MOP are based on requirements of NFPA 70, the National Electrical Code (NEC) and CSA C22.1, the Canadian Electrical Code (CEC). The MCA is the minimum wire size needed to guarantee that the wiring will not overheat under any operating conditions. The MOP is the maximum allowable circuit breaker size that will properly disconnect power to the equipment under any anticipated fault condition.

<sup>2)</sup> Weights are based on models with standard features only. Weights will increase with each added option. Consult factory.



# **Dual Circuit Split-System**Semi-Hermetic, Air-Cooled Chillers

| Chiller   | Length | Width   | Height | Water     | Refriç | Conn   |     | Compress | sor         | RLA   | LRA  | Condenser | Fan Mo | tor       |     |        | Chiller |     |     |     |  |
|-----------|--------|---------|--------|-----------|--------|--------|-----|----------|-------------|-------|------|-----------|--------|-----------|-----|--------|---------|-----|-----|-----|--|
| Model     | Inches | Inches  | Inches | Conn.     | Disch  | Liquid | Qty | HP       | Model       | Ea.   | Ea.  | Model     | Qty    | FLA<br>ea | MCA | M.O.P. | WT LBS  |     |     |     |  |
| IESA16DF5 |        |         |        | •         | •      | •      |     | <u> </u> | <u>·</u>    | 36.8  | 215  |           |        | 7         | 100 | 125    |         |     |     |     |  |
| IESA16DH5 | 85     | 34      | 45     | 2" MPT    | 7/8"   | 5/8"   | 2   | 8        | 3DA3R10ME   | 17.9  | 106  | OC16D     | 2      | 3.5       | 50  | 60     | 1050    |     |     |     |  |
| IESA16DI5 | 1      |         |        |           |        |        |     |          |             | 14.7  | 84   |           |        | 2.8       | 40  | 50     |         |     |     |     |  |
| IESA19DF5 |        |         |        |           |        |        |     |          |             | 39.1  | 215  |           |        | 7         | 110 | 140    |         |     |     |     |  |
| IESA19DH5 | 85     | 34      | 45     | 2" MPT    | 1-1/8" | 5/8"   | 2   | 10       | 3DB3R12ME   | 17.9  | 106  | OC19D     | 2      | 3.5       | 50  | 60     | 1100    |     |     |     |  |
| IESA19DI5 |        |         |        |           |        |        |     |          |             | 14.8  | 84   |           |        | 2.8       | 40  | 50     |         |     |     |     |  |
| IESA22DF5 | 0.5    | 0.4     | 00     | OLIMPI    | 4.4/01 | F (OII | 2   | 40.5     | 3DF3R15ME   | 43.2  | 275  | 00000     |        | 7         | 125 | 150    | 1000    |     |     |     |  |
| IESA22DH5 | 85     | 34      | 62     | 2" MPT    | 1-1/8" | 5/8"   | 2   | 12.5     | 3DF3R15ME   | 21.2  | 138  | OC22D     | 2      | 3.5       | 60  | 70     | 1200    |     |     |     |  |
| IESA25DF5 |        |         |        |           |        |        |     |          |             | 53.5  | 275  |           |        | 7         | 150 | 175    |         |     |     |     |  |
| IESA25DH5 | 85     | 34      | 62     | 2" MPT    | 1-1/8" | 5/8"   | 2   | 15       | 3DS3R17ME   | 26.0  | 138  | 0C25D     | 3      | 3.5       | 70  | 90     | 1400    |     |     |     |  |
| IESA25DI5 |        |         |        |           |        |        |     |          |             | 21.2  | 110  |           |        | 2.8       | 60  | 70     |         |     |     |     |  |
| IESA33DF5 |        | 5 34 62 |        |           |        |        |     |          |             |       |      |           |        | 76.9      | 374 |        |         | 7   | 225 | 250 |  |
| IESA33DH5 | 85     |         | 62     | 2" MPT    | 1-3/8" | 7/8"   | 2   | 17       | 4DBNR20ME   | 38.5  | 187  | OC33D     | 4      | 3.5       | 110 | 125    | 1600    |     |     |     |  |
| IESA33DI5 |        |         |        |           |        |        |     |          |             | 30.1  | 135  |           |        | 2.8       | 80  | 100    |         |     |     |     |  |
| IESA37DF5 |        |         |        |           |        |        |     |          |             | 96.2  | 428  |           |        | 7         | 250 | 300    |         |     |     |     |  |
| IESA37DH5 | 85     | 34      | 62     | 2" MPT    | 1-3/8" | 7/8"   | 2   | 20       | 4DHNR22ME   | 48.1  | 214  | OC37D     | 4      | 3.5       | 125 | 150    | 1700    |     |     |     |  |
| IESA37DI5 |        |         |        |           |        |        |     |          |             | 34.8  | 172  |           |        | 2.8       | 90  | 110    |         |     |     |     |  |
| IESA45DF5 |        | 34      |        |           |        |        |     |          |             |       |      | 122.9     | 565    |           |     | 7      | 350     | 400 |     |     |  |
| IESA45DH5 | 110    |         | 62     | 2.5" MPT  | 1-5/8" | 7/8"   | 2   | 25       | 6DBNR32ME   | 51.7  | 283  | OC45D     | 4      | 3.5       | 150 | 175    | 1800    |     |     |     |  |
| IESA45DI5 |        |         |        |           |        |        |     |          |             | 44.9  | 230  |           |        | 2.8       | 125 | 150    |         |     |     |     |  |
| IESA55DN5 |        |         |        |           |        |        |     |          |             | 155.1 | 650  |           |        | 7         | 400 | 500    |         |     |     |     |  |
| IESA55DP5 | 440    | 34      | 62     | 2.5" MPT  | 1-5/8" | 1-1/8" | 2   | 30       | 6DGNR37ME   | 141.7 | 594  | 00550     | 6      | 7         | 400 | 500    | 1900    |     |     |     |  |
| IESA55DH5 | 110    | 34      | 02     | 2.5 IVIP1 | 1-5/8  | 1-1/8  | 2   | 30       | 6DGNR3/WE   | 73.7  | 297  | OC55D     | б      | 3.5       | 200 | 250    | 1900    |     |     |     |  |
| IESA55DI5 |        |         |        |           |        |        |     |          |             | 51.6  | 245  |           |        | 2.8       | 150 | 175    |         |     |     |     |  |
| IESA62DN5 |        |         |        |           |        |        |     |          |             | 167.9 | 754  |           |        | 7         | 450 | 500    |         |     |     |     |  |
| IESA62DP5 | 110    | 34      | 62     | 2.5" MPT  | 1-5/8" | 1-1/8" | 2   | 35       | 6DJNR40ME   | 142.3 | 594  | OC62D     | 6      | 7         | 400 | 500    | 2200    |     |     |     |  |
| IESA62DH5 | 110    | 34      | 02     | 2.5 IVIP1 | 1-5/8  | 1-1/8  | 2   | 30       | 6DJINK4UME  | 71.8  | 297  | UC62D     | О      | 3.5       | 200 | 250    | 2200    |     |     |     |  |
| IESA62DI5 |        |         |        |           |        |        |     |          |             | 58.3  | 245  |           |        | 2.8       | 150 | 200    |         |     |     |     |  |
| IESA71DF5 |        |         |        |           |        |        |     |          |             | 161.5 | 1070 |           |        | 7         | 450 | 600    |         |     |     |     |  |
| IESA71DH5 | 120    | 34      | 68     | 2.5" MPT  | 1-5/8" | 1-1/8" | 2   | 50       | 8DP3R56M    | 80.9  | 535  | OC71D     | 6      | 3.5       | 225 | 250    | 2500    |     |     |     |  |
| IESA71DI5 |        |         |        |           |        |        |     |          |             | 67.3  | 405  |           |        | 2.8       | 175 | 225    |         |     |     |     |  |
| IESA88DF5 |        |         |        |           |        |        |     |          |             | 201.3 | 1070 |           |        | 7         | 500 | 600    |         |     |     |     |  |
| IESA88DH5 | 120    | 34      | 68     | 2.5" MPT  | 2-1/8" | 1-1/8" | 2   | 60       | 60 8DS3R67M | 100.6 | 535  | OC88D 6   | 3.5    | 250       | 300 | 2800   |         |     |     |     |  |
| IESA88DI5 |        |         |        |           |        |        |     |          |             | 71.8  | 405  |           | 2.8    | 200       | 250 |        |         |     |     |     |  |

- 3) See Installation Instruction Manual Refrigerant Chart for additional refrigerant charge needed for extended pipe length.
- 1) The calculations for the MCA and MOP are based on requirements of NFPA 70, the National Electrical Code (NEC) and CSA C22.1, the Canadian Electrical Code (CEC). The MCA is the minimum wire size needed to guarantee that the wiring will not overheat under any operating conditions. The MOP is the maximum allowable circuit breaker size that will properly disconnect power to the equipment under any anticipated fault condition.
- 2 )Weights are based on models with standard features only. Weights will increase with each added option. Consult factory.
- 3) See Installation Instruction Manual Refrigerant Chart for additional refrigerant charge needed for extended pipe length.
- 4) See condenser specification sheet for weight and dimension specifications.

#### **OC DIMENSIONAL & ELECTRICAL SPECS**

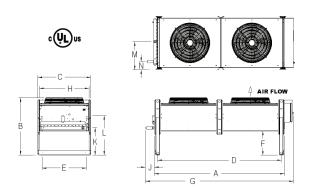


# **Split-System**Outdoor Condenser

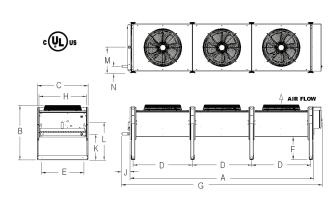
| Model | Length | Width  | Height | Fan Mo | tor | Refriger  | ant Conn. | Weight |
|-------|--------|--------|--------|--------|-----|-----------|-----------|--------|
| Model | Inches | Inches | Inches | Qty    | HP  | Discharge | Liquid    | Pounds |
| OC16D | 127    | 45.56  | 49.13  | 2      | 1.5 | 7/8"      | 5/8"      | 580    |
| OC19D | 127    | 45.56  | 49.13  | 2      | 1.5 | 1 1/8"    | 5/8"      | 630    |
| OC22D | 127    | 45.56  | 49.13  | 2      | 1.5 | 1 1/8"    | 5/8"      | 680    |
| OC25D | 180    | 45.56  | 49.13  | 3      | 1.5 | 1 1/8"    | 5/8"      | 930    |
| OC33D | 127    | 88     | 49.13  | 4      | 1.5 | 1 3/8"    | 7/8"      | 1240   |
| OC37D | 127    | 88     | 49.13  | 4      | 1.5 | 1 3/8"    | 7/8"      | 1340   |
| OC45D | 127    | 88     | 49.13  | 4      | 1.5 | 1 5/8"    | 7/8"      | 1440   |
| OC55D | 180    | 88     | 49.13  | 6      | 1.5 | 1 5/8"    | 1 1/8"    | 1990   |
| OC62D | 180    | 88     | 49.13  | 6      | 1.5 | 1 5/8"    | 1 1/8"    | 1990   |
| OC71D | 180    | 88     | 49.13  | 6      | 1.5 | 1 5/8"    | 1 1/8"    | 2140   |
| OC88D | 180    | 88     | 49.13  | 6      | 1.5 | 2 1/8"    | 1 1/8"    | 2140   |

<sup>1)</sup> Weights are based on models with standard features only. Weights will increase with each added option. Consult factory.

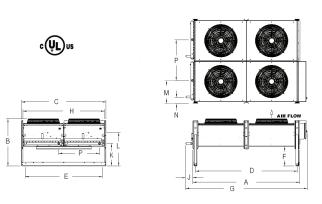




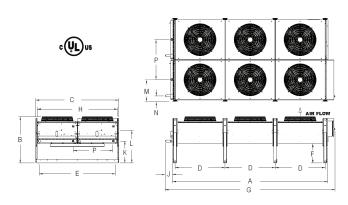
#### OC25D



OC33D, 37D, 45D



OC55D, 62D, 71D, 88D



#### **TANK & PUMP PACKAGE**

#### **Dimensional Specifications, Features and Options**

#### Polyethylene Tank & Pump

| TANK MODEL | LENGTH<br>IN. | WIDTH<br>IN. | HEIGHT<br>IN. | WATER<br>CONN. | TANK CAPACITY | RECIRCULATION PUMP | FLA<br>230/3Ø | FLA<br>460/3Ø | WEIGHT<br>LBS. |
|------------|---------------|--------------|---------------|----------------|---------------|--------------------|---------------|---------------|----------------|
| RRT200     | 88            |              |               | 2" FPT         | 200 GALLONS   | 3HP                | 9.4           | 4.5           | 445            |
| RRT300     | 88            | 56           | 60            | 2.5" FPT       | 300 GALLONS   | 3HP                | 9.4           | 4.5           | 465            |
| RRT500     | 120           | 30           | 60            | 3" FPT         | 500 GALLONS   | 5HP                | 13.7          | 6.5           | 595            |
| RRT600     | 120           | -            |               | 4" FPT         | 600 GALLONS   | 5HP                | 13.7          | 6.5           | 625            |

## (Polyethylene Tank) Standard Features:

- Open Vented Polyethylene tank
- 200, 300, 500, & 600 gallon open-vented tank sizes
- 1/2" tank and fluid piping insulation
- SCH80 PVC and Polypropylene piping
- Fused evaporator fluid re-circulating STAINLESS STEEL pump
- Chiller evaporator pump discharge ball valve and cleanable "Y" strainer
- Control box with pump terminal block
- · Galvanized steel sheet metal cabinet
- Hinged removable access panels



(Polyethylene Tank) 600 Gallon Tank & Pump Package with Dual Process Pumps

#### **Available Options:**

- Fused, STAINLESS STEEL process pump
- · Dual process pump with manual changeover
- · Dual process pump with auto changeover
- · Pump suction isolation valve
- Process Pump VFD Controller
- · Tank fluid sight glass
- Tank liquid level indicator with dry contacts
- · Low flow by-pass valve
- · Water flow meter
- · Auto city water make up solenoid
- 1" tank and piping insulation in lieu of 1/2"
- · Seal-tight electrical conduit and connections

Indside View: Model: RRT600H, Dual Vertical 10 HP Process Pumps



| PROPYLENE GLYCOL CAPACITY CORRECTION FACTOR TABLE |         |          |           |           |       |       |       |  |  |  |  |  |  |  |
|---|---------|----------|-----------|-----------|-------|-------|-------|--|--|--|--|--|--|--|
|   |         |          |           |           |       |       |       |  |  |  |  |  |  |  |
| PERCENT PROPYLENE GLYCOL BY WEIGHT                | 15%     | 20%      | 25%       | 30%       | 35%   | 40%   | 50%   |  |  |  |  |  |  |  |
| FREEZING POINT IN °F                              | 24      | 18       | 15        | 9         | 5     | -5    | -30   |  |  |  |  |  |  |  |
| CAPACITY FACTOR MULTIPLIER*                       | 0.992   | 0.986    | 0.972     | 0.960     | 0.950 | 0.928 | 0.878 |  |  |  |  |  |  |  |
| PRESSURE DROP MULTIPLIER                          | 1.04    | 1.08     | 1.13      | 1.21      | 1.26  | 1.47  | 2.79  |  |  |  |  |  |  |  |
|   |         |          |           |           |       |       |       |  |  |  |  |  |  |  |
| ETHYLENE GLYCOL                                   | CAPACIT | Y CORREC | CTION FAC | CTOR TABI |       |       |       |  |  |  |  |  |  |  |
|   |         |          |           | I         |       |       |       |  |  |  |  |  |  |  |
| PERCENT ETHYLENE GLYCOL BY WEIGHT                 | 10%     | 15%      | 20%       | 25%       | 30%   | 35%   | 40%   |  |  |  |  |  |  |  |
| FREEZING POINT IN °F                              | 25      | 21       | 17        | 11        | 5     | 0     | -10   |  |  |  |  |  |  |  |
| CAPACITY FACTOR MULTIPLIER*                       | 0.98    | 0.96     | 0.95      | 0.93      | 0.92  | 0.91  | 0.89  |  |  |  |  |  |  |  |
| PRESSURE DROP MULTIPLIER                          | 1.08    | 1.11     | 1.16      | 1.21      | 1.27  | 1.32  | 1.38  |  |  |  |  |  |  |  |

<sup>\*</sup> At standard ARI 590 conditions: 54°F entering fluid temperature, 44°F leaving fluid temperature, 95°F ambient temperature, 0.0005 fouling.



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