**Job Name: FTLB Chillers**

**Date: 1/24/2013**

**Version: 08.20**

**WSC087– Tech Data**

**Submitted By: Rob Robinett**

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| **Unit Description:** |

Model Number: WSC087MBD40R/E2612-BE-2\*\*/C2212-CLYY-2\*\*\*\*\*/R134-BAABM

Approval: ETL Listed / ETL Listed to Canadian Safety Standards (ETL Label / ETLc Label)

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| **Chiller Data:** | | |
| **Unit:** | Compressor Type / Quantity - Size: | Centrifugal / 1 - 087 |
|  | Capacity (ton): | 450.0 |
|  | Capacity Control: | Inlet guide vanes |
|  | Refrigerant: | R134-a |
|  | Refrigerant Charge (lb): | 854 |
|  | Oil Cooler Type: | Water cooled |
|  | ASHRAE 90.1 Compliancy: | '10 |
| **Evaporator:** | Flow (gpm): | 675.2 |
|  | LWT (°F): | 45.0 |
|  | Number of Passes: | 2 |
|  | Fouling Factor (°F.ft².h/Btu): | 0.00010 |
|  | Tube Material: | Cu |
|  | Tube Wall Thickness (in): | 0.025 |
|  | Percentage of Water: | 100 |
|  | Minimum Flow (gpm): (*see note 3*) | 217.4 |
| **Condenser:** | Flow (gpm): | 900.0 |
|  | EWT (°F): | 80.0 |
|  | Number of Passes: | 2 |
|  | Fouling Factor (°F.ft².h/Btu): | 0.00025 |
|  | Tube Material: | Cu |
|  | Tube Wall Thickness (in): | 0.025 |
|  | Percentage of Water: | 100 |
| **Motor/Starter:** | Starter Type: | VFD/UM (037RMA) |
|  | Unit Voltage (V/Hz/Ph): | 460/60/3 |
|  | Approval Listing: | ETL, ETLc |
|  | RLA per Compressor (A): | 371 |
|  | LRA per Compressor (A): | 2,540 |
|  | Enclosure Type: | NEMA 1 gasketed |
|  | Starter Location: | Unit mounted |
|  | Disconnect Type: | Non-Fused Disconnect |
|  | Control Circuit Transformer: | Without taps |
|  | Meter: | None |
|  | Phase/Voltage Protection: | Yes |
|  | Lightning Arrestors: | None |
|  | Power Factor: | 0.96 |
|  | Power Factor Correction (kVAR): | Inherent |
|  | Corrected Power Factor: | 0.96 |
|  | MCA (A) / MOCP (A): | 469/655 |
|  | Motor Protection: | Standard |
|  | Surge capacitor: | No |
|  | Ground Fault: | None |
|  | Auxiliary Control Relay: | None |
|  | Shipped Loose Bracket/Cable Kit: | No |
|  | Indicator Lights: | None |
|  | Inrush value (A): | 445 |

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| **Design Performance rated at AHRI Condenser Relief:** | | | | | | | | | | | |
|  |  |  |  |  |  |  |  | **Evapo** | **rator** | **Cond** | **enser** |
| Capacity  (ton) | Input  (kW) | Performance  (kW/ton) | RLA  (A) | NPLV  (kW/ton) | 75% Load  (kW/ton) | 50% Load  (kW/ton) | 25 % Load  (kW/ton) | PD (ft H2O) | EWT (°F) | PD (ft H2O) | LWT (°F) |
| 450.0 | 258.3 | 0.574 | 371 | 0.386 | 0.435 | 0.340 | 0.425 | 14.8 | 61.0 | 20.3 | 93.7 |

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| **Performance Points rated at User Specified Condenser Relief:** | | | | | | | | | | | | | |
|  |  |  |  |  |  | **Evaporator** | | | | **Condenser** | | | |
| Point  # | %Load  Request | Capacity  (ton) | Input Power  (kW) | Performance  (kW/ton) | RLA  (A) | Flow  (gpm) | EWT  (°F) | LWT  (°F) | PD  (ft H2O) | Flow  (gpm) | EWT  (°F) | LWT  (°F) | PD  (ft H2O) |
| 1 | 100.0 | 450.0 | 258.3 | 0.574 | 371 | 675.2 | 61.0 | 45.0 | 14.8 | 900.0 | 80.0 | 93.7 | 20.3 |
| 2 | 90.0 | 405.0 | 203.0 | 0.501 | 304 | 675.2 | 59.4 | 45.0 | 14.9 | 900.0 | 76.0 | 88.1 | 20.6 |
| 3 | 80.0 | 360.0 | 155.5 | 0.432 | 252 | 675.2 | 57.8 | 45.0 | 14.9 | 900.0 | 72.0 | 82.6 | 20.9 |
| 4 | 70.0 | 315.0 | 116.9 | 0.371 | 212 | 675.2 | 56.2 | 45.0 | 15.0 | 900.0 | 68.0 | 77.1 | 21.3 |
| 5 | 60.0 | 270.0 | 89.5 | 0.332 | 186 | 675.2 | 54.6 | 45.0 | 15.0 | 900.0 | 65.0 | 72.7 | 21.6 |
| 6 | 50.0 | 225.0 | 76.4 | 0.340 | 175 | 675.2 | 53.0 | 45.0 | 15.0 | 900.0 | 65.0 | 71.4 | 21.7 |
| 7 | 40.0 | 180.0 | 65.0 | 0.361 | 165 | 675.2 | 51.4 | 45.0 | 15.1 | 900.0 | 65.0 | 70.1 | 21.7 |
| 8 | 30.0 | 135.0 | 53.7 | 0.398 | 155 | 675.2 | 49.8 | 45.0 | 15.1 | 900.0 | 65.0 | 68.8 | 21.8 |
| 9 | 20.0 | 90.0 | 41.3 | 0.459 | 145 | 675.2 | 48.2 | 45.0 | 15.1 | 900.0 | 65.0 | 67.6 | 21.8 |
| 10 | 10.0 | 45.0 | 25.3 | 0.562 | 133 | 675.2 | 46.6 | 45.0 | 15.2 | 900.0 | 65.0 | 66.3 | 21.9 |

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| **Sound Pressure:** | | | | | | | | |
| 63Hz | 125Hz | 250Hz | 500Hz | 1000Hz | 2000Hz | 4000Hz | 8000Hz | Overall (dBA) |
| 69.0 | 67.0 | 69.0 | 72.0 | 77.0 | 79.0 | 79.0 | 75.0 | 84.5 |
|  |  |  |  |  |  |  | 75% Load | 82.5 |
|  |  |  |  |  |  |  | 50% Load | 82.5 |
|  |  |  |  |  |  |  | 25% Load | 83.5 |
| Sound Pressure (dB) measured in accordance with ANSI/AHRI Standard 575-2008 (A-weighted) | | | | | | | | |

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| **Service Points rated at User Specified Condenser Relief:** | | | | | | | | | | | |
|  |  |  |  |  |  | **Evaporator** | | | **Condenser** | | |
| Point  # | Refrig. Charge  (lb) | LRAD  (A) | PD  Capacity  (lb) | Superheat  (degF) | Subcooling  (degF) | Temp  (°F) | Pressure  (psig) | Velocity  (ft/s) | Temp  (°F) | Pressure  (psig) | Velocity  (ft/s) |
| 1 | 854 | 2,540 | 1,282 | 1.0 | 11.8 | 43.8 | 38.8 | 6.1 | 96.1 | 116.1 | 7.5 |
| 2 | 854 | 2,540 | 1,282 | 1.0 | 10.7 | 43.9 | 38.9 | 6.1 | 90.3 | 104.8 | 7.5 |
| 3 | 854 | 2,540 | 1,282 | 1.0 | 9.6 | 44.0 | 39.0 | 6.1 | 84.5 | 94.3 | 7.5 |
| 4 | 854 | 2,540 | 1,282 | 1.0 | 8.5 | 44.1 | 39.2 | 6.1 | 78.8 | 84.7 | 7.5 |
| 5 | 854 | 2,540 | 1,282 | 1.0 | 7.4 | 44.2 | 39.3 | 6.1 | 74.2 | 77.4 | 7.5 |
| 6 | 854 | 2,540 | 1,282 | 1.0 | 6.3 | 44.4 | 39.4 | 6.1 | 72.6 | 75.0 | 7.5 |
| 7 | 854 | 2,540 | 1,282 | 1.0 | 5.2 | 44.5 | 39.5 | 6.1 | 71.1 | 72.7 | 7.5 |
| 8 | 854 | 2,540 | 1,282 | 1.0 | 4.0 | 44.6 | 39.7 | 6.1 | 69.6 | 70.5 | 7.5 |
| 9 | 854 | 2,540 | 1,282 | 1.0 | 2.8 | 44.7 | 39.8 | 6.1 | 68.1 | 68.3 | 7.5 |
| 10 | 854 | 2,540 | 1,282 | 1.0 | 1.4 | 44.9 | 39.9 | 6.1 | 66.5 | 66.1 | 7.5 |

**Certification:**

Certified in accordance with the AHRI Water-Cooled Water Chilling Packages Using Vapor Compression Cycle Certification Program, which is based on AHRI Standard 550/590 (I-P). Certified units may be found in the AHRI Directory at www.ahridirectory.org.

**Notes:**

1. Above RLA, MCA and MOCP values are per Compressor.

2. Performance kW values are total kW, unless noted otherwise.

3. Minimum flow is based upon standard condenser water relief and not increased lift due to constant condenser water temperature.

4. WSC/WDC 063,079,087,100,113,126 models utilize water-cooled oil cooler as standard equipment.