Features/Benefits

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

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

Leave it to Carrier to rethink chiller design in ways noticed at the initial purchase, through installation, and for years afterward. Carrier’s new AquaSnap chiller installs quickly and easily on the ground or the rooftop. Then it will run so quietly that you’ll hardly know it’s there. There is one place, however, where you will definitely be aware of AquaSnap unit — on your electric bill. The AquaSnap unit’s high efficiency keeps costs down.

Costs less right from the start

Only AquaSnap chillers feature a compact, all-in-one package design. The optional pump and hydronic components are already built in, which costs less than buying and installing the components individually. You’ll save when you install an AquaSnap chiller, too. The chiller’s fully integrated and preassembled hydronic system installs in minutes. No other chiller in this class installs so easily and inexpensively. The preassembled and integrated hydronic module utilizes top-quality components and pumps to ensure years of reliable operation.
**AQUASNAP® CHILLER MODEL NUMBER DESIGNATION**

**Security/Package Option**
- **L**: No Packaging or Security Grilles
- **M**: Skid
- **S**: Skid (Top Crate)
- **C**: Coil Covers and Upper Grilles
- **G**: Skid, Coil Covers and Upper Grilles
- **D**: Skid, Coil Covers and Upper and Lower Grilles
- **H**: Skid, Coil Covers and Upper and Lower Grilles

**Controls/Communication Option**
- **0**: None
- **1**: EMM
- **2**: Service, EMM
- **7**: BACnet
- **8**: EMM, BACnet
- **9**: Service, BACnet
- **J**: LON
- **K**: Service, LON
- **L**: Service, EMM, LON

**Electrical Option**
- **1**: Single Power Connection, No Disconnect
- **3**: Dual Power Connection, No Disconnect
- **7**: Single Power Connection, Disconnect
- **C**: Dual Power Connection, Disconnect

**Refrigeration Circuit Option**
- **0**: No Suction Line Insulation
- **1**: Suction Insulation
- **2**: Suction Insulation, Head Pressure Control Operation
- **3**: Suction Insulation, Suction Service Valves
- **4**: Suction Insulation, Suction Service Valves, Minimum Load Control
- **5**: Suction Insulation, Suction Service Valves, Minimum Load Control
- **6**: Suction Insulation, Suction Service Valves, Minimum Load Control
- **7**: Suction Insulation, Suction Service Valves, Minimum Load Control
- **8**: Suction Insulation, Suction Service Valves, Minimum Load Control
- **9**: Suction Insulation, Suction Service Valves, Minimum Load Control

**Hydronics Option**
- **0**: No Pump Installed
- **1**: Single Pump, 3 HP
- **2**: Single Pump, 5 HP
- **3**: Single Pump, 7.5 HP
- **4**: Single Pump, 10 HP
- **5**: Single Pump, 15 HP
- **6**: Dual Pump, 3 HP
- **7**: Dual Pump, 5 HP
- **8**: Dual Pump, 7.5 HP, Low Head
- **9**: Dual Pump, 7.5 HP, High Head
- **B**: Dual Pump, 10 HP
- **C**: Dual Pump, 15 HP

**Legend**
- **EMM**: Energy Management Module
- **GFI**: Ground Fault Interrupting
- **LON**: Local Operating Network

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

---

### UNIT SIZES AND MODULAR COMBINATIONS

<table>
<thead>
<tr>
<th>UNIT 30RB</th>
<th>NOMINAL TONS</th>
<th>NOMINAL kW</th>
<th>MODULE A</th>
<th>MODULE B</th>
</tr>
</thead>
<tbody>
<tr>
<td>060</td>
<td>60</td>
<td>210</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>070</td>
<td>70</td>
<td>245</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>080</td>
<td>80</td>
<td>290</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>090</td>
<td>90</td>
<td>315</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>100</td>
<td>100</td>
<td>350</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>110</td>
<td>110</td>
<td>385</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>120</td>
<td>120</td>
<td>421</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>130</td>
<td>130</td>
<td>456</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>150</td>
<td>150</td>
<td>526</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>160</td>
<td>160</td>
<td>562</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>170</td>
<td>170</td>
<td>597</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>UNIT 30RB</th>
<th>NOMINAL TONS</th>
<th>NOMINAL kW</th>
<th>MODULE A</th>
<th>MODULE B</th>
</tr>
</thead>
<tbody>
<tr>
<td>190</td>
<td>190</td>
<td>667</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>210</td>
<td>210</td>
<td>737</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>225</td>
<td>225</td>
<td>879</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>275</td>
<td>275</td>
<td>967</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>300</td>
<td>300</td>
<td>1055</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>315</td>
<td>315</td>
<td>1107</td>
<td>160</td>
<td>160</td>
</tr>
<tr>
<td>330</td>
<td>330</td>
<td>1160</td>
<td>170</td>
<td>160</td>
</tr>
<tr>
<td>345</td>
<td>345</td>
<td>1213</td>
<td>170</td>
<td>170</td>
</tr>
<tr>
<td>360</td>
<td>360</td>
<td>1266</td>
<td>190</td>
<td>190</td>
</tr>
<tr>
<td>390</td>
<td>390</td>
<td>1370</td>
<td>190</td>
<td>190</td>
</tr>
</tbody>
</table>
### ARI* capacity ratings

<table>
<thead>
<tr>
<th>UNIT 30RB</th>
<th>CAPACITY (Tons)</th>
<th>CAPACITY kW</th>
<th>COMp kW</th>
<th>FAN kW</th>
<th>TOTAL POWER kW</th>
<th>FULL LOAD</th>
<th>IPLV</th>
<th>COOLER FLOW RATE (gpm)</th>
<th>COOLER PD (ft)</th>
<th>COOLER PD (kPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>060</td>
<td>57.1</td>
<td>200.7</td>
<td>60.2</td>
<td>10.3</td>
<td>70.5</td>
<td>9.7</td>
<td>2.85</td>
<td>13.2</td>
<td>3.87</td>
<td>136.6</td>
</tr>
<tr>
<td>070</td>
<td>66.5</td>
<td>233.8</td>
<td>73.2</td>
<td>10.3</td>
<td>83.5</td>
<td>9.6</td>
<td>2.80</td>
<td>13.4</td>
<td>3.93</td>
<td>159.1</td>
</tr>
<tr>
<td>080</td>
<td>76.0</td>
<td>266.9</td>
<td>85.0</td>
<td>10.3</td>
<td>95.3</td>
<td>9.6</td>
<td>2.80</td>
<td>14.2</td>
<td>4.16</td>
<td>181.6</td>
</tr>
<tr>
<td>090</td>
<td>86.5</td>
<td>303.9</td>
<td>91.2</td>
<td>15.5</td>
<td>106.7</td>
<td>9.7</td>
<td>2.85</td>
<td>13.5</td>
<td>3.96</td>
<td>206.8</td>
</tr>
<tr>
<td>100</td>
<td>95.8</td>
<td>336.6</td>
<td>104.1</td>
<td>15.5</td>
<td>119.6</td>
<td>9.6</td>
<td>2.81</td>
<td>13.6</td>
<td>3.99</td>
<td>229.1</td>
</tr>
<tr>
<td>110</td>
<td>105.5</td>
<td>370.7</td>
<td>116.7</td>
<td>15.5</td>
<td>132.2</td>
<td>9.6</td>
<td>2.80</td>
<td>13.7</td>
<td>4.02</td>
<td>252.3</td>
</tr>
<tr>
<td>120</td>
<td>118.5</td>
<td>416.3</td>
<td>129.6</td>
<td>18.1</td>
<td>147.7</td>
<td>9.6</td>
<td>2.82</td>
<td>13.7</td>
<td>4.02</td>
<td>283.2</td>
</tr>
<tr>
<td>130</td>
<td>127.3</td>
<td>447.2</td>
<td>137.7</td>
<td>20.6</td>
<td>158.3</td>
<td>9.6</td>
<td>2.82</td>
<td>13.6</td>
<td>3.99</td>
<td>304.3</td>
</tr>
<tr>
<td>150</td>
<td>144.5</td>
<td>507.6</td>
<td>158.6</td>
<td>20.6</td>
<td>179.3</td>
<td>9.7</td>
<td>2.83</td>
<td>13.8</td>
<td>4.04</td>
<td>345.4</td>
</tr>
<tr>
<td>160</td>
<td>153.1</td>
<td>537.8</td>
<td>162.9</td>
<td>25.8</td>
<td>188.7</td>
<td>9.7</td>
<td>2.85</td>
<td>13.4</td>
<td>3.93</td>
<td>366.0</td>
</tr>
<tr>
<td>170</td>
<td>166.5</td>
<td>585.0</td>
<td>182.4</td>
<td>25.8</td>
<td>208.2</td>
<td>9.6</td>
<td>2.81</td>
<td>13.5</td>
<td>3.96</td>
<td>398.1</td>
</tr>
<tr>
<td>190</td>
<td>188.6</td>
<td>662.6</td>
<td>205.8</td>
<td>31.0</td>
<td>236.7</td>
<td>9.6</td>
<td>2.80</td>
<td>13.4</td>
<td>3.93</td>
<td>450.9</td>
</tr>
<tr>
<td>210</td>
<td>201.9</td>
<td>709.4</td>
<td>217.8</td>
<td>31.0</td>
<td>248.7</td>
<td>9.7</td>
<td>2.85</td>
<td>13.6</td>
<td>3.99</td>
<td>482.5</td>
</tr>
<tr>
<td>225</td>
<td>214.4</td>
<td>753.3</td>
<td>237.1</td>
<td>31.0</td>
<td>268.1</td>
<td>9.6</td>
<td>2.81</td>
<td>13.8</td>
<td>4.04</td>
<td>512.5</td>
</tr>
<tr>
<td>250</td>
<td>238.0</td>
<td>836.3</td>
<td>261.8</td>
<td>36.1</td>
<td>298.0</td>
<td>9.6</td>
<td>2.81</td>
<td>13.6</td>
<td>3.99</td>
<td>569.0</td>
</tr>
<tr>
<td>275</td>
<td>260.3</td>
<td>914.7</td>
<td>284.3</td>
<td>41.3</td>
<td>325.6</td>
<td>9.6</td>
<td>2.81</td>
<td>13.7</td>
<td>4.02</td>
<td>622.4</td>
</tr>
<tr>
<td>300</td>
<td>282.7</td>
<td>993.4</td>
<td>308.4</td>
<td>46.5</td>
<td>354.9</td>
<td>9.6</td>
<td>2.80</td>
<td>13.5</td>
<td>3.96</td>
<td>675.9</td>
</tr>
<tr>
<td>315</td>
<td>306.1</td>
<td>1075.6</td>
<td>325.7</td>
<td>51.6</td>
<td>377.4</td>
<td>9.7</td>
<td>2.85</td>
<td>13.4</td>
<td>3.9</td>
<td>731.9</td>
</tr>
<tr>
<td>330</td>
<td>319.6</td>
<td>1122.8</td>
<td>345.3</td>
<td>51.6</td>
<td>396.9</td>
<td>9.7</td>
<td>2.83</td>
<td>13.5</td>
<td>4.0</td>
<td>764.0</td>
</tr>
<tr>
<td>345</td>
<td>333.0</td>
<td>1170.1</td>
<td>364.8</td>
<td>51.6</td>
<td>416.5</td>
<td>9.6</td>
<td>2.81</td>
<td>13.5</td>
<td>4.0</td>
<td>796.2</td>
</tr>
<tr>
<td>360</td>
<td>355.1</td>
<td>1247.7</td>
<td>388.2</td>
<td>56.8</td>
<td>445.0</td>
<td>9.6</td>
<td>2.80</td>
<td>13.5</td>
<td>4.0</td>
<td>849.0</td>
</tr>
<tr>
<td>390</td>
<td>377.2</td>
<td>1325.3</td>
<td>411.5</td>
<td>62.0</td>
<td>473.5</td>
<td>9.6</td>
<td>2.80</td>
<td>13.4</td>
<td>3.9</td>
<td>901.8</td>
</tr>
</tbody>
</table>

*Air Conditioning and Refrigeration Institute.

**NOTE:** Based on ARI standard rating conditions.
ENGLISH

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

Given:
Capacity ........................................... 126 Tons
Leaving Chilled Water Temp (LCWT) .............. 44 F
Cooler Water Temp Rise .......................... 10° F
Condenser Entering Air Temp ....................... 95 F
Fouling Factor (Cooler) ............................ 0.00010

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

II From Chiller Ratings table on page 38 and pressure drop curves on page 31, determine operating data for selected unit.

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

III Cooler Pump selection. (With a single pump option required.)

Required gpm (from above) .................. 304.3 gpm
External System Pressure Drop ................. 40 ft wg (118 kPa)
Using Pump Curve VII on page 35
Select ...................................... Pump 3 at the given flow rate and external system pressure drop

SI

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

Given:
Capacity ........................................... 270 kW
Leaving Chilled Water Temp (LCWT) .............. 7 C
Cooler Water Temp Rise .......................... 5.6° C
Condenser Entering Air Temp ....................... 35 C
Fouling Factor (Cooler) ............................ 0.018

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

II From Chiller Ratings table on page 41 and pressure drop curves on page 31, determine operating data for selected unit.

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

III Pump selection. (See AquaSnap® pump selection on page 30.)

Required Flow (from above) .......... 11.6 L/s
External System Pressure Drop ................. 200 kPa
Using Pump Curve 30RB080,090,100 on page 37
Select ...................................... Pump B at the given conditions

PUMP IMPELLER SIZES

<table>
<thead>
<tr>
<th>UNIT 30RB</th>
<th>PUMP Hp</th>
<th>SINGLE PUMP</th>
<th>DUAL PUMP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Option Code '</td>
<td>Rpm</td>
<td>Impeller Dia. (in.)</td>
</tr>
<tr>
<td>060-070</td>
<td>3</td>
<td>0</td>
<td>1750</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>1</td>
<td>1750</td>
</tr>
<tr>
<td></td>
<td>7.5</td>
<td>2</td>
<td>1750</td>
</tr>
<tr>
<td>080-090-100</td>
<td>10</td>
<td>3</td>
<td>3450</td>
</tr>
<tr>
<td>110-120-130</td>
<td>15</td>
<td>4</td>
<td>3450</td>
</tr>
<tr>
<td>150-160-170-190</td>
<td>5</td>
<td>1</td>
<td>1750</td>
</tr>
<tr>
<td></td>
<td>7.5</td>
<td>2</td>
<td>1750</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>3</td>
<td>3450</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>4</td>
<td>3450</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>1</td>
<td>1750</td>
</tr>
<tr>
<td></td>
<td>7.5</td>
<td>2</td>
<td>3450</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>3</td>
<td>3450</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>4</td>
<td>3450</td>
</tr>
</tbody>
</table>

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

NOTE: Pump Selections are chiller size dependent. For example, dual pump ‘C’ on a 30RB170 chiller is not the same as dual pump ‘C’ on a 30RB130 chiller.
Typical piping and wiring

30RB UNITS WITHOUT HYDRONIC PACKAGE

NOTES:
1. Chiller must be installed level to maintain proper compressor oil return and hydraulics.
2. Piping shown are general points-of-connection guides only and are not intended for a specific installation. Wiring and piping shown are for a quick overview of system and are not in accordance with recognized standards.
3. All wiring must comply with applicable local and national codes.
4. All piping must follow standard piping techniques. Refer to Carrier System Design Manual or appropriate ASHRAE (American Society of Heating, Refrigeration, and Air Conditioning Engineers) handbook for details.

30RB UNITS WITH HYDRONIC PACKAGE

NOTES:
1. Chiller must be installed level to maintain proper compressor oil return and hydraulics.
2. Wiring and piping shown are general points-of-connection guides only and are not intended for a specific installation. Wiring and piping shown are for a quick overview of system and are not in accordance with recognized standards.
3. All wiring must comply with applicable local and national codes.
4. All piping must follow standard piping techniques. Refer to Carrier System Design Manual or appropriate ASHRAE (American Society of Heating, Refrigeration, and Air Conditioning Engineers) handbook for details.
5. Air separator required as close to chiller as possible (except primary/secondary systems).
Typical piping and wiring (cont)

TYPICAL PIPING DIAGRAM ON 30RB UNITS WITHOUT HYDRONIC PACKAGE

LEGEND

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

Chilled Water Out
Chilled Water In

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

LEGEND

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

- Air Separator with Vent
- Strainer/Suction Guide
- Pump
- Triple Duty Valve
- Isolation Valve
- Pressure Reducing Fill Valve
- Heater (Optional)
- Flexible Connections
- Pressure Relief

Chilled Water Out
Chilled Water In
LEGEND

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

- Air Separator with Vent
- Strainer/Suction Guide
- Reverse Flow Check Valve/Service Valve
- Service Valve
- Pump
- Triple Duty Valve
- Isolation Valve