HERMETIC SCROLL COMPRESSORS

ORBIT // ORBIT+ // ORBIT FIT
## ORBIT scroll compressors

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Product overview

The ORBIT platform

// ORBIT
// ORBIT Boreal optimized for low condensing temperature applications
// ORBIT+ featuring Line Start Permanent Magnet (LSPM) motor
// ORBIT FIT featuring economizer for vapor injection
// available in two family sizes
// covering 10 – 40 HP nominal capacity
// designed for R410A, R454B, R452B, R32
// ready for variable speed operation
// 35 – 75 Hz
// released for tandem and trio compounds

Standard
For air-cooled chillers

Boreal
For water-cooled chillers

ORBIT+
For extra high efficiency

ORBIT FIT
For air-cooled chillers and heat pumps
### Explanation of model designation

#### Example

<table>
<thead>
<tr>
<th>G</th>
<th>S</th>
<th>D</th>
<th>8</th>
<th>0295</th>
<th>V</th>
<th>A</th>
<th>B</th>
<th>4</th>
<th>3</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
<td><strong>Series</strong></td>
<td><strong>Oil type</strong></td>
<td><strong>Connection type</strong></td>
<td><strong>Motor protection</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G: Scroll</td>
<td>6: 6 Series</td>
<td>V: PVE-BVC32</td>
<td>B: Brazed</td>
<td>Customized</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8: 8 Series</td>
<td></td>
<td></td>
<td>R: Rotalock</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Application**
- D: HFC – R410A
- U: ORBIT+ (LSPM)

**Application optimisation**
- A: air-cooled, A1 compliant
- W: water-cooled, A1 compliant
- L: air-cooled, A2L (R454B, R452B, R32) compliant
- B: water-cooled, A2L (R454B, R452B, R32) compliant

**Configuration**
- E: Economized
- S: Vertical
- T: Tandem
- Y: Trio
- M: Mixed
- U: Uneven

**Cooling capacity in kBtu/h according to ARI 540**

- 0120 (10t)
- 0137 (12t)
- 0154 (13t)
- 0182 (15t)
- 0235 (20t)
- 0295 (25t)
- 0385 (32t)
- 0421 (35t)
- 0485 (40t)

**Motor code**
- 2 = 208/230 – 60 Hz
- 3 = 380 – 50 Hz
- 4 = 460 – 60 Hz
- 5 = 575 – 60 Hz
- 6 = 380 – 50 Hz

Contact BITZER for availability of specific option combinations.
The ORBIT Series

The scroll compressors of the ORBIT series have been developed especially for air conditioning and heat pumps. They are characterized by high efficiency, smooth running and reliability. With respect to the typical seasonal operating mode of A/C applications – primarily in part load operation – special focus has been put on low energy consumption also at reduced condensing temperatures.

Moreover the compressor design has been optimized for low sound emissions, achieving the lowest level in its class. Additionally, the ORBIT series geometry, as it relates to fitting locations and mounting configuration, matches typical competitors’ layout for ease of substitution.

The ORBIT capacity range*

![Bar chart showing the ORBIT capacity range](chart)

The unique technical features

- Large standard application limit
  - Ideally suited to both air conditioning and heat-pumps
  - Expanded to higher evaporation temperatures for telecom and data center applications

- High energy efficiency at part and full load
  - Optimized for lowest annual operating costs
  - Especially high EER, SEER / IPLV and SCOP values

- Low sound levels
  - Optimized design for lowest sound levels in its capacity class

- Isolated sump design enables BITZER Advanced Header Technology (BAHT) piping and unique compounding options like fixed plus variable speed tandems, without difficult to manage restrictor washers.

- Operation with frequency inverter from 35 to 75 Hz
  - Customer selectable drive

- Especially low oil carry over rate

- Integrated PTC motor protection

* based on AHRI540 conditions and R410A
BITZER has developed the ORBIT+ series featuring the line start permanent magnet motor technology (LSPM) in order to address the new needs of the scroll chiller market in terms of efficiency. From January 2018 (Tier 1) and 2021 (Tier 2) on, air conditioning chillers must meet the requirements of the EU Ecodesign Regulation 2016/2281. For placing a product on the market, the Minimum Energy Performance Standards (MEPS) must be complied with and declared by the manufacturer. In its new ORBIT+ series BITZER has an easy to apply solution to comply with or even exceed these efficiency criteria.

The LSPM motor takes the compressor efficiency to a new level and increase the seasonal performance. The technology combines the efficiency of a permanent magnet motor with the robustness and easy use of an asynchronous (induction) motor.

With there being no slip and the rotor of the LSPM motor being synchronized to the net frequency, the operation speed is improved, supporting the efficiency increase of the compressor. The LSPM motor can either be connected directly to the power supply system or it can be operated with a frequency inverter.

Due to this intelligent improvement, the new ORBIT+ series helps to fulfill the EU Ecodesign requirements without making changes to the chiller platform necessary. Whereas the cooling capacity is increased by 3-5% in air- and water-cooled systems, the seasonal performance (SEER/IPLV) is increased even by 5-8%. A high seasonal performance reduces the TEWI (Total Equivalent Warming Impact) and operating costs and thus minimizes the A/C industry’s contribution to global warming.

**Increased cooling capacity and SEER/IPLV of ORBIT+ compared to ORBIT**

- **SEER**: Sensonal Energy Efficiency Ratio according to EN 14825
- **IPLV**: Integrated Part Load Value according to AHRI550/590

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**ADVANCED MOTOR TECHNOLOGY**

**HFO BLEND READY**
BITZER’s Flexible Injection Technology (FIT) enables economized vapor injection in a whole new class of scroll HVAC systems with both today’s and tomorrow’s refrigerants. System designers can realize up to 20% additional cooling capacity, and around 8% increase in full load efficiency in cooling only systems. And, in reversible and heat pump applications, the benefits can more than double.

**Economizer Performance Improvement**

<table>
<thead>
<tr>
<th>Application</th>
<th>COP</th>
<th>Cooling Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Heat pump applications</td>
<td>6–26%</td>
<td>18–48%</td>
</tr>
<tr>
<td>B Air-conditioning</td>
<td>1–26%</td>
<td>12–48%</td>
</tr>
<tr>
<td>C Process cooling</td>
<td>1–14%</td>
<td>3–29%</td>
</tr>
</tbody>
</table>

$t_0$ Evaporating temperature [°C]  
$t_c$ Condensing temperature [°C]  
$\Delta t_{oh}$ Suction superheat [K]  
SST Saturated suction temp. (°F)  
SH Suction superheat (°F)  
SDT Saturated discharge temp. (°F)  
Suction gas superheat ≤ 5K
Variable speed drive (VSD)

While the scroll compressors of the ORBIT, ORBIT+ and ORBIT FIT series are characterized by high full load and seasonal efficiency, low sound levels, and high reliability, they are also suitable for use with variable speed drives. VSD capable scroll compressors from BITZER give system designers more solutions to the challenge of maintaining full load and rating point efficiency levels, while also increasing efficiency at part load conditions where equipment operates during most of the year. Using the overspeed potential of the ORBIT gives the option of downsizing the nominal compressor displacement to cover the VSD costs. The wide speed range of 35 to 75 Hz allows for capacity reduction together with low condensing pressure operation, e.g. in comfort air-conditioning applications, for high system efficiencies. Coupled with BITZER’s unique lower condensing temperature optimization, system designers have never had so many options to satisfy their customers’ needs.

User Selectable Drives

The ORBIT, ORBIT+ and ORBIT FIT series can be used with BITZER’s intelligent VARIPACK drive, which are pre-configured with relevant parameters and may be easily modified with the BEST software (BITZER Electronics Service Tool). Alternatively, users can choose any drive from their own existing and preferred suppliers.

Design flexibility with reduced inventory costs

Since ORBIT compressors are also VSD capable in compound systems, system designers have many options, like uneven tandems and fixed and variable speed tandems, for example. When used with BITZER Advanced Header Technology, it is possible in many cases to offer different efficiency versions of the system with common piping and construction, which greatly reduces factory complexity and inventory carrying costs. Such simple and efficient capacity staging solutions provide benefits for sales, technology, manufacturing and financial functions.
Compound compressor assemblies
ORBIT Tandem and Trio scroll compressor assemblies consist of two or three compressors, respectively, connected in a parallel configuration. The simple, robust and efficient capacity control offers advantages over a single larger compressor with higher capacity with VSD operation. They are characterized by innovative technical features and very high energy efficiency especially adapted to the annual load characteristics of air conditioning systems and heat pumps. The compressor design has been optimized for low sound emissions, smooth running and reliability.

BITZER Advanced Header Technology
Our engineers have addressed these challenges and have developed the BITZER Advanced Header Technology. This technology takes advantage of the unique design characteristics of the ORBIT series compressors. Isolated oil sump design and highly miscible PVE oil provide the foundation for BITZER’s solution by operating with low oil carry-over rates. Advanced header technology then operates by ensuring that small differences in pressure drop in header tubing do not impact oil balance in low mass-flow situations, like those found in many air-to-water heat-pumps. BITZER Advanced Header Technology offers concrete advantages and benefits to the OEM customer.

Typical challenges faced by system builders
// Highly variable piping configurations from model to model caused by differences in compressor interface points.
// Difficulty maintaining oil balance in all phases of unit operation (particularly in heat-pump applications).
// Control restrictions (starting/sequencing) imposed by the compressor manufacturer.
// Operational challenges in the factory caused by the small and difficult to control restrictor washers needed in conventional piping packages.

BITZER Advanced Header Technology
// Common Piping
– Supports the OEM’s lean-production initiatives with less inventory and working capital tied up in piping
// No Restrictor Washers
– Less chance of mistakes in factory assembly
// No restriction in start-up, capacity control, or lead-lag control sequences
– Does not require costly changes to unit firmware
// Enables a wide range of creative application solutions for full- and part-load capacity and efficiency optimization*
– Even, uneven or mixed Tandems (e.g. ORBIT 6 + ORBIT 8)
– Even, uneven or mixed Trios
– Fixed + variable speed Tandems
– Suitable for VSD operation.

* Restrictions apply depending on compressor combination. Please consult BITZER for application guidance.
**Scope of standard delivery**
Built-in motor (for voltages see “Technical data”), electronic motor protection, stub tubes for brazed connections, integrated discharge check valve, oil sight glass, oil service port, terminal box with enclosure class IP54, polyvinyl ether oil charge, nitrogen holding charge.

**Application limits**

**ORBIT**

**Accessories (optional)**
Band type oil heater, discharge gas temperature switch (clamp-on types), anti-vibration mountings with sleeves, Rotalock adaptors, Rotalock shut-off valves, Rotalock pipe adapters, BITZER Advanced Header Technology piping packages and mounting rail kits.

**ORBIT 8 Boreal**
for systems with low condensing temperatures
Application limits

ORBIT+

R410A, R452B, R454B

$t_e$ [°C] to $t_h$ [°C]

$\Delta t_h = 10 \text{ K}$

$SH = 18^\circ \text{F}$

SST [°F]

R32

$t_e$ [°C] to $t_h$ [°C]

$\Delta t_h = 10 \text{ K}$

$SH = 18^\circ \text{F}$

SST [°F]

ORBIT FIT

R410A, R452B, R454B

$t_e$ [°C] to $t_h$ [°C]

$\Delta t_h = 10 \text{ K}$

$SH = 18^\circ \text{F}$

SST [°F]

R32

$t_e$ [°C] to $t_h$ [°C]

$\Delta t_h = 10 \text{ K}$

$SH = 18^\circ \text{F}$

SST [°F]

Symbols:
- $t_e$: Evaporating temperature [°C]
- $t_c$: Condensing temperature [°C]
- $\Delta t_h$: Suction superheat [K]
- SST: Saturated suction temp. [°F]
- SH: Suction superheat [°F]
- SDT: Saturated discharge temp. [°F]
- □: Suction gas superheat ≤ 5K
**Performance data**

The BITZER SOFTWARE is available in many languages as a download for Windows or online version. The online version is compatible with all browsers and always up to date. The program is ideal for tablets and smartphones.

The BITZER SOFTWARE covers:

- Performance data for all common refrigerants at freely selectable operating conditions
- Exportable performance polynomials
- All relevant technical data
- Calculation results and individually designed performance tables for compressors
- Seasonal calculation
- Parallel compounds
- Available accessories and their selection
- All relevant technical documents
- More BITZER products

www.bitzer-software.com
Performance data - 50 Hz

Performance data are based on the European Standard EN 12900 and 50 Hz operation with 10 K suction gas superheat – running-in period 72 hours.

Technical data / Performance data - 50 Hz

<table>
<thead>
<tr>
<th>Compressor type</th>
<th>Displacement 50 Hz m³/h</th>
<th>Speed range</th>
<th>Oil charge dm³</th>
<th>Weight kg</th>
<th>Cooling capacity Qo to / tc 5°C / 50°C kW</th>
<th>COP to / tc 5°C / 50°C W/W</th>
<th>Motor connection Amps (MOA)</th>
<th>Electrical data max. power consumption kW</th>
<th>Starting current LRA Amp</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSD80235V</td>
<td>38.6</td>
<td>35...75 Hz</td>
<td>5.5</td>
<td>140</td>
<td>63.1</td>
<td>4.96</td>
<td>38.0</td>
<td>22.0</td>
<td>210</td>
</tr>
<tr>
<td>GSD80295V</td>
<td>48.3</td>
<td>35...75 Hz</td>
<td>5.5</td>
<td>140</td>
<td>76.2</td>
<td>4.97</td>
<td>46.0</td>
<td>28.0</td>
<td>210</td>
</tr>
<tr>
<td>GSD80385V</td>
<td>61.8</td>
<td>35...75 Hz</td>
<td>5.5</td>
<td>144</td>
<td>97.4</td>
<td>4.95</td>
<td>58.0</td>
<td>34.0</td>
<td>274</td>
</tr>
<tr>
<td>GSD80421V</td>
<td>67.6</td>
<td>35...75 Hz</td>
<td>5.5</td>
<td>143</td>
<td>107.6</td>
<td>4.87</td>
<td>67.0</td>
<td>39.0</td>
<td>326</td>
</tr>
<tr>
<td>GSD80485V</td>
<td>77.2</td>
<td>35...75 Hz</td>
<td>5.5</td>
<td>160</td>
<td>122.9</td>
<td>4.87</td>
<td>75.0</td>
<td>44.0</td>
<td>326</td>
</tr>
</tbody>
</table>

Subject to change
Charged with polyvinyl ether BVC32.

Other voltages and electrical supplies upon request.

For the selection of contactors, cables and fuses the max. operating amps (MOA) and the max. power consumption must be considered ("Electrical data"). Contactors: operational category AC3.

Low GWP refrigerants belonging to the safety group A2L, according to ISO 817. Follow all applicable national and local regulations. See BITZER Refrigerant Report A-501 for more information.

Oil heater (option)

ORBIT 6: 90 W, 115 V/230 V/460 V/575 V.

ORBIT 8: 140 W, 115 V/230 V/460 V/575 V.

Pipe connections:

ORBIT 6:
- SL: 1 1/8 inch
- DL: 1/2 inch

ORBIT 8:
- SL: 1 1/4 inch
- DL: 1 3/8 inch

Contact BITZER for information on Rotalock connections.

Further performance data see BITZER SOFTWARE.

Subject to change

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Technical data / Performance data - 50 Hz

**ORBIT+**

<table>
<thead>
<tr>
<th>Compressor type</th>
<th>Displacement 50 Hz m³/h</th>
<th>Speed range</th>
<th>Oil charge</th>
<th>Weight</th>
<th>Cooling capacity Qo t(<em>{\text{r}}/t(</em>{\text{c}}) -20°C/50°C kW</th>
<th>COP t(<em>{\text{r}}/t(</em>{\text{c}}) 5°C/50°C W/W</th>
<th>Motor connection</th>
<th>Electrical data</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSU60120V</td>
<td>20,5</td>
<td></td>
<td>2,7</td>
<td>82.7</td>
<td>27,5</td>
<td>26.7</td>
<td>3,45</td>
<td>16,9</td>
</tr>
<tr>
<td>GSU60137V</td>
<td>23,0</td>
<td></td>
<td>2,7</td>
<td>82.7</td>
<td>30,8</td>
<td>30.0</td>
<td>3,50</td>
<td>19.7</td>
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<td>GSU60154V</td>
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<td>2,7</td>
<td>82.7</td>
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<td>33.7</td>
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<td>GSU60182V</td>
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<td>2,7</td>
<td>82.7</td>
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<td>39.6</td>
<td>3,44</td>
<td>27.3</td>
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<tr>
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<td></td>
<td>2.7</td>
<td>83.7</td>
<td>53.1</td>
<td>51.6</td>
<td>3,34</td>
<td>40.2</td>
</tr>
<tr>
<td>GSU80295V</td>
<td>50.0</td>
<td></td>
<td>5,5</td>
<td>145.5</td>
<td>67,0</td>
<td>64.9</td>
<td>3,33</td>
<td>46.0</td>
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<tr>
<td>GSU80385V</td>
<td>63.9</td>
<td></td>
<td>5,5</td>
<td>145.5</td>
<td>87.9</td>
<td>86.2</td>
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<td>65.0</td>
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<tr>
<td>GSU80421V</td>
<td>69.9</td>
<td></td>
<td>5,5</td>
<td>144.5</td>
<td>94.9</td>
<td>92.0</td>
<td>3,34</td>
<td>71.0</td>
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</tbody>
</table>

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**ORBIT FIT**

<table>
<thead>
<tr>
<th>Compressor type</th>
<th>Displacement 50 Hz m³/h</th>
<th>Speed range</th>
<th>Oil charge</th>
<th>Weight</th>
<th>Cooling capacity Qo t(<em>{\text{r}}/t(</em>{\text{c}}) -20°C/50°C kW</th>
<th>COP t(<em>{\text{r}}/t(</em>{\text{c}}) 5°C/50°C W/W</th>
<th>Motor connection</th>
<th>Electrical data</th>
</tr>
</thead>
<tbody>
<tr>
<td>GED60120V</td>
<td>19,8</td>
<td></td>
<td>2,7</td>
<td>82</td>
<td>14.1</td>
<td>13.4</td>
<td>1.58</td>
<td>25.7</td>
</tr>
<tr>
<td>GED60137V</td>
<td>22.2</td>
<td></td>
<td>2,7</td>
<td>82</td>
<td>16.9</td>
<td>16.1</td>
<td>1.69</td>
<td>29.0</td>
</tr>
<tr>
<td>GED60154V</td>
<td>24.8</td>
<td></td>
<td>2,7</td>
<td>82</td>
<td>18.8</td>
<td>17.8</td>
<td>1.69</td>
<td>35.1</td>
</tr>
<tr>
<td>GED60182V</td>
<td>29.2</td>
<td></td>
<td>2.7</td>
<td>82</td>
<td>22.1</td>
<td>21.7</td>
<td>1.73</td>
<td>38.6</td>
</tr>
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<td>GED60235V</td>
<td>37.6</td>
<td></td>
<td>2.7</td>
<td>83</td>
<td>27.5</td>
<td>26.7</td>
<td>1.66</td>
<td>47.6</td>
</tr>
<tr>
<td>GED80295V</td>
<td>48.3</td>
<td></td>
<td>5.5</td>
<td>144</td>
<td>36.4</td>
<td>34.1</td>
<td>1.55</td>
<td>57.4</td>
</tr>
<tr>
<td>GED80385V</td>
<td>61.8</td>
<td></td>
<td>5.5</td>
<td>159</td>
<td>48.5</td>
<td>45.3</td>
<td>1.61</td>
<td>74.3</td>
</tr>
<tr>
<td>GED80421V</td>
<td>67.6</td>
<td></td>
<td>5.5</td>
<td>159</td>
<td>49.9</td>
<td>47.7</td>
<td>1.55</td>
<td>80.6</td>
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<tr>
<td>GED80485V</td>
<td>77.2</td>
<td></td>
<td>5.5</td>
<td>164</td>
<td>58.0</td>
<td>53.2</td>
<td>1.60</td>
<td>87.0</td>
</tr>
</tbody>
</table>
Performance data - 60 Hz

Performance data are based on the latest edition of AHRI540 and 60 Hz operation with 20°F suction gas superheat and 15°F subcooling – running-in period 72 hours.

Technical data / Performance data - 60 Hz

**ORBIT**

<table>
<thead>
<tr>
<th>Compressor type</th>
<th>Displacement 60 Hz CFM</th>
<th>Speed range</th>
<th>Oil charge</th>
<th>Weight</th>
<th>Cooling capacity Q₀</th>
<th>EER</th>
<th>Motor connection</th>
<th>Electrical data</th>
<th>Starting current LRA Amp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSD60120V</td>
<td>14.1</td>
<td>35.75 Hz</td>
<td>91</td>
<td>181</td>
<td>124.0 118.9 119.0 134.3</td>
<td>R410A</td>
<td>R454B</td>
<td>R452B</td>
<td>11.42 12.01 11.68 11.77</td>
</tr>
<tr>
<td>GSD60137V</td>
<td>15.8</td>
<td>35.75 Hz</td>
<td>91</td>
<td>181</td>
<td>138.0 132.8 133.1 149.7</td>
<td>R410A</td>
<td>R454B</td>
<td>R452B</td>
<td>11.32 12.13 11.70 11.75</td>
</tr>
<tr>
<td>GSD60154V</td>
<td>17.6</td>
<td>35.75 Hz</td>
<td>91</td>
<td>181</td>
<td>154.7 148.2 149.3 167.8</td>
<td>R410A</td>
<td>R454B</td>
<td>R452B</td>
<td>11.36 11.87 11.70 11.82</td>
</tr>
<tr>
<td>GSD60182V</td>
<td>20.7</td>
<td>35.75 Hz</td>
<td>91</td>
<td>181</td>
<td>183.6 175.2 177.5 199.8</td>
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<td>R454B</td>
<td>R452B</td>
<td>11.40 11.61 11.82 11.86</td>
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<td>91</td>
<td>183</td>
<td>236.0 226.0 228.0 257.0</td>
<td>R410A</td>
<td>R454B</td>
<td>R452B</td>
<td>11.26 11.31 11.36 11.44</td>
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<td>185</td>
<td>309</td>
<td>244.0  – – –</td>
<td>R410A</td>
<td>R454B</td>
<td>R452B</td>
<td>10.20  – – –</td>
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<td>313</td>
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<td>R452B</td>
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<td>316</td>
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<td>R452B</td>
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**ORBIT Boreal**

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<th>Displacement 60 Hz CFM</th>
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<th>Oil charge</th>
<th>Weight</th>
<th>Cooling capacity Q₀</th>
<th>EER</th>
<th>Motor connection</th>
<th>Electrical data</th>
<th>Starting current LRA Amp.</th>
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<td>185</td>
<td>317</td>
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<td>R454B</td>
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<td>R454B</td>
<td>R452B</td>
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Saturated suction and discharge temperatures correspond to "dew point" conditions (saturated vapor). For Economizer operation data based on 18°F temperature difference at the heat exchanger and 15°F subcooling in the condenser.

Subject to change
### Technical data / Performance data - 60 Hz

#### ORBIT+

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<th>Displacement 60 Hz CFM</th>
<th>Speed range</th>
<th>Oil charge</th>
<th>Weight</th>
<th>Cooling capacity $Q_c$ SST/SDT 45°F/130°F kBtu/h</th>
<th>EER SST/SDT 45°F/130°F BluW</th>
<th>Motor connection</th>
<th>Electrical data</th>
<th>Starting current LRA Amp.</th>
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<td>GSU60120V</td>
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<td>91</td>
<td>182.5</td>
<td>127.30 121.90 122.10 138.40</td>
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<td>Amp.</td>
<td>17.8 14.1 95</td>
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<td>GSU60137V</td>
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<tr>
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<td>319.3</td>
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<td>Amp.</td>
<td>72.0 48.4 271</td>
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#### ORBIT FIT

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<th>Compressor type</th>
<th>Displacement 60 Hz CFM</th>
<th>Speed range</th>
<th>Oil charge</th>
<th>Weight</th>
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<th>EER SST/SDT 5°F/95°F BluW</th>
<th>Motor connection</th>
<th>Electrical data</th>
<th>Starting current LRA Amp.</th>
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<td>181</td>
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<td>85.0 60.5 387</td>
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</table>

1. Charged with polyvinyl ether BVC32.
2. Other voltages and electrical supplies upon request.
3. For the selection of contactors, cables and fuses the max. operating amps (MOA) and the max. power consumption must be considered (‘Electrical data’). Contactors: operational category AC3.
4. Low GWP refrigerants belonging to the safety group A2L, according to ISO 817. Follow all applicable national and local regulations. See BITZER Refrigerant Report A-501 for more information.

Subject to change
Dimensional drawings

ORBIT 6
SI Units

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IP Units

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<td>IP Units</td>
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<td>20.71</td>
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</table>
Connection positions

4 Sight glass
5 Oil service connection (Schrader) / Connection for oil equalization (parallel operation)
7 Mounting position for vibration dampers
8 Mounting position for Tandem and Trio fixing rails
10 Economiser connection (only ORBIT FIT)
   ORBIT 6: 7/16 - 20 UNF, 1/4 (3/8 outer diameter)
   ORBIT 8: 9/16 - 18 UNF, 3/8 (1/2 outer diameter)

SL Suction gas line
   ORBIT 6: 1 1/8 inch
   ORBIT 8: 1 1/8 inch

DL Discharge gas line
   ORBIT 6: 1 1/8 inch
   ORBIT 8: 1 1/8 inch

Contact BITZER for information on Rotalock connections.
Typical even and uneven Tandem assemblies of ORBIT 6

Note: Shown above is a typical even or uneven Tandem assembly of ORBIT 6 compressors with BITZER Advanced Header Technology.

Contact BITZER for dimensional information, other versions, and application information.

Typical even and uneven Tandem assemblies of ORBIT 8

Note: Shown above is a typical even or uneven Tandem assembly of ORBIT 8 compressors with BITZER Advanced Header Technology.

Contact BITZER for dimensional information, other versions, and application information.
Typical mixed Tandem assemblies of ORBIT 6 and ORBIT 8

Note: Shown above is a typical mixed Tandem assembly of ORBIT 6 and ORBIT 8 compressors with BITZER Advanced Header Technology.

Contact BITZER for dimensional information, other versions, and application information.
Typical even Trio assemblies of ORBIT 6

Note: Shown above is a typical even Trio assembly of ORBIT 6 compressors with BITZER Advanced Header Technology.

Contact BITZER for dimensional information, other versions, and application information.
Typical even Trio assemblies of ORBIT 8

Note: Shown above is a typical even Trio assembly of ORBIT 8 compressors with conventional piping.

Contact BITZER for dimensional information, other versions, and application information.

Connection positions

4 Sight glass
5 Oil service connection
6 Oil equalizing line
7 Mounting position for vibration dampers
8 Mounting position for Tandem and Trio fixing rails

SL Suction gas line
   ORBIT 6 Tandem: 2 1/8
   ORBIT 6 Trio: 2 5/8
   ORBIT 8 Tandem: 3 1/8
   ORBIT 8 Trio: 3 1/8
   ORBIT 6 + 8 Tandem: 3 1/8

DL Discharge gas line
   ORBIT 6 Tandem: 1 3/8
   ORBIT 6 Trio: 1 5/8
   ORBIT 8 Tandem: 1 5/8
   ORBIT 8 Trio: 2 1/8
   ORBIT 6 + 8 Tandem: 1 5/8

Contact BITZER for information on Rotalock connections.