Item No. 230016 - SOL 27 Premium S (standard vertical)
230017 - SOL 27 Premium W (horizontal wide)

- Aluminum absorber with copper fluid tubes
- Highly selective coating
- Low iron tempered solar glass
- 10 year warranty
- Custom mounting hardware available
- Low profile at 3” thickness
- Durable corrosion resistant aluminum frame

Engineering Description

Low-profile (3” thick) high-efficiency flat plate solar collector with highly selective coating, features an aluminum absorber with copper fluid tubes, low iron tempered solar glass, and a durable, corrosion-resistant aluminum frame. The plumbing connections from collector to collector do not require the use of tools.

Designed for thermal solar heating of domestic hot water (DHW) and/or radiant in-floor space heating.


Clear Day Rating in Category C
- Model No.: Sol 27 Premium S
  - Gross Area 2.55 m² (27.4 ft²)
  - Serial Number:
    - 8.9 kWh/day
    - 30.4 KBTU/day

Clear Day Rating in Category C
- Model No.: Sol 27 Premium W
  - Gross Area 2.55 m² (27.4 ft²)
  - Serial Number:
    - 9.2 kWh/day
    - 31.3 KBTU/day

Precision o-ring plumbing connections make installation quick and easy. Quad-O-ring configuration insures seal integrity. No tools are required.
### Specifications

<table>
<thead>
<tr>
<th>Item no.</th>
<th>SOL 27 Premium S</th>
<th>SOL 27 Premium W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Standard / Vertical</td>
<td>Wide / Horizontal</td>
</tr>
<tr>
<td>Height</td>
<td>85.5” / 2171 mm</td>
<td>46.1” / 1171 mm</td>
</tr>
<tr>
<td>Width</td>
<td>46.1” / 1171 mm</td>
<td>85.5” / 2171 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>3.8” / 96 mm</td>
<td>3.8” / 96 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>88.2 lb / 40 kg</td>
<td>89.3 lb / 40.5 kg</td>
</tr>
<tr>
<td>Casing material</td>
<td>Aluminum, corrosion resistant</td>
<td>Aluminum, corrosion resistant</td>
</tr>
<tr>
<td>Glass cover</td>
<td>ESG</td>
<td>ESG</td>
</tr>
<tr>
<td>Glass thickness</td>
<td>0.125” / 3.2 mm</td>
<td>0.125” / 3.2 mm</td>
</tr>
<tr>
<td>Thermal insulation thickness</td>
<td>2” / 50 mm</td>
<td>2” / 50 mm</td>
</tr>
<tr>
<td>Thermal insulation material</td>
<td>Mineral wool, low outgassing, WLG 040</td>
<td>Mineral wool, low outgassing, WLG 040</td>
</tr>
<tr>
<td>Collector connection</td>
<td>22 mm plug-in connector</td>
<td>22 mm plug-in connector</td>
</tr>
<tr>
<td>Max. idle temperature</td>
<td>&lt;410°F / &lt;210°C</td>
<td>&lt;410°F / &lt;210°C</td>
</tr>
<tr>
<td>Min. operating pressure</td>
<td>50.75 psi / 0.35 MPa</td>
<td>50.75 psi / 0.35 MPa</td>
</tr>
<tr>
<td>Max. permissible pressure</td>
<td>87 psi / 0.6 MPa</td>
<td>87 psi / 0.6 MPa</td>
</tr>
<tr>
<td>Pressure drop at 300 l/h</td>
<td>0.51 psi / 0.0035 MPa</td>
<td>0.51 psi / 0.0035 MPa</td>
</tr>
<tr>
<td>Test pressure</td>
<td>247 psi / 1.7 MPa</td>
<td>247 psi / 1.7 MPa</td>
</tr>
<tr>
<td>Test medium</td>
<td>40% Propylene Glycol</td>
<td>40% Propylene Glycol</td>
</tr>
<tr>
<td>Heat transfer medium</td>
<td>DowFrost</td>
<td>DowFrost</td>
</tr>
<tr>
<td>Fill level, heat transfer medium</td>
<td>0.4 gal / 1.5 l</td>
<td>0.48 gal / 1.83 l</td>
</tr>
<tr>
<td>Nominal volume flow</td>
<td>0.25 - 3.75 gpm** / 50-850 l/hr</td>
<td>0.25 - 3.75 gpm** / 50–850 l/hr</td>
</tr>
<tr>
<td>Angle of inclination</td>
<td>20°~85°</td>
<td>20°~85°</td>
</tr>
<tr>
<td>Total area</td>
<td>27.34 ft² / 2.54 m²</td>
<td>27.34 ft² / 2.54 m²</td>
</tr>
<tr>
<td>Aperture area</td>
<td>25.73 ft² / 2.39 m²</td>
<td>25.73 ft² / 2.39 m²</td>
</tr>
<tr>
<td>Absorber area</td>
<td>25.62 ft² / 2.38 m²</td>
<td>25.62 ft² / 2.38 m²</td>
</tr>
<tr>
<td>Absorber</td>
<td>Aluminum, highly selective coating, copper pipes, laser welded</td>
<td>Aluminum, highly selective coating, copper pipes, laser welded</td>
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<tr>
<td>Gasket</td>
<td>EPDM</td>
<td>EPDM</td>
</tr>
<tr>
<td>Conversion factor η₀</td>
<td>0.82</td>
<td>0.83</td>
</tr>
<tr>
<td>Effective heat transfer coefficient a₁</td>
<td>3.46 W / (m²K)</td>
<td>3.46 W / (m²K)</td>
</tr>
<tr>
<td>Effective heat transfer coefficient a₂</td>
<td>0.0153 W / (m²K)</td>
<td>0.0153 W / (m²K)</td>
</tr>
<tr>
<td>Absorption level α</td>
<td>95%, ±2%</td>
<td>95%, ±2%</td>
</tr>
<tr>
<td>Emission level ε</td>
<td>5%, ±1%</td>
<td>5%, ±1%</td>
</tr>
<tr>
<td>Collector yield</td>
<td>&gt;525 / kWh/(m² p.a.)</td>
<td>&gt;525 / kWh/(m² p.a.)</td>
</tr>
</tbody>
</table>

*Performance subject to global solar radiation levels, installation conditions, heat transfer medium temperature and system characteristics.

**Recommended flow rate in 0.75 gpm (170 l/hr) per series collector. For example, if there are 4 collectors in series, the flow rate should be set to 3 gpm.

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**Pressure Drop Curves**

![Pressure Drop Curves](attachment:image_url)

- SOL 27 Premium S
- SOL 27 Premium W

**Flow Rate (GPM)**

<table>
<thead>
<tr>
<th>Flow Rate (GPM)</th>
<th>Pressure Drop (ft. head)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0.5</td>
<td>1</td>
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<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1.5</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>2.5</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>

**Conversion factor**

- η₀: 0.82
- ε: 5%, ±1%
- α: 95%, ±2%

**Collector yield**: >525 / kWh/(m² p.a.)