QUALITY AND SAFETY

- 27 years of linear power output warranty **
- Rigorous quality control meeting the highest standards
- 100% EL tested to minimise micro crack
- Excellent anti-PID performance
- Certified for salt mist corrosion resistance – severity VI
- Certified for ammonia resistance
- Certified for sand and dust test
- Positive power tolerance

APPLICATIONS

- On-grid large scale utility systems
- On-grid rooftop industrial and commercial systems
- Rooftop residential systems

SUPERIOR PRICE PERFORMANCE

of half-cell improves module output without adding much to the cost

Bypass diodes and innovative series-parallel connections enable the module to perform better in PARTIAL SHADOW CONDITIONS

Half-cell generates only half the current, lowering heat production and LESS HOT SPOT, increasing module reliability

Low interconnect resistance between the cells REDUCES POWER LOSS, increases overall power output

Three separate junction boxes reduce internal resistance and IMPROVE HEAT DISSIPATION

INCREASED SHADE TOLERANCE

HALF-CELL MODULE

It functions like two modules joined parallel, enabling half-cell string still work during partial shadowing

SOMERA ULTIMA PLUS BLACK

up to 19.73% EFFICIENCY
315-335 W RANGE
120 Mono PERC solar cells

SOMERA VSMHB.60.AAA.03.04 | MONOCRYSTALLINE SOLAR PV MODULES | 120 CELLS | 315-335 WATT

PRELIMINARY DATASHEET
Product Available from January 2020

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**TECHNICAL DATA**

**SOMERA ULTIMA PLUS BLACK**

THIS DATASHEET IS APPLICABLE FOR: SOMERA VSMHB.60.AAA.03.04 (AAA=315-335)

### Electrical Data

**All data refers to STC (AM 1.5, 1000 W/m², 25°C)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>315</th>
<th>320</th>
<th>325</th>
<th>330</th>
<th>335</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Power P_{max} (Wp) (10−4.99Wp)</td>
<td>315</td>
<td>320</td>
<td>325</td>
<td>330</td>
<td>335</td>
</tr>
<tr>
<td>Maximum Voltage V_{mpp} (V)</td>
<td>34.9</td>
<td>35</td>
<td>35.1</td>
<td>35.2</td>
<td>35.3</td>
</tr>
<tr>
<td>Maximum Current I_{mpp} (A)</td>
<td>9.04</td>
<td>9.16</td>
<td>9.3</td>
<td>9.38</td>
<td>9.49</td>
</tr>
<tr>
<td>Open Circuit Voltage V_{oc} (V)</td>
<td>40.4</td>
<td>40.5</td>
<td>40.6</td>
<td>40.7</td>
<td>40.8</td>
</tr>
<tr>
<td>Short Circuit Current I_{sc} (A)</td>
<td>10.11</td>
<td>10.12</td>
<td>10.13</td>
<td>10.16</td>
<td>10.19</td>
</tr>
<tr>
<td>Module Efficiency η [%]</td>
<td>18.55</td>
<td>18.85</td>
<td>19.14</td>
<td>19.44</td>
<td>19.73</td>
</tr>
</tbody>
</table>

1) STC-1000 W/m² irradiance, 25°C cell temperature, AM1.5g spectrum according to EN 60904-3. 2) Power measurement uncertainty is within +/- 3%.

### Electrical Parameters at NOCT

<table>
<thead>
<tr>
<th>Parameter</th>
<th>221.3</th>
<th>224.8</th>
<th>228.3</th>
<th>231.8</th>
<th>235.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power (W)</td>
<td>31.1</td>
<td>31.2</td>
<td>31.3</td>
<td>31.5</td>
<td>31.6</td>
</tr>
<tr>
<td>V_{mpp} (V)</td>
<td>7.11</td>
<td>7.2</td>
<td>7.31</td>
<td>7.38</td>
<td>7.47</td>
</tr>
<tr>
<td>I_{mpp} (A)</td>
<td>36.3</td>
<td>36.4</td>
<td>36.5</td>
<td>36.6</td>
<td>36.7</td>
</tr>
<tr>
<td>I_{sc} (A)</td>
<td>7.91</td>
<td>7.92</td>
<td>7.93</td>
<td>7.96</td>
<td>7.98</td>
</tr>
</tbody>
</table>

3) NOCT irradiance 800 W/m², ambient temperature 20°C, wind speed 1 m/sec

### Temperature Coefficients (Tc)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Tc [‰/°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tc of Open Circuit Voltage [β]</td>
<td>-0.28</td>
</tr>
<tr>
<td>Tc of Short Circuit Current [α]</td>
<td>0.06%</td>
</tr>
<tr>
<td>Tc of Power [γ]</td>
<td>-0.341%</td>
</tr>
</tbody>
</table>

### Mechanical Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length × Width × Height</td>
<td>1686 × 1007 × 40 mm (66.37 × 39.64 × 1.57 inches)</td>
</tr>
<tr>
<td>Weight</td>
<td>19.2 kg (42.32 lbs)</td>
</tr>
<tr>
<td>Junction Box</td>
<td>IP68/IP67, Split Junction Box with individual bypass diodes</td>
</tr>
<tr>
<td>Cable &amp; Connectors</td>
<td>400/1200 mm length cables, MC4 Compatible/MC4 Connectors</td>
</tr>
<tr>
<td>Application Class</td>
<td>Class A (Safety class II)</td>
</tr>
<tr>
<td>Superstrate*</td>
<td>3.2 mm (0.13 inches) high transmission low iron tempered glass, AR coated</td>
</tr>
<tr>
<td>Cells</td>
<td>60 Monocryalline PERC (120 half-cells), solar cells</td>
</tr>
<tr>
<td>Cell Encapsulant</td>
<td>EVA (Ethylene Vinyl Acetate)</td>
</tr>
<tr>
<td>Back Sheet</td>
<td>Composite film</td>
</tr>
<tr>
<td>Frame</td>
<td>Anodized Aluminium frame with twin wall profile</td>
</tr>
<tr>
<td>Mechanical Load Test</td>
<td>5400 Pa (Snow load), 2400 Pa (Wind load)</td>
</tr>
<tr>
<td>Maximum Series Fuse Rating</td>
<td>15A (IEC)/ 20A (UL)</td>
</tr>
</tbody>
</table>

# Also available in anti-soil and anti-glare

### Warranty and Certifications

<table>
<thead>
<tr>
<th>Warranty</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Warranty**</td>
<td>10 years</td>
</tr>
<tr>
<td>Performance Warranty**</td>
<td>Linear Power Warranty for 27 years with 3% for 1st year degradation and 0.65% from year 2 to year 27</td>
</tr>
<tr>
<td>Approvals and Certificates</td>
<td>IEC 61215 Ed2, IEC 67130, IEC 60068-2-68*, IEC 62804*, CE, UL1703, CAN/CSA 67130, IEC 61701</td>
</tr>
</tbody>
</table>

### Packaging Information

<table>
<thead>
<tr>
<th>Quantity/Pallet</th>
<th>27</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pallets/Container</td>
<td>(40’HC): 26</td>
</tr>
<tr>
<td>Container</td>
<td>(40’HC): 702</td>
</tr>
</tbody>
</table>

### Dimensions in mm

- Dimensions: 1007 x 934 x 40 mm
- Width: 860 mm
- Height: 1360 mm

### Typical Electrical Curves

**Performance Warranty**

- 100% at 1 year
- 97% at 27 years

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CAUTION: READ SAFETY AND INSTALLATION MANUAL BEFORE USING THE PRODUCT.

Specifications included in this datasheet are subject to change without notice. Electrical data without guarantee. Please confirm your exact requirement with the company representative while placing your order.

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