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

310-330 W RANGE

120 Mono PERC solar cells

up to 19.44% EFFICIENCY

VSL/ENG/SC/167-Rev01
**TECHNICAL DATA**

**SOMERA ULTIMA PLUS ALL BLACK**

THIS DATASHEET IS APPLICABLE FOR: SOMERA VSMHB.60.AAA.03.04 (AAA=310-330)

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**Electrical Data**

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

<table>
<thead>
<tr>
<th>Component</th>
<th>310</th>
<th>315</th>
<th>320</th>
<th>325</th>
<th>330</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Power P_{max} (Wp)</td>
<td>271.8</td>
<td>277.9</td>
<td>284.0</td>
<td>290.3</td>
<td>296.6</td>
</tr>
<tr>
<td>Maximum Voltage V_{mp}</td>
<td>31.0</td>
<td>31.2</td>
<td>31.4</td>
<td>31.6</td>
<td>31.8</td>
</tr>
<tr>
<td>Maximum Current I_{mp}</td>
<td>7.03</td>
<td>7.11</td>
<td>7.20</td>
<td>7.31</td>
<td>7.38</td>
</tr>
<tr>
<td>Maximum Current I_{sc}</td>
<td>36.3</td>
<td>36.4</td>
<td>36.5</td>
<td>36.6</td>
<td></td>
</tr>
<tr>
<td>Module Efficiency η (%)</td>
<td>18.26</td>
<td>18.55</td>
<td>18.85</td>
<td>19.14</td>
<td>19.44</td>
</tr>
</tbody>
</table>

**Typical Electrical Curves**

1) STC: 1000 W/m² irradiance, 25°C cell temperature, AM1.5g spectrum according to EN 60904-1. 2) Power measurement uncertainty is within ±1.3%.

**Electrical Parameters at NOCT**

<table>
<thead>
<tr>
<th>Component</th>
<th>217.8</th>
<th>221.3</th>
<th>224.8</th>
<th>228.3</th>
<th>231.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power (W)</td>
<td>217.8</td>
<td>221.3</td>
<td>224.8</td>
<td>228.3</td>
<td>231.8</td>
</tr>
<tr>
<td>V_{mp} (V)</td>
<td>31.0</td>
<td>31.1</td>
<td>31.2</td>
<td>31.3</td>
<td>31.5</td>
</tr>
<tr>
<td>I_{mp} (A)</td>
<td>7.03</td>
<td>7.11</td>
<td>7.20</td>
<td>7.31</td>
<td>7.38</td>
</tr>
<tr>
<td>V_{oc} (V)</td>
<td>36.3</td>
<td>36.4</td>
<td>36.5</td>
<td>36.6</td>
<td></td>
</tr>
<tr>
<td>I_{sc} (A)</td>
<td>7.91</td>
<td>7.91</td>
<td>7.92</td>
<td>7.93</td>
<td>7.96</td>
</tr>
</tbody>
</table>

**Temperature Coefficients (Tc)**

permissible operating conditions

<table>
<thead>
<tr>
<th>Component</th>
<th>Tc of Open Circuit Voltage (β)</th>
<th>Tc of Short Circuit Current (α)</th>
<th>Tc of Power (γ)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.28%/%°C</td>
<td>0.06%/%°C</td>
<td>-0.341%/%°C</td>
</tr>
<tr>
<td>Maximum System Voltage</td>
<td>1000 V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOCT</td>
<td>45°C ± 2°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature Range</td>
<td>-40°C to +85°C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Mechanical Data**

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

**Warranty and Certifications**

- Product Warranty**: 10 years
- Performance Warranty**: Linear Power Warranty for 27 years with 3% for 1st year degradation and 0.65% from year 2 to year 27

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**Packaging Information**

- Quantity / Pallet: 27
- Quantity / Container (40’HC): 26
- Pallets / Container (40’HC): 702

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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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sales@vikramsolar.com  www.vikramsolar.com

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**Performance Warranty**

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* All TS certifications under progress.
** Refer to Vikram Solar’s warranty document for terms and conditions.