SOMERA P-DUPLEX HALF-CELL 144 P-TYPE BIFACIAL MODULE

- **UP TO 27 YEARS** linear power warranty
- **HIGHER LIFETIME YIELD** by using transparent Dupont® backsheet
- **UP TO 15% POWER GAIN** from ground facing side
- 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
- **LIGHT WEIGHT** easy to install bifacial module

**QUALITY AND SAFETY**
- 27 years of linear power output warranty **
- Rigorous quality control meeting the highest international standards
- 100% EL tested to minimise micro crack
- Certified for salt mist corrosion resistance – severity VI
- Excellent anti-PID performance

**APPLICATIONS**
- Utility scale applications
- Greenhouse applications
- Agricultural industry applications

**PRELIMINARY DATASHEET**
Product Available from March 2020
THIS DATASHEET IS APPLICABLE FOR: SOMERA VSM DH.72.AAA.05 (AAA=380-420)

**Electrical Data**

<table>
<thead>
<tr>
<th>Peak Power P_{max} (Wp)</th>
<th>380</th>
<th>385</th>
<th>390</th>
<th>395</th>
<th>400</th>
<th>405</th>
<th>410</th>
<th>415</th>
<th>420</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Voltage V_{max} (V)</td>
<td>40.3</td>
<td>40.4</td>
<td>40.5</td>
<td>40.6</td>
<td>40.7</td>
<td>40.8</td>
<td>41.1</td>
<td>41.3</td>
<td>41.4</td>
</tr>
<tr>
<td>Maximum Current I_{max} (A)</td>
<td>9.43</td>
<td>9.53</td>
<td>9.62</td>
<td>9.73</td>
<td>9.83</td>
<td>9.92</td>
<td>9.97</td>
<td>10.06</td>
<td>10.14</td>
</tr>
<tr>
<td>Open Circuit Voltage V_{oc} (V)</td>
<td>47.2</td>
<td>47.3</td>
<td>47.4</td>
<td>47.5</td>
<td>47.6</td>
<td>47.7</td>
<td>48.0</td>
<td>48.2</td>
<td>48.2</td>
</tr>
<tr>
<td>Short Circuit Current I_{sc} (A)</td>
<td>10.05</td>
<td>10.17</td>
<td>10.28</td>
<td>10.39</td>
<td>10.51</td>
<td>10.61</td>
<td>10.67</td>
<td>10.77</td>
<td>10.88</td>
</tr>
<tr>
<td>Module Efficiency (\eta) (%)</td>
<td>18.77</td>
<td>19.02</td>
<td>19.27</td>
<td>19.52</td>
<td>19.76</td>
<td>20.01</td>
<td>20.26</td>
<td>20.50</td>
<td>20.75</td>
</tr>
</tbody>
</table>

### Electrical Parameters at NOCT

- Power (W): 281.2, 284.9, 288.6, 292.3, 296.0, 299.7, 303.4, 307.1, 310.8
- Voc\(_{max}\) (V): 37.1, 37.2, 37.3, 37.4, 37.5, 37.6, 37.7, 37.8, 38.0
- I\(_{sc}\) (A): 7.56, 7.64, 7.72, 7.81, 7.89, 7.96, 8.00, 8.07, 8.14
- Impp (A): 8.05, 8.14, 8.23, 8.31, 8.40, 8.48, 8.54, 8.62, 8.71
- V\(_{oc}\) (V): 43.6, 43.7, 43.8, 44.0, 44.0, 44.2, 44.4, 44.6, 44.6
- maximum system voltage: 1500V

### Equivalent Bifacial Output

<table>
<thead>
<tr>
<th>Bifacial Gain</th>
<th>Overall Power output (W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5%</td>
<td>410, 415, 420, 425, 431, 436, 441</td>
</tr>
<tr>
<td>10%</td>
<td>429, 435, 440, 445, 451, 457, 462</td>
</tr>
<tr>
<td>15%</td>
<td>449, 454, 460, 465, 472, 477, 483</td>
</tr>
</tbody>
</table>

### Temperature Coefficients (Tc)

- Tc of Open Circuit Voltage (\(\beta\)): -0.27%/°C
- Tc of Short Circuit Current (\(\alpha\)): 0.065%/°C
- Tc of Power (\(\gamma\)): -0.35%/°C
- Maximum System Voltage: 1500V
- NOCT: 45°C ± 2°C
- Temperature Range: -40°C to +85°C

### Mechanical Data

- Length × Width × Height: 2010 × 1007 × 40 mm (79.13 × 39.64 × 1.57 inches)
- Weight: 22.3 kg (44.7 lbs)
- Junction Box: IP68/IP67, Split Junction Box with individual bypass diodes
- Cable & Connectors*: 400 mm length cables, MC4 Compatible/MC4 Connectors
- Application Class: Class A (Safety class II)
- Superstrate: 3.2 mm (0.125 inches) high transmission low iron tempered glass, AR coated
- Cells: 72 Mono PERC (144 half-cells) P-Type Bifacial solar cells
- Back Sheet: High Transmittance Composite film with Clear Tedlar® from Dupont®
- Frame: Anodized aluminum frame with twin wall profile
- Mechanical Load Test: 5400 Pa (Snow load), 2400 Pa (Wind load)
- Maximum Series Fuse Rating: 20 A

### 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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**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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