First Solar Series 6™
NEXT GENERATION THIN FILM SOLAR TECHNOLOGY

HIGH-POWER PV MODULES
First Solar Series 6™ photovoltaic (PV) module sets a new industry benchmark for reliable energy production, optimized design and environmental performance. Series 6 modules are optimized for every stage of your application, significantly reducing balance of system, shipping, and operating costs.

MORE ENERGY PER MODULE
• More watts per connection and per lift (420+ watts) than 72-cell silicon modules
• With superior temperature coefficient, spectral response and shading behavior, Series 6 modules generate up to 8% more energy per watt than conventional crystalline silicon solar modules
• Anti-reflective coated glass enhances energy production

INNOVATIVE MODULE DESIGN
• Under-mount frame allows for simple and fast installation
• SpeedSlots™ combine the robustness of bottom mounting with the speed of top clamping while utilizing fewer fasteners
• Dual junction box optimizes module-to-module connections
• Under-mount frame provides the cleaning and snow-shedding benefits of a frameless module, protects edges against breakage and enables horizontal stacking

PROVEN LONG-TERM RELIABILITY
• Manufactured using methods and process adapted from Series 4 modules – the most tested solar modules in the industry
• Independently tested and certified for reliable performance that exceeds IEC standards in high temperature, high humidity, extreme desert and coastal applications

BEST ENVIRONMENTAL PROFILE
• Fastest energy payback time and smallest carbon and water footprint in the industry
• Global PV collection and recycling services available through First Solar or customer-selected third-party

420-450 Watts
17%+ Efficiency

INDUSTRY-LEADING MODULE WARRANTY
98% WARRANTY START POINT
0.5% WARRANTED ANNUAL DEGRADATION RATE

- 25-Year Linear Performance Warranty
- 10-Year Limited Product Warranty
**FIRST SOLAR SERIES 6™**

### MODEL TYPES AND RATINGS AT STANDARD TEST CONDITIONS (1000W/m², AM 1.5, 25°C)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Power</td>
<td>P_{max} (W)</td>
<td>420.0</td>
<td>425.0</td>
<td>430.0</td>
<td>435.0</td>
<td>440.0</td>
<td>445.0</td>
<td>450.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficiency (%)</td>
<td>17.0</td>
<td>17.2</td>
<td>17.4</td>
<td>17.6</td>
<td>17.8</td>
<td>18.0</td>
<td>18.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage at P_{max}</td>
<td>V_{max} (V)</td>
<td>180.4</td>
<td>181.5</td>
<td>182.6</td>
<td>183.6</td>
<td>184.7</td>
<td>185.7</td>
<td>186.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current at P_{max}</td>
<td>I_{max} (A)</td>
<td>2.33</td>
<td>2.34</td>
<td>2.36</td>
<td>2.37</td>
<td>2.38</td>
<td>2.40</td>
<td>2.41</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open Circuit Voltage</td>
<td>V_{oc} (V)</td>
<td>218.5</td>
<td>218.9</td>
<td>219.2</td>
<td>219.6</td>
<td>220.0</td>
<td>220.4</td>
<td>221.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short Circuit Current</td>
<td>I_{sc} (A)</td>
<td>2.54</td>
<td>2.54</td>
<td>2.54</td>
<td>2.55</td>
<td>2.55</td>
<td>2.56</td>
<td>2.57</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum System Voltage</td>
<td>V_{sys} (V)</td>
<td>1500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limiting Reverse Current</td>
<td>I_{r} (A)</td>
<td>5.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Series Fuse</td>
<td>I_{f} (A)</td>
<td>5.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### RATINGS AT NOMINAL OPERATING CELL TEMPERATURE OF 45°C (800W/m², 20°C air temperature, AM 1.5, 1m/s wind speed)

| Nominal Power | P_{max} (W) | 317.2 | 320.9 | 324.7 | 328.5 | 332.4 | 336.0 | 339.9 |
| Voltage at P_{max} | V_{max} (V) | 168.7 | 169.8 | 170.9 | 172.0 | 173.1 | 174.1 | 175.2 |
| Current at P_{max} | I_{max} (A) | 1.88 | 1.89 | 1.90 | 1.91 | 1.92 | 1.93 | 1.94 |
| Open Circuit Voltage | V_{oc} (V) | 206.3 | 206.6 | 207.0 | 207.3 | 207.7 | 208.0 | 208.8 |
| Short Circuit Current | I_{sc} (A) | 2.04 | 2.05 | 2.05 | 2.06 | 2.06 | 2.06 | 2.07 |

### TEMPERATURE CHARACTERISTICS

| Module Operating Temperature Range | (°C) | -40 to +85 |
| Temperature Coefficient of P_{max} | T_{p} (P_{max}) | -0.32%/°C (Temperature Range: 25°C to 75°C) |
| Temperature Coefficient of V_{oc} | T_{v} (V_{oc}) | -0.28%/°C |
| Temperature Coefficient of I_{sc} | T_{i} (I_{sc}) | +0.04%/°C |

### MECHANICAL DESCRIPTION

- **Length:** 2009mm
- **Width:** 1232mm
- **Thickness:** 49mm
- **Area:** 2.47m²
- **Module Weight:** 36kg
- **Leadwire:** 2.5mm², 720mm (+) & Bulkhead (-)
- **Connectors:** MC4-EVO 2 or alternate
- **Bypass Diode:** N/A
- **Cell Type:** Thin film CdTe semiconductor, up to 264 cells
- **Frame Material:** Anodized Aluminum
- **Front Glass:** 2.8mm heat strengthened
  - Series 6AM includes anti-reflective coating
- **Back Glass:** 2.2mm heat strengthened
- **Encapsulation:** Laminate material with edge seal
- **Frame to Glass Adhesive:** Silicone
- **Load Rating:**
  - 2400Pa

### PACKAGING INFORMATION

- **Modules Per Pallet:** 27
- **Pallet Dimensions (L x W x H):** 2200 x 1300 x 1164mm (88 x 51 x 45.8in)
- **Pallet Weight:** 1072kg
- **Pallets per 40° Container:** 18

---

**Disclaimer**

The information included in this Module Datasheet is subject to change without notice and is provided for informational purposes only. No contractual rights are established or should be inferred because of user’s reliance on the information contained in this Module Datasheet. Please refer to the appropriate Module User Guide and Module Product Specification document for more detailed technical information regarding module performance, installation and use.

The First Solar logo, First Solar™, and all products denoted with ™ are registered trademarks, and those denoted with ® are trademarks of First Solar, Inc.

**CERTIFICATIONS AND TESTS**

- **IEC:**
  - 61215-2016 & 61730-1:2016², CE
  - 61701 Salt Mist Corrosion
  - 60068-2-68 Dust and Sand Resistance

- **UL:**
  - UL 1703 Listed³

**REGIONAL CERTIFICATIONS**

- **MCS**
- SilInMetro⁴
- FSEC
- BIS⁵

**EXTENDED DURABILITY TESTS**

- **ANSI/CAN/CSA-C450-18**
- Long-Term Sequential Thresher Test
- PID Resistant

**QUALITY & EHS**

- **ISO 9001:2015**
- **ISO 14001:2015**
- **ISO 45001:2018**

---

³ Limited power output and product warranties subject to warranty terms and conditions
⁴ All ratings ±10%, unless specified otherwise. Specifications are subject to change
⁵ Measurement uncertainty applies
⁶ Testing Certifications/Listings pending
⁷ Higher load ratings can be met with additional support, subject to testing

*firstsolar.com | info@firstsolar.com*