**First Solar Series 6**

**ADVANCED THIN FILM SOLAR TECHNOLOGY**

**HIGH-POWER PV MODULES**

First Solar Series 6 photovoltaic (PV) modules set the industry benchmark for reliable energy production, optimized design and environmental performance. The advanced design is optimized for every stage of your application, significantly reducing balance of system, shipping, and operating costs.

**MORE LIFETIME ENERGY PER NAMEPLATE WATT**

- Industry’s best (0.3%) warranted degradation rate
- Superior temperature coefficient, spectral response and shading behavior
- Unlike crystalline silicon modules, First Solar’s thin film technology does not experience the losses associated with LID and LeTID
- Anti-reflective coated glass enhances energy production

**INNOVATIVE MODULE DESIGN**

- Under-mount frame provides the cleaning and snow-shedding benefits of a frameless module while protecting edges against breakage
- Innovative SpeedSlots combine the robustness of bottom mounting with the speed of top clamping while utilizing fewer fasteners to achieve the industry’s fastest installation times and lowest mounting hardware costs
- Dual junction box design optimizes module-to-module connections and eliminates the need for wire management

**BEST IN-CLASS RELIABILITY & DURABILITY**

- Manufactured under one roof with 100% traceable QA/QC
- Independently tested and certified for reliable performance that exceeds IEC standards in high temperature, high humidity, extreme desert and coastal applications
- Inherently immune to and warranted against power loss from cell cracking
- Durable glass/glass construction

**BEST ENVIRONMENTAL PROFILE**

- Fastest energy payback time in the industry
- Carbon footprint that is 2.5X lower and a water footprint that is 3X lower than mono crystalline silicon panels on a life cycle basis
- Global PV module recycling services available through First Solar or customer-selected third-party

**430-460 Watts**

Up to 18.6% Efficiency

**INDUSTRY-LEADING MODULE WARRANTY**

- **98%** Warranty Start Point
- **0.3%** Warranted Annual Degradation Rate

**First Solar Lifetime Energy Advantage**

From 30 Year Warranted Annual Power Degradation

- 30-Year Linear Performance Warranty
- 12-Year Limited Product Warranty
- Industry’s First and Only Cell Cracking Warranty
FIRST SOLAR SERIES 6

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

<table>
<thead>
<tr>
<th>NOMINAL VALUES</th>
<th>FS-6430</th>
<th>FS-6435</th>
<th>FS-6440</th>
<th>FS-6445</th>
<th>FS-6450</th>
<th>FS-6455</th>
<th>FS-6460</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Power (-%/+5%) Pₚₘₐₓ (W)</td>
<td>430</td>
<td>435</td>
<td>440</td>
<td>445</td>
<td>450</td>
<td>455</td>
<td>460</td>
</tr>
<tr>
<td>Efficiency (%)</td>
<td>%</td>
<td>17.4</td>
<td>17.6</td>
<td>17.8</td>
<td>18.0</td>
<td>18.2</td>
<td>18.4</td>
</tr>
<tr>
<td>Voltage at Pₚₘₐₓ Vₚₘₐₓ (V)</td>
<td>182.6</td>
<td>183.6</td>
<td>184.7</td>
<td>185.7</td>
<td>186.8</td>
<td>187.8</td>
<td>188.8</td>
</tr>
<tr>
<td>Current at Pₚₘₐₓ Iₚₘₐₓ (A)</td>
<td>2.36</td>
<td>2.37</td>
<td>2.38</td>
<td>2.40</td>
<td>2.41</td>
<td>2.42</td>
<td>2.44</td>
</tr>
<tr>
<td>Open Circuit Voltage Vₒₛ (V)</td>
<td>219.2</td>
<td>219.6</td>
<td>220.0</td>
<td>220.4</td>
<td>221.1</td>
<td>222.0</td>
<td>222.9</td>
</tr>
<tr>
<td>Short Circuit Current Iₛ (A)</td>
<td>2.54</td>
<td>2.55</td>
<td>2.55</td>
<td>2.56</td>
<td>2.57</td>
<td>2.58</td>
<td>2.59</td>
</tr>
</tbody>
</table>

- Maximum System Voltage Vₛₚₛ (V) 1500
- Limiting Reverse Current Iₛ (A) 5.0
- Maximum Series Fuse Iₚₛ (A) 5.0

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

<table>
<thead>
<tr>
<th>NOMINAL VALUES</th>
<th>FS-6430</th>
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<th>FS-6455</th>
<th>FS-6460</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Power Pₚₘₐₓ (W)</td>
<td>324.7</td>
<td>328.5</td>
<td>332.4</td>
<td>336.0</td>
<td>339.9</td>
<td>343.6</td>
<td>347.3</td>
</tr>
<tr>
<td>Voltage at Pₚₘₐₓ Vₚₘₐₓ (V)</td>
<td>170.9</td>
<td>172.0</td>
<td>173.1</td>
<td>174.1</td>
<td>175.2</td>
<td>176.2</td>
<td>176.3</td>
</tr>
<tr>
<td>Current at Pₚₘₐₓ Iₚₘₐₓ (A)</td>
<td>1.90</td>
<td>1.91</td>
<td>1.92</td>
<td>1.93</td>
<td>1.94</td>
<td>1.95</td>
<td>1.97</td>
</tr>
<tr>
<td>Open Circuit Voltage Vₒₛ (V)</td>
<td>207.0</td>
<td>207.3</td>
<td>207.7</td>
<td>208.0</td>
<td>208.8</td>
<td>209.6</td>
<td>210.4</td>
</tr>
<tr>
<td>Short Circuit Current Iₛ (A)</td>
<td>2.05</td>
<td>2.06</td>
<td>2.06</td>
<td>2.06</td>
<td>2.07</td>
<td>2.08</td>
<td>2.09</td>
</tr>
</tbody>
</table>

TEMPERATURE CHARACTERISTICS

| Module Operating Temperature Range (°C) | -40 to +85 |
| Temperature Coefficient of Pₚₘₐₓ Tₚₘₐₓ (Pₚₘₐₓ) | -0.32%/°C (Temperature Range: 25°C to 75°C) |
| Temperature Coefficient of Vₒₛ Tₒₛ (Vₒₛ) | -0.28%/°C |
| Temperature Coefficient of Iₛ Tₛ (Iₛ) | +0.04%/°C |

MECHANICAL DESCRIPTION

- Length 2009mm
- Width 1232mm
- Thickness 49mm
- Area 2.47m²
- Module Weight 34.5kg
- Leadwire 2.5mm², 720mm (+) & Bulkhead (-)
- Connectors MC4-EVO 2 or TE Connectivity PV4-S
- Bypass Diode N/A
- Cell Type Thin film CdTe semiconductor, up to 264 cells
- Frame Material Anodized Aluminum
- Front Glass Heat strengthened
- Back Glass Heat strengthened
- Encapsulation Laminate material with edge seal
- Frame to Glass Adhesive Silicone
- Load Rating² 2400Pa

PACKAGING INFORMATION

- Modules Per Pack 27
- Pack Dimensions (L x W x H) 2200 x 1300 x 1164mm (86 x 51 x 45.8in)
- Packs per 40’ Container 18
- Pack Weight 1032kg

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.

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CERTIFICATIONS AND TESTS

- IEC 61215:2016 & 61730-1:2016², CE 61701 Salt Mist Corrosion
- 60068-2-68 Dust and Sand Resistance
- UL UL 1703 1500V Listed²
- UL 61730 1500V Listed

REGIONAL CERTIFICATIONS

- InMetro SIL
- BIS
- FSEC
- MyHijau
- Buy American Act (BAA) Compliant

EXTENDED DURABILITY TESTS

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

QUALITY & EHS

- ISO 9001:2015
- ISO 14001:2015
- ISO 45001:2018
- EPEAT Silver Registered

MECHANICAL DRAWING

Install in portrait only

1. Limited power output and product warranties subject to warranty terms and conditions
2. All ratings ±10%, unless specified otherwise. Specifications are subject to change
3. Measurement uncertainty applies
4. Testing Certifications/Listings pending
5. IEC 61730-1: 2016 Class II | UL (Canada) 1703 1000V listed
6. Leadwire length from junction box exit to connector mating surface
7. 1000Pa tentative design load rating for 1940mm mounting slots. Higher loads may be acceptable, subject to testing