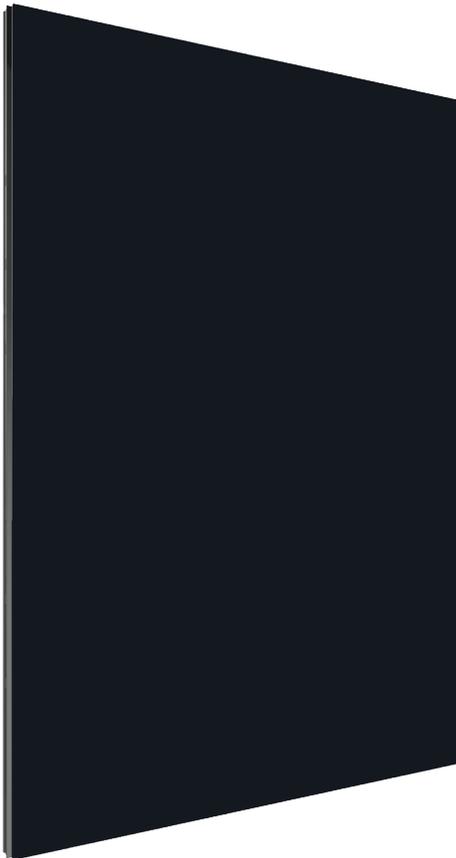




# Series 6 *Plus* Bifacial.

## 455-480 Watt Thin Film Solar Module

First Solar is once again setting the industry benchmark for reliable energy production, optimized design and environmental performance with Series 6 *Plus* Bifacial - the world's first bifacial thin film CdTe module. The advanced design significantly reduces balance of system, shipping, and operating costs while delivering more energy per nameplate watt.



### 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 losses from LID or LeTID
- Anti-reflective coated glass enhances energy production
- Added bifacial energy yield



### Innovative Module Design

- Under-mount frame provides the cleaning and snowshedding 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 reduces wire management complexity and cost



### 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

**19.0%**  
HIGH BIN EFFICIENCY

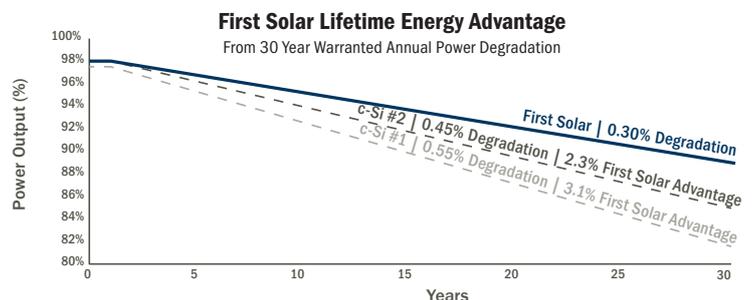
**30YR**  
LINEAR PERFORMANCE WARRANTY

**98%**  
WARRANTY START POINT

**0.3%**  
WARRANTED ANNUAL DEGRADATION RATE<sup>1</sup>



Learn more about First Solar and Series 6 *Plus* Bifacial at [firstsolar.com/S6](https://firstsolar.com/S6)



# Series 6 Plus Bifacial.



## Electrical Specifications

RATINGS AT STANDARD TEST CONDITIONS (1000W/m<sup>2</sup>, AM 1.5, 25°C)<sup>2</sup>

SERIES 6 PLUS BIFACIAL MODEL TYPES: FS-6XXX-P-B / FS-6XXXA-P-B (XXX = NOMINAL POWER)

Nominal Power <sup>3</sup> (-0/+5%)	P <sub>MAX</sub> (W)	455		460		465		470		475		480	
		STC <sup>4</sup>	BNPI <sup>5</sup>	STC	BNPI								
Nominal Power	P <sub>MAX</sub> (W)	455	464	460	469	465	474	470	479	475	485	480	490
Voltage at P <sub>MAX</sub>	V <sub>MAX</sub> (V)	187.8	187.8	188.8	188.8	189.8	189.8	191.1	191.1	191.5	191.5	192.8	192.8
Current at P <sub>MAX</sub>	I <sub>MAX</sub> (A)	2.42	2.47	2.44	2.49	2.45	2.50	2.46	2.50	2.48	2.53	2.49	2.54
Open Circuit Voltage	V <sub>OC</sub> (V)	222.0	222.0	222.9	222.9	223.8	223.8	224.3	224.3	224.8	224.8	225.4	225.4
Short Circuit Current	I <sub>SC</sub> (A)	2.58	2.63	2.59	2.64	2.60	2.65	2.61	2.66	2.61	2.66	2.62	2.67
Efficiency (%)	%	18.1		18.3		18.5		18.7		18.9		19.0	
Maximum System Voltage	V <sub>SYS</sub> (V)	1500 <sup>6</sup>											
Limiting Reverse Current	I <sub>R</sub> (A)	5.0											
Maximum Series Fuse	I <sub>CF</sub> (A)	5.0											

### TEMPERATURE CHARACTERISTICS

Module Operating Temperature Range	°C	-40 to +85
Temperature Coefficient of P <sub>MAX</sub>	T <sub>K</sub> (P <sub>MAX</sub> )	-0.32%/°C [Temperature Range: 25°C to 75°C]
Temperature Coefficient of V <sub>OC</sub>	T <sub>K</sub> (V <sub>OC</sub> )	-0.28%/°C
Temperature Coefficient of I <sub>SC</sub>	T <sub>K</sub> (I <sub>SC</sub> )	+0.04%/°C
Nominal Operating Cell Temperature	°C	43
Bifaciality Factor	%	15±5

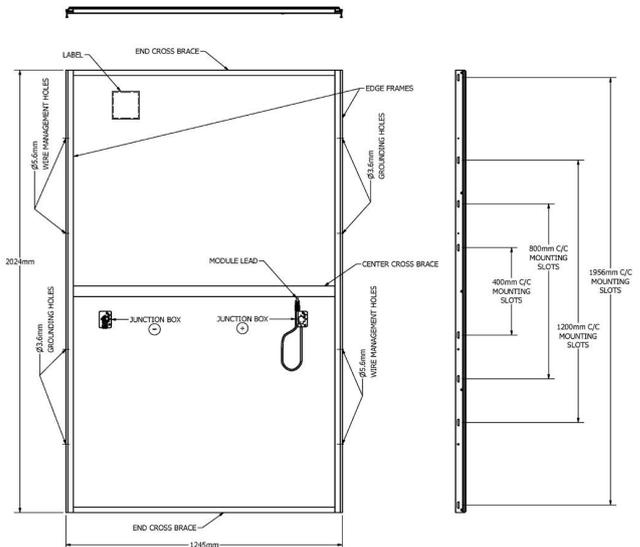
### PACKAGING INFORMATION

Model Type	Modules Per Pack	Packs per 40' Container
FS-6XXX-P-B / FS-6XXXA-P-B	27	18

### MECHANICAL DESCRIPTION

Module/Glass Length	2024mm/2016mm
Module/Glass Width	1245mm/1216mm
Module/Glass Area	2.52m <sup>2</sup> /2.45m <sup>2</sup>
Module Weight	34.0kg
Leadwire <sup>7</sup>	2.5mm <sup>2</sup> , 733mm (+) & Bulkhead (-)
Connectors	TE Connectivity PV4-S, or alternate
Junction Box	IP68 Rated
Bypass Diode	N/A
Cell Type	Thin film CdTe semiconductor, up to 268 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 Rating <sup>8</sup>	+/-2400Pa

## Mechanical Specifications



Install in portrait only

## Certifications & Tests<sup>9</sup>

### CERTIFICATIONS AND LISTINGS

IEC 61215:2021 & 61730-1:2016<sup>6</sup>, CE  
IEC 61701 Salt Mist Corrosion  
IEC 60068-2-68 Dust and Sand Resistance  
UL 61730

### EXTENDED DURABILITY TESTS

IEC TS 63209-1 Extended Stress Test  
Long-Term Sequential  
Thresher Test  
PID Resistant

### QUALITY & EHS

ISO 9001:2015  
ISO 14001:2015  
ISO 45001:2018  
ISO 14064-3:2006  
EPEAT Silver Registered

- Limited power output and product warranties subject to warranty terms and conditions
- All ratings ±10%, unless specified otherwise. Specifications are subject to change
- Measurement uncertainty applies
- Frontside electrical ratings
- Bifacial Name Plate Irradiance, as per IEC 61215:2021
- IEC 61730-1: 2016 Class II
- Leadwire length from junction box exit to connector mating surface
- 1500Pa tentative load rating for 1956mm mounting slots. Higher loads may be acceptable, subject to testing
- Testing Certifications/Listings pending

#### Disclaimer

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