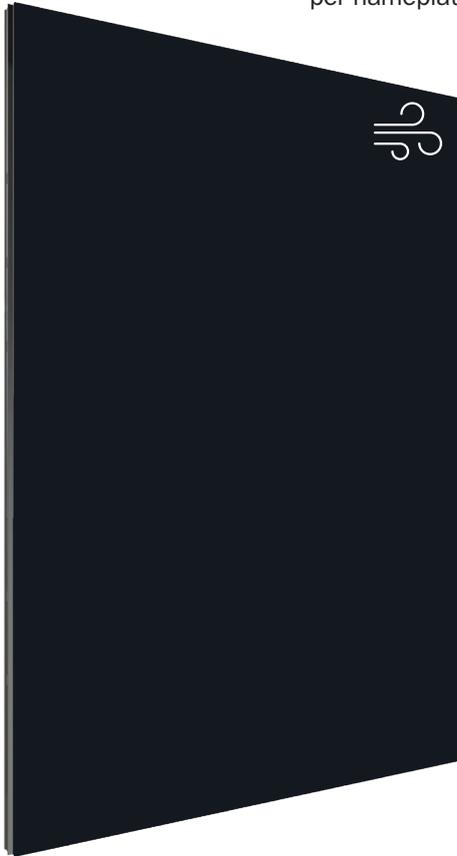




Series 6 *Plus* SHL

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* SHL, designed for applications with higher wind load requirements. 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, and shading response
- No power loss 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 SpeedSlot mounting feature delivers the industry's fastest installation times and lowest mounting hardware costs
- Dual junction box design reduces wire management complexity and cost



Unmatched Quality and Reliability

- End-to-end manufacturing process for globally consistent quality
- Tested and certified to IEC standards and beyond
- Durable glass/glass construction
- Immune to and warranted against power loss from cell cracking
- 12-year Limited Product Warranty



Industry's Most Eco-efficient PV Solution

- Industry leading carbon footprint, water footprint and energy payback time
- Globally available PV module recycling services

19.0%
HIGH BIN EFFICIENCY

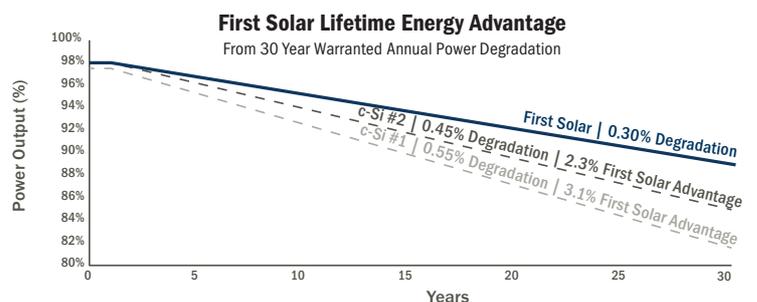
30YR
LINEAR PERFORMANCE
WARRANTY

98%
WARRANTY START POINT

0.3%
WARRANTED ANNUAL
DEGRADATION RATE¹



Learn more about First Solar and Series 6 *Plus* SHL at firstsolar.com/S6



Series 6 Plus SHL.



LEADING THE WORLD'S
SUSTAINABLE ENERGY FUTURE

Electrical Specifications

RATINGS AT STANDARD TEST CONDITIONS (1000W/m², AM 1.5, 25°C)²

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

Nominal Power ³ (-0/+5%)	P _{MAX} (W)	455		460		465		470		475		480	
		STC ⁴	BNPI ⁵	STC	BNPI								
Nominal Power	P _{MAX} (W)	455	464	460	469	465	474	470	479	475	485	480	490
Voltage at P _{MAX}	V _{MAX} (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 _{MAX}	I _{MAX} (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 _{OC} (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 _{SC} (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 _{SYS} (V)	1500 ⁶											
Limiting Reverse Current	I _R (A)	5.0											
Maximum Series Fuse	I _{CF} (A)	5.0											

TEMPERATURE CHARACTERISTICS

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

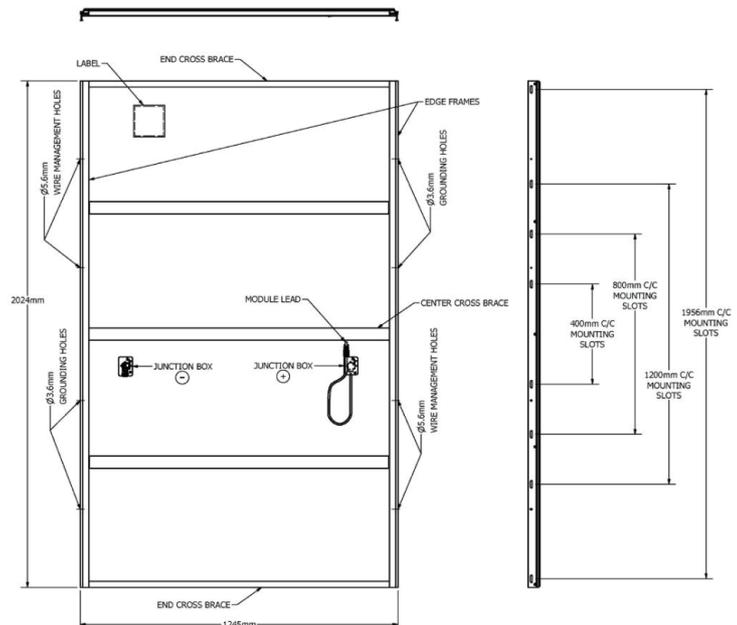
MECHANICAL DESCRIPTION

Module/Glass Length	2024mm/2016mm
Module/Glass Width	1245mm/1216mm
Module/Glass Area	2.52m ² /2.45m ²
Module Weight	36.1kg
Leadwire ⁷	2.5mm ² , 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 ⁸	Up to +/-4000Pa

PACKAGING INFORMATION

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

Mechanical Specifications



Certifications & Tests⁹

CERTIFICATIONS AND LISTINGS

IEC 61215:2021 & 61730-1:2016⁶, CE
IEC 61701 Salt Mist Corrosion
IEC 60068-2-68 Dust and Sand
Resistance
UL 61730

REGIONAL CERTIFICATIONS

InMetro
SII
MyHijau
RETIE

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



Install in portrait only

- 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
- 4000Pa load rating with 1200mm and 400mm mounting locations used concurrently. 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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