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**Solar Panel Guide  
Specification Data Sheet**

**First Solar, Inc.  
First Solar Series 4™ 110-122  
4122**

Also available on the web at  
[EnergyPal.com/first-solar-inc-solar-panels/4122](http://EnergyPal.com/first-solar-inc-solar-panels/4122)



**122.5 WATT MODULE  
EFFICIENCY OF 17.0%**

## INDUSTRY BENCHMARK SOLAR MODULES

As a global leader in PV energy, First Solar's advanced thin film solar modules have set the industry benchmark with over 17 gigawatts (GW) installed worldwide and a proven performance advantage over conventional crystalline silicon solar modules. Generating more energy than competing modules with the same power rating, First Solar's Series 4™ and Series 4A™ PV Modules deliver superior performance and reliability to our customers.



### PROVEN ENERGY YIELD ADVANTAGE

- Generates more energy than conventional crystalline silicon solar modules with the same power due to superior temperature coefficient and superior spectral response
- Anti-reflective coated glass (Series 4A™) enhances energy production



### ADVANCED PERFORMANCE & RELIABILITY

- Compatible with advanced 1500V plant architectures
- Independently certified for reliable performance in high temperature, high humidity, extreme desert and coastal environments
- Visit [PlantPredict.com](http://PlantPredict.com) - The only Energy Prediction Software designed for Utility Scale PV



### CERTIFICATIONS & TESTS

- PID-Free, Thresher Test, Long-Term Sequential Test, and ATLAS 25+<sup>1</sup>
- IEC 61215/61646 1500V, IEC 61730 1500V, CE
- IEC 61701 Salt Mist Corrosion, IEC 60068-2-68 Dust and Sand Resistance
- ISO 9001:2008 and ISO 14001:2004
- UL 1703 Listed Fire Performance PV Module Type 10<sup>2</sup>
- CSI Eligible, FSEC, MCS, CEC Listed (Australia), SII, InMetro

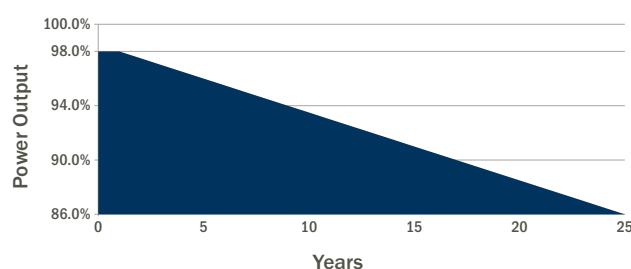


### END-OF-LIFE RECYCLING

- Recycling services available through First Solar's industry-leading recycling program or customer-selected third party.



### MODULE WARRANTY<sup>3</sup>



- 25-Year Linear Performance Warranty<sup>4</sup>
- 10-Year Limited Product Warranty

# FIRST SOLAR SERIES 4™ PV MODULE

## MECHANICAL DESCRIPTION

Length	1200mm
Width	600mm
Weight	12kg
Thickness	6.8mm
Area	0.72m <sup>2</sup>
Individual Leadwire	2.5mm <sup>2</sup> , 657mm (minimum from strain relief to connector mating surface)
Connectors	MC4 or MC4-EVO 2 <sup>9</sup>
Bypass Diode	None
Cell Type	Thin-film CdTe semiconductor, up to 216 cells
Frame Material	None
Front Glass	3.2mm heat strengthened Series 4A™ includes anti-reflective coating
Back Glass	3.2mm tempered
Encapsulation	Laminate material with edge seal
Load Rating	2400Pa <sup>10</sup>

## MODULE NUMBERS AND RATINGS AT STANDARD TEST CONDITIONS (1000W/m<sup>2</sup>, AM 1.5, 25°C)<sup>5</sup>

NOMINAL VALUES		FS-4110-3 FS-4110A-3	FS-4112-3 FS-4112A-3	FS-4115-3 FS-4115A-3	FS-4117-3 FS-4117A-3	FS-4120-3 FS-4120A-3	FS-4122-3 FS-4122A-3
Nominal Power <sup>6</sup> (-0/+5W)	P <sub>MPP</sub> (W)	110.0	112.5	115.0	117.5	120.0	122.5
Voltage at P <sub>MAX</sub>	V <sub>MPP</sub> (V)	67.8	68.5	69.3	70.1	70.8	71.5
Current at P <sub>MAX</sub>	I <sub>MPP</sub> (A)	1.62	1.64	1.66	1.68	1.70	1.71
Open Circuit Voltage	V <sub>OC</sub> (V)	86.4	87.0	87.6	88.1	88.7	88.7
Short Circuit Current	I <sub>SC</sub> (A)	1.82	1.83	1.83	1.83	1.84	1.85
Module Efficiency	%	15.3	15.6	16.0	16.3	16.7	17.0
Maximum System Voltage	V <sub>SYST</sub> (V)	1500 <sup>7,8</sup>					
Limiting Reverse Current	I <sub>R</sub> (A)	4.0					
Maximum Series Fuse	I <sub>CF</sub> (A)	4.0					

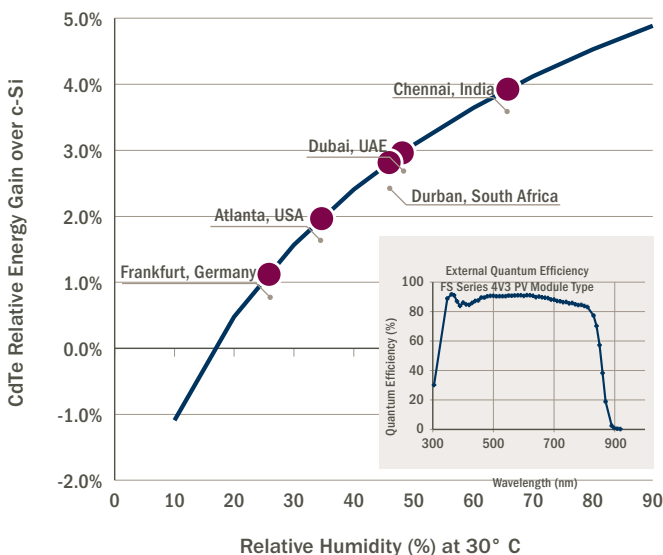
## RATINGS AT NOMINAL OPERATING CELL TEMPERATURE OF 45°C (800W/m<sup>2</sup>, 20°C air temperature, AM 1.5, 1m/s wind speed)<sup>5</sup>

Nominal Power	P <sub>MPP</sub> (W)	83.2	85.1	87.0	89.0	90.8	92.7
Voltage at P <sub>MAX</sub>	V <sub>MPP</sub> (V)	63.5	64.5	64.9	65.9	66.3	67.2
Current at P <sub>MAX</sub>	I <sub>MPP</sub> (A)	1.31	1.32	1.34	1.35	1.37	1.38
Open Circuit Voltage	V <sub>OC</sub> (V)	81.6	82.1	82.7	83.2	83.7	83.7
Short Circuit Current	I <sub>SC</sub> (A)	1.47	1.47	1.48	1.48	1.48	1.49

## TEMPERATURE CHARACTERISTICS

Module Operating Temperature Range	(°C)	-40 to +85
Temperature Coefficient of P <sub>MPP</sub>	T <sub>K</sub> (P <sub>MPP</sub> )	-0.28%/°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

## SUPERIOR SPECTRAL RESPONSE



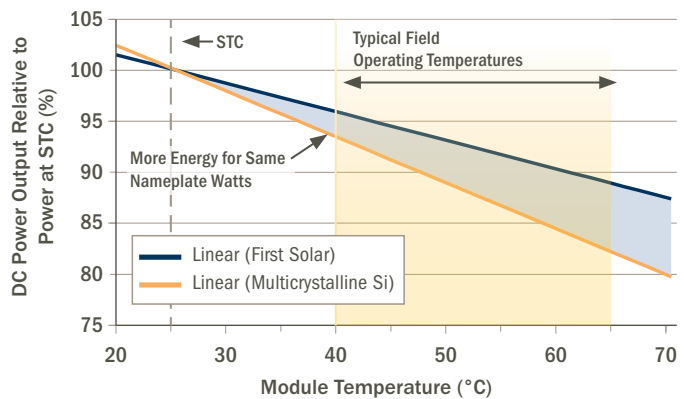
- Device package meets Atlas 25+
- Class A Spread of Flame / Class B Burning Brand. Roof mounted fire rating is established by assessing rack and solar module as a unit
- Limited power output and product warranties subject to warranty terms and conditions
- Ensures 98% rated power in first year, -0.5%/year through year 25
- All ratings ± 10%, unless specified otherwise. Specifications are subject to change
- Measurement uncertainty applies
- UL 1703 1500V Listed / ULC 1703 1000V Listed
- Application Class A for 1000V (class II), Application Class B for 1500V (class O) with MC4; Application Class A for 1000V and 1500V (class II) with MC4-EVO 2
- Multi-Contact: MC4 (PV-KST4/PV-KBT4) or MC4-EVO 2 (PV-KST-EVO 2 / PV-KBT-EVO 2).
- Higher load ratings can be met with additional clips or wider clips, subject to testing

### 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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## SUPERIOR TEMPERATURE COEFFICIENT



## MECHANICAL DRAWING

