

Solar Frontier Europe

Product Data Sheet SF150-S



Electrical Characteristics

Electrical Performance at Standard Test Conditions (STC)*1

		SF150-S
Nominal Power	P _{max}	150 W
Power tolerance		+5 W / 0 W
Open circuit voltage	V _{oc}	108.0 V
Short circuit current	I _{sc}	2.20 A
Voltage at nominal power	V _{mpp}	81.5 V
Current at nominal power	I _{mpp}	1.85 A

Electrical Performance at Nominal Operating Cell Temperature (NOCT) Conditions*2

		SF150-S
Nominal Power	P _{max}	111 W
Open circuit voltage	V _{oc}	98.3 V
Short circuit current	I _{sc}	1.76 A
Voltage at nominal power	V _{mpp}	76.4 V
Current at nominal power	I _{mpp}	1.47 A

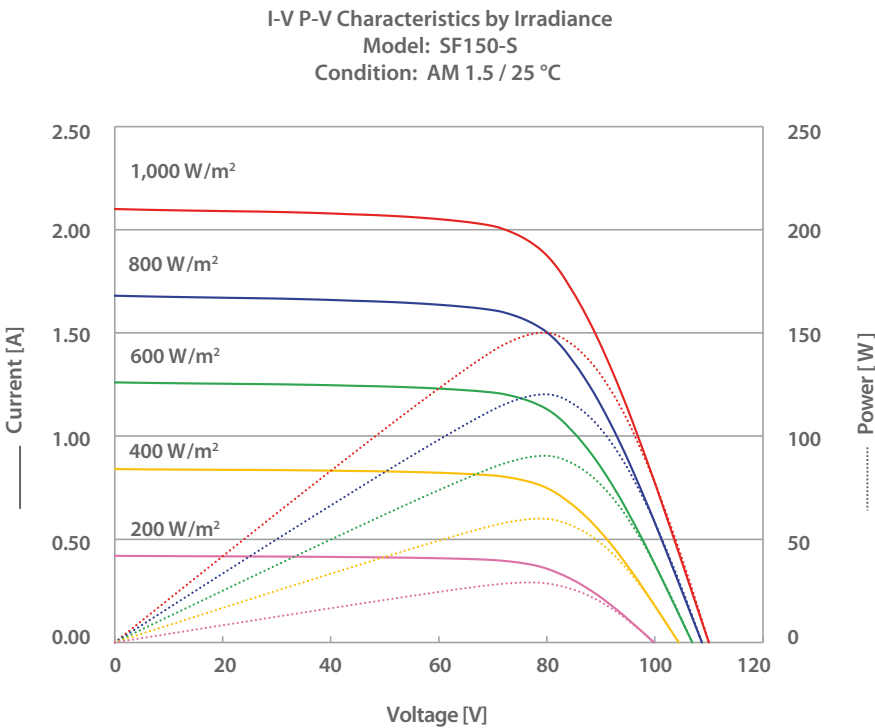
Performance at Low Irradiance

Efficiency reduction of maximum power from an irradiance of 1,000 W/m² to 200 W/m² at 25 °C is typically 2.0 %.
 The standard deviation for the reduction of efficiency is 1.9 %.

*1 Standard Test Conditions (STC): 1,000 W/m² irradiance, module temperature 25 °C, air mass 1.5. I_{sc} and V_{oc} are ±10 % tolerance of STC rated values. Module output may rise due to the Light Soaking Effect. Subject to simulator measurement uncertainty (using best-in-class AAA solar simulator and applying Solar Frontier preconditioning requirements): +10 % / -5 %.

*2 Nominal Operating Cell Temperature Conditions: Module operating temperature at 800 W/m² irradiance, air temperature 20 °C, wind speed 1 m/s and open circuit condition.

Typical I-V Characteristics at STC

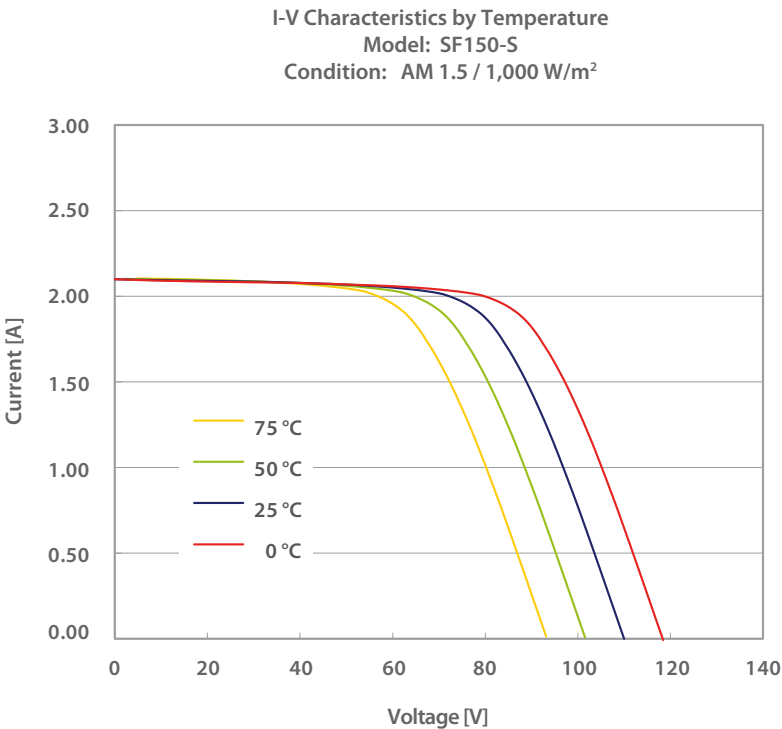


Typical characteristics

Thermal Characteristics

NOCT	47 °C
Temperature coefficient of Isc	+0.01 %/K
Temperature coefficient of Voc	-0.30 %/K
Temperature coefficient of Pmax	-0.31 %/K

These thermal characteristics are typical data.



Typical characteristics

Characteristics for System Design

Maximum system voltage	V _{sys}	1,000 V DC (UL 600 V DC)
Limiting reverse current	I _r	7 A
Maximum series fuse rating	I _{sf}	4 A

Mechanical Characteristics

Dimensions (L x W x H)* ³	1,257 x 977 x 35 mm (49.5 x 38.5x 1.4 inch)
Weight	20 kg (44.1 lbs)
Module operating temperature	-40 °C to 85 °C
Application class on IEC61730	Class A
Fire safety class on IEC61730	Class C
Safety class on IEC61140	II
Snow load (to the front of the module)* ⁴	2,400 Pa (IEC61646) / 1,600 Pa design load (UL1703)
Wind load (to the back of the module)	2,400 Pa (IEC61646) / 1,600 Pa design load (UL1703)
Cell type	CIS substrate glass (cadmium free)
Front cover	Clear tempered glass, 3.2 mm
Encapsulant	EVA
Back sheet	Weatherproof plastic film (color: black & silver)
Frame	Anodized aluminum alloy (color: black)
Edge sealant	Butyl rubber
Junction box	Protection rating: IP67 (with bypass diode)
Adhesive	Silicone
Output cables (Conductor)	2.5 mm ² / AWG14 (halogen free)
Cable lengths (symmetrical)	1,200 mm (47.2 inch)
Connectors	MC4 compatible

Qualifications and Compliance

IEC 61646 / IEC 61730 / UL 1703 / MCS 005-2.3

CE-Mark declaration

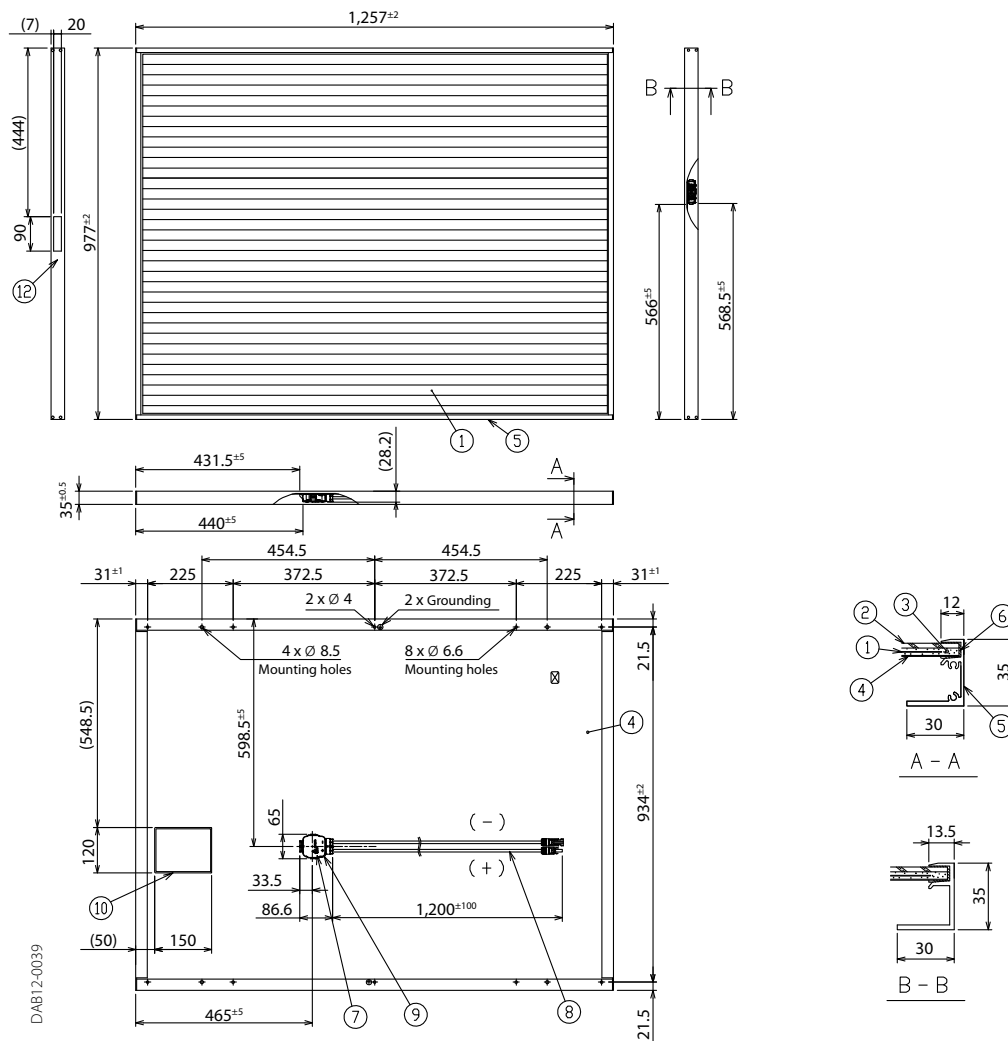
ISO 9001 / ISO 14001

No conflict with RoHS

*3: Dimensional tolerances are stated in the drawing section of this product data sheet.

*4: UL - 1.5 times design load is applied to the module. Accordingly, 2,400 Pa (50.1 lbs /ft²) is loaded to test the 1,600 Pa (33.4 lbs /ft²) UL design load.

Module drawing



No.	Item	QT'Y	Description
1	Cell	1	CIS (Substrate glass)
2	Cover glass	1	Clear tempered glass
3	Encapsulant		EVA
4	Back sheet		Weatherproof plastic film / Color: black & silver
5	Frame	1 Set	Anodized aluminium alloy / Color: black
6	Edge sealant		Butyl rubber
7	Junction box	1	With bypass diode
8	Cable		2.5 mm ² / AWG14 (with waterproof and locking connector)
9	Adhesive		Silicone
10	Label	1	Product label
11	Screw	8	Stainless tapping (SUS304J3)
12	Bar code label	1	Serial number

Solar Frontier K.K. (HQ)
 Daiba Frontier Building
 2-3-2 Daiba, Minato-ku
 Tokyo 135-8074
 Japan
 Tel: +81 3 5531 5626

Solar Frontier Europe GmbH
 Bavariafilmplatz 8
 82031 Grünwald bei München
 Germany
 Tel: +49 89 92 86 142 0

Solar Frontier Americas Inc.
 3945 Freedom Circle
 Santa Clara, CA 95054
 USA
 Tel: +1 408 916 4150

www.solar-frontier.com
www.solar-frontier.eu

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