

SOLAR FRONTIER

SF170-S



RoHS
compliant

Next Generation CIS

Solar Frontier's SF170 module offers the highest conversion efficiency of any mass-produced thin-film module, up to 13.8%. All modules are RoHS compliant and cadmium- and lead-free. Fewer production steps and raw materials also mean an industry-leading energy payback time of less than one year. SF145 170 modules are shipped in cardboard-free packaging and use recyclable corner pieces.

Product & Technology Highlights

- Highest efficiency mass-production thin-film module, up to 13.8%
- World record 19.7% achieved in laboratory
- Light Soaking effect raises output after installation
- Good low-light behavior
- High shadow tolerance
- High temperature stability
- Based on proprietary R&D since 1978
- Cadmium and lead free
- Up to 10 years system warranty

ELEKTRICAL DATA STC*	
Nominal power (Pmax)	170 W
Module efficiency	13.8 %
Power tolerance	+5 W / 0 W
Open circuit voltage (Voc)	112.0 V
Short circuit current (Isc)	2.20 A
Voltage at nominal power (Vmpp)	87.5 V
Current at nominal power (Impp)	1.95 A

Standard Test Conditions (STC): 1,000 W/m² irradiance, module temperature 25°C, air mass 1.5. Isc and Voc 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%.

NOCT* DATA	
Nominal power Pmax	126 W
Open circuit voltage Voc	102.0 V
Short circuit current Isc	1.76 A
Voltage at nominal power Vmpp	82.1 V
Current at nominal power Impp	1.55 A

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.

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%.

TEMPERATURE CHARACTERISTICS	
Nominal Operating Cell Temperature	47°C
Temperature coefficient of Isc	< +0.01% / °C
Temperature coefficient of Voc	= -0.30% / °C
Temperature coefficient of Pmax	> -0.31% / °C

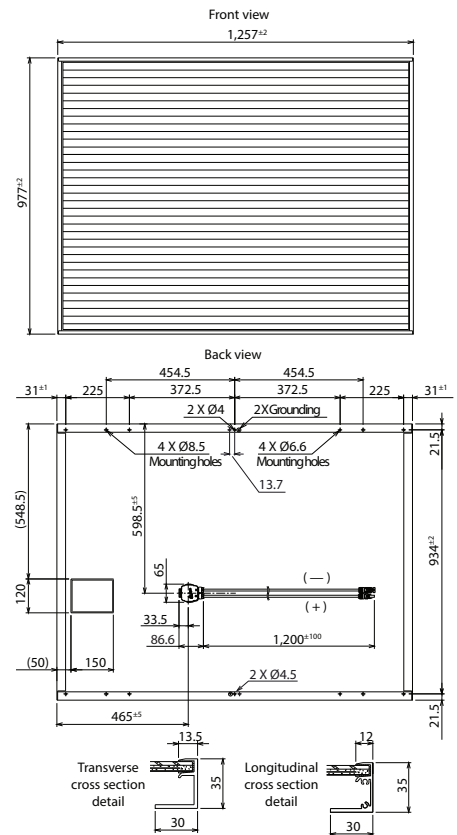
MECHANICAL CHARACTERISTICS	
Dimensions (L x W x H)	1,257 x 977 x 35 mm
Weight	20 kg
Application class (IEC 61730)	Class A
Fire rating (IEC 61730)	Class C
Safety class (IEC 61140)	II
Snow/wind load*	2,400 Pa (IEC 61646) / 1,600 Pa design load (UL 1703)
Cell type	CIS glass substrate (cadmium free)
Front 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
Connectors	MC4 compatible
Packing information	25 modules per pallet, 36 pallets per container

*UL: 1.5 x design load is applied to the module, i.e. 2,400 Pa is applied to meet the 1,600 Pa UL design load standard.

CERTIFICATES AND GUARANTEE
All new product classes are subject to immediate certification
Product guarantee: 5 years (extended guarantee upon request)
Power output guarantee: 90% for 10 years, 80% for 25 years



ENGINEERING DRAWINGS



I-V CURVE

