



Solar Frontier K.K.

# **Product Data Sheet      SC70-EX-A**

## 1. Electrical Characteristics

### 1.1 Electrical Performance at Standard Test Conditions (STC)<sup>\*1</sup>

SC70-EX-A		
Maximum Power	Pmax	70.0 W
Tolerance of Pmax		+7 % / -5 %
Open circuit voltage	Voc	54.0 V
Short circuit current	Isc	2.20 A
Voltage at maximum power	Vmpp	37.6 V
Current at maximum power	Impp	1.85 A

Note \*1

Standard Test Conditions (STC): 1,000 W/m<sup>2</sup> irradiance, module temperature 25°C and a spectral distribution of irradiance according to air mass 1.5. Isc and Voc are within ±10% tolerance of the rated values at STC. The product classification is positive sorting with Pmax. The SF module may experience greater output when light-soaked due to the unique characteristics of our CIS module.

### 1.2 Electrical Performance at Nominal Operating Cell Temperature Conditions<sup>\*2</sup>

SC70-EX-A		
Maximum Power	Pmax	51.0 W
Open Circuit Voltage	Voc	48.4 V
Short Circuit Current	Isc	1.74 A
Voltage at maximum power	Vmpp	35.5 V
Current at maximum power	Impp	1.44 A

Note \*2

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

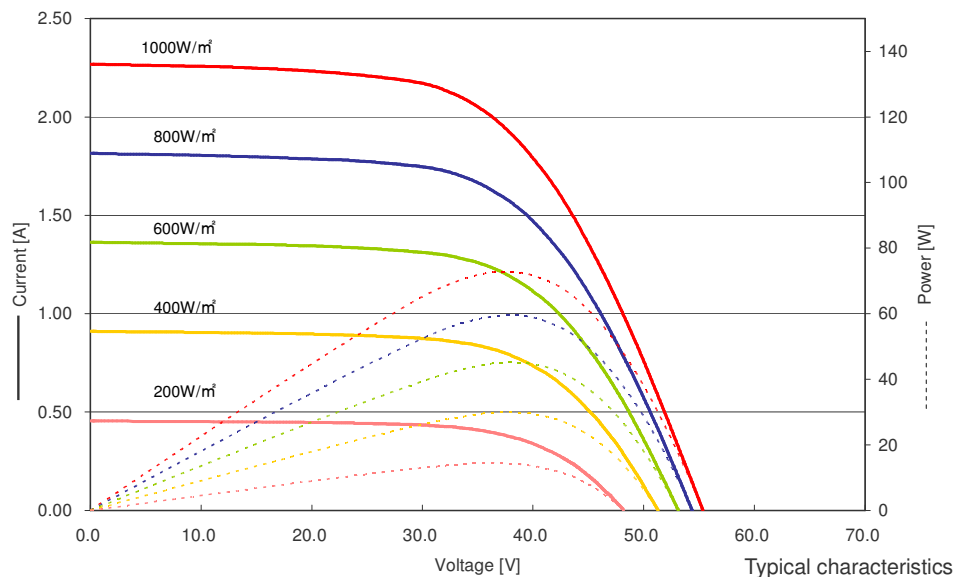
### 1.3 Performance at Low Irradiance

Efficiency reduction of maximum output from an irradiance of 1,000 W/m<sup>2</sup> to 200W/m<sup>2</sup> at 25°C is typically 2%.

The standard deviation for the reduction of efficiency is 1.8%.

### 1.4 Dependence of the Irradiance

I-V P-V Characteristics by Irradiance  
 Model : SC70-EX-A  
 Condition : AM1.5 25°C

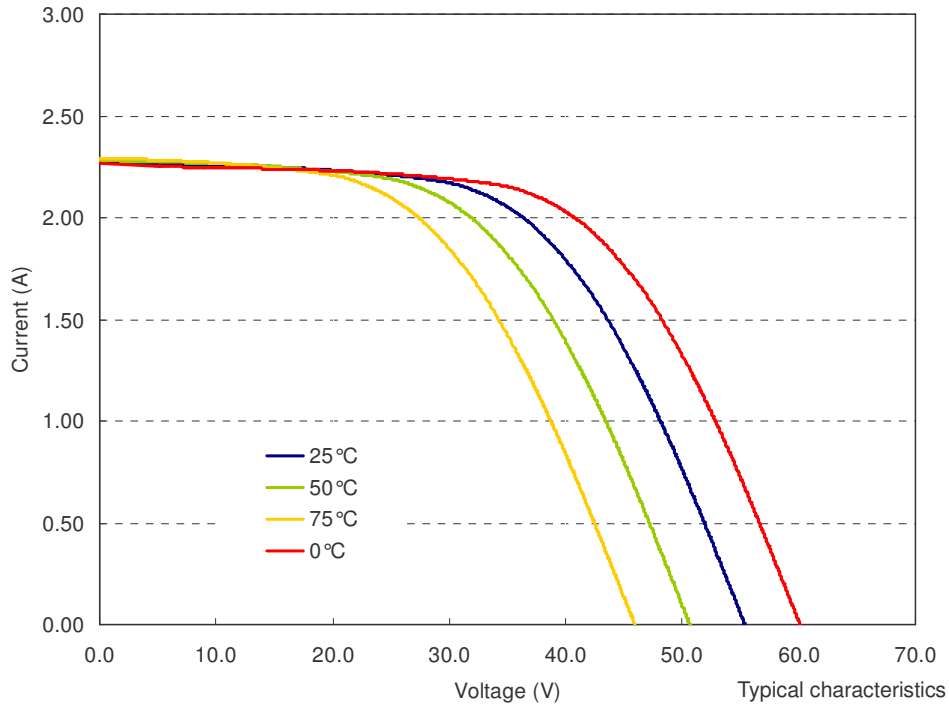


## 1.5 Thermal Characteristics

NOCT		47°C
Temperature Coefficient of Isc	$\alpha$	+0.03 % / K
Temperature Coefficient of Voc	$\beta$	-0.29 % / K
Temperature Coefficient of Pmax	$\delta$	-0.35 % / K

These thermal characteristics are typical data.

I-V Characteristics by Temperature  
 Model : SC70-EX-A  
 Condition : AM1.5 1000W/m<sup>2</sup>



## 1.6 Characteristics for System Design

Maximum System Voltage	Vsys	1,000 V DC
Limiting Reverse Current	Ir	7A
Maximum Series Fuse Rating	Isf	4A



## 2. Mechanical Characteristics

Dimensions (L x W x H) <sup>*3</sup>	1,235 x 641 x 35 mm (48.6 x 25.2 x 1.4 inch)
Weight	12.4 kg (27.3 lbs)
Maximum Load <sup>*4</sup>	2,400 Pa
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
Cell Type	CIS substrate glass (Cadmium free)
Front Cover	3.2 mm Clear tempered glass
Encapsulant	EVA
Back Sheet	Weatherproof plastic film (Color: black & silver)
Frame	Anodized aluminum alloy (Color: black)
Edge Sealant	Butyl
Junction Box	Protection rating: IP67 (with Bypass diode)
Adhesive	Silicone
Output Cables (Conductor)	2.5 mm <sup>2</sup> (14AWG)
Cable lengths (Symmetrical)	1,000 mm (39.4 inch)
Connectors	MC type 3

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

Note \*4 Passed 5,400 Pa mechanical load test to the front of the module based on IEC61646 at external test laboratory.

## 3. Qualifications and Compliance

IEC 61646 / IEC 61730

CE-Mark Declaration

ISO 9001 certified factories.

No conflict with ROHS

This data sheet complies with the EN 50380 requirements.

## 4. Disclaimers

Copyright for all material appearing on this Product Data Sheet belongs to Solar Frontier K.K.. Solar Frontier reserves the right, at our sole discretion, to change, modify, add, or delete portions of the content at any time without notice, but makes no commitment to update any content which may be out of date.

The data contained in this Product Data Sheet indicates nominal data of our products as of the shipment of the products. We do not make any warranty with respect to quality or performance of our products based on this Product Data Sheet. See the Installation and Maintenance Guide or contact the Technical Service for further information on approved installation and use of this product.

## 5. Contact

Solar Frontier K.K.

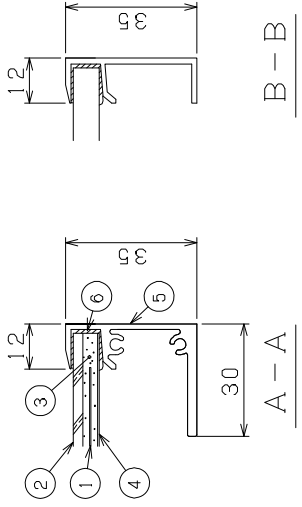
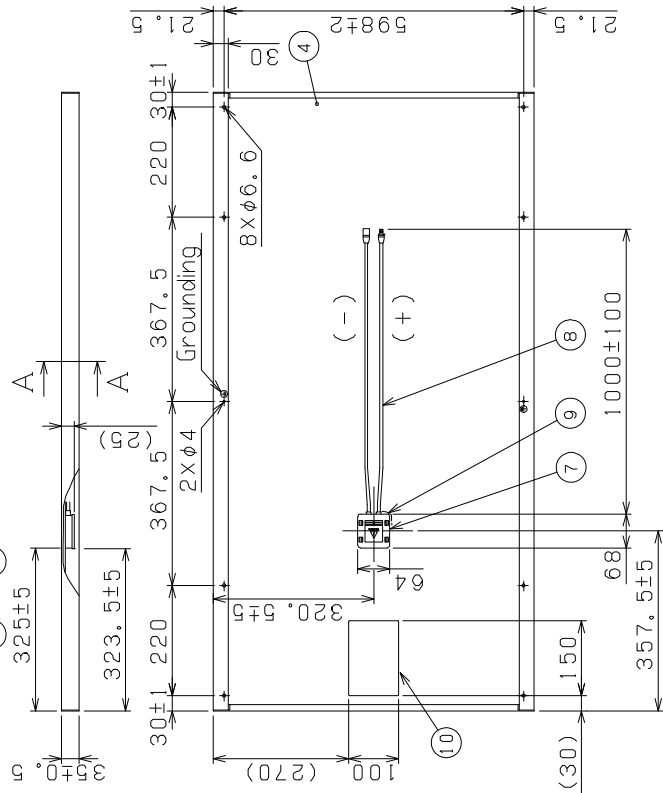
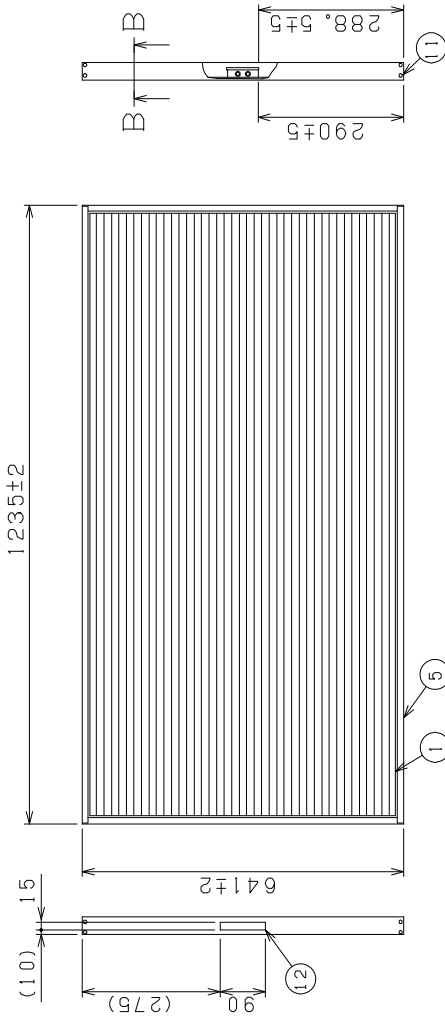
Address: 2-3-2 Daiba, Minato-ward Tokyo, 135-8074 JAPAN

Email: [info@solarfrontier.co.jp](mailto:info@solarfrontier.co.jp)

Website: [www.solar-frontier.com](http://www.solar-frontier.com)

# 6. Module Drawing

NO.	ITEM	QTY	DESCRIPTIONS
1	CIS substrate	1	CIS
2	Cover glass	1	Clear tempered glass
3	Encapsulant		EVA
4	Back sheet		Weatherproof plastic film / Color: Black
5	Frame	1SET	Anodized aluminum alloy / Color: Black
6	Edge sealant		Butyl
7	Junction Box	1	PPE resin (with Bypass diode)
8	Output cable		YPV 2.5mm <sup>2</sup> (with waterproof connector MC3)
9	Adhesive		Silicone
10	Spec. label	1	
11	Screw	8	Stainless tapping (SUS304J3)
12	Serial number label	1	



1) Tolerances ISO 2768-1-C

0.5~3	±0.2	~400	±1.2
	±0.3	~1000	±2
	±0.5	~2000	±3
	±1.0	~120	±0.8

Unit:mm

2) ( ) value: Reference value

TITLE	DWG NO.	REV.
SCXX-EX-A	DAB12-0005	01

## SOLAR FRONTIER K.K.

