

PowerModule

SF150-S

SF155-S

SF160-S

SF165-S

SF170-S

SF175-S

Superior CIS technology



EXCELLENT LOW-LIGHT BEHAVIOR



HIGH SHADOW TOLERANCE



LIGHT SOAKING EFFECT



HIGH TEMPERATURE STABILITY

Quality Highlights



Resistance to salt mist corrosion



Resistance to ammonia corrosion



No PID



No hotspots



No microcracks



Robust glass/glass/back sheet



No cadmium No lead



Superior aesthetics

STC Characteristics ¹⁾		SF150-S	SF155-S	SF160-S	SF165-S	SF170-S	SF175-S
Nominal power	P_{max}	150 W	155 W	160 W	165 W	170 W	175 W
Positive sorting effect		+5W/0W					
Module efficiency	%	12.2 %	12.6 %	13.0 %	13.4 %	13.8 %	14.2 %
Open circuit voltage	V_{oc}	108.0 V	109.0 V	110.0 V	110.0 V	112.0 V	114.0 V
Short circuit current	I_{sc}	2.20 A	2.20 A	2.20 A	2.20 A	2.20 A	2.20 A
Voltage at nominal power	V_{mpp}	81.5 V	82.5 V	84.0 V	85.5 V	87.5 V	89.5 V
Current at nominal power	I_{mpp}	1.85 A	1.88 A	1.91 A	1.93 A	1.95 A	1.96 A

NOCT Characteristics ²⁾		SF150-S	SF155-S	SF160-S	SF165-S	SF170-S	SF175-S
NOCT power	P_{max}	111 W	115 W	119 W	123 W	126 W	130 W
Open circuit voltage	V_{oc}	98.3 V	99.2 V	100.0 V	100.0 V	102.0 V	104.0 V
Short circuit current	I_{sc}	1.76 A	1.76 A	1.76 A	1.76 A	1.76 A	1.76 A
Voltage at NOCT power	V_{mpp}	76.4 V	77.4 V	78.8 V	80.2 V	82.1 V	83.9 V
Current at NOCT power	I_{mpp}	1.47 A	1.49 A	1.51 A	1.53 A	1.55 A	1.55 A

¹⁾ Values measured under Standard Test Conditions "STC" defined by IEC norm (1,000 W/m² irradiance, 25°C module temperature and air mass 1.5). I_{sc} and V_{oc} are within ±10% tolerance of the rated values at STC. If measured at a later point in time after shipping from the factory, P_{max} may have a tolerance of +10% / -5%. Module efficiency at 200 W/m² irradiance is typically 98 % (±1.9 % of efficiency under STC).

²⁾ Values measured under Nominal Operating Cell Temperature Conditions "NOCT" defined by IEC norm (Module operating temperature at 800 W/m² irradiance, 20°C air temperature and 1 m/s wind speed)

Temperature Characteristics		
NOCT		47 °C
Temperature coefficient of I_{sc}	α	+0.01 %/K
Temperature coefficient of V_{oc}	β	-0.30 %/K
Temperature coefficient of P_{max}	δ	-0.31 %/K

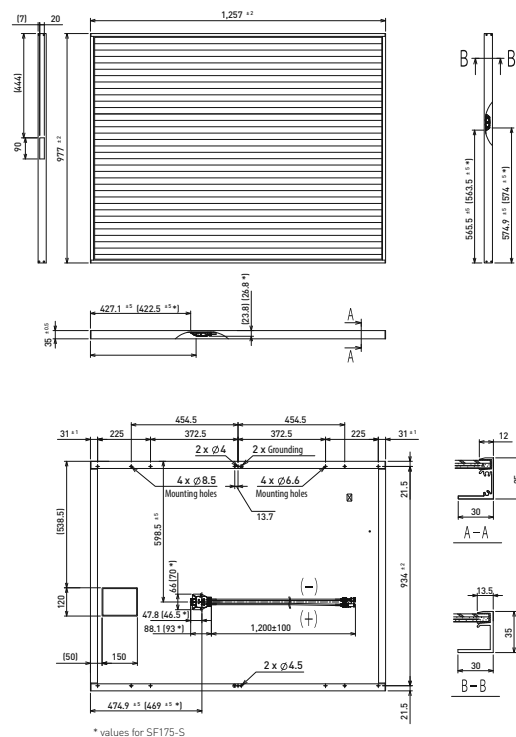
Characteristics for System Design	
Maximum system voltage	1,000 V DC (SF175-S: 1,500V DC)
Limiting reverse current	7 A
Temperature range	-40°C to +85°C
Application class (IEC 61730)	Class A
Fire rating (IEC 61730)	Class C
Safety class (IEC 61140)	II

Mechanical Characteristics	
Dimensions (L x W x H)	1,257 x 977 x 35 mm
Weight	20 kg
Snow & wind load (IEC 61646)	2,400 Pa

Materials and Components	
Cell type	CIS (cadmium free) on glass substrate
Front cover	3.2 mm tempered glass
Encapsulant	EVA
Back sheet	Weatherproof plastic film
Frame	Black anodized aluminum alloy
Edge sealant	Butyl rubber
Junction box	Protection rating: IP67 (with bypass diode)
Adhesive	Silicone
Cables (length/ cross section)	2 x 1,200 mm / 2.5 mm ² (halogen free)
Connectors	Hosiden HSC (MC4 plug-in)

Packaging	
Packaging material	cardboard free – reusable
Modules per pallet	25
Pallets per container	36

MODULE DRAWING



CERTIFICATES



IEC 61646: Design qualification and type approval
 IEC 61730: Photovoltaic module safety qualification
 IEC 61701: Salt mist corrosion testing
 IEC 62716: Ammonia corrosion testing
 ID 0000023497 www.tuv.com



GUARANTEES



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