

tsmc solar. CIGS

HIGH-EFFICIENCY CIGS SOLAR MODULE

HIGH-EFFICIENCY CIGS SOLAR MODULE

Electrical Characteristics

Standard Test Conditions (STC)

TS CIGS Series		TS-145C2	TS-150C2	TS-155C2	TS-160C2	
Maximum power	P_{max}	145	150	155	160	W_p
Factory binning		+5/-0	+5/-3	+5/-0	+5/-0	W
Open-circuit voltage	V_{oc}	86	86.6	86.7	86.8	V
Short-circuit current	I_{sc}	2.62	2.62	2.62	2.62	A
Maximum power voltage	V_{mpp}	63.6	65.5	67.1	68.7	V
Maximum power current	I_{mpp}	2.28	2.29	2.31	2.33	A
Module efficiency	Eff%	13.3	13.8	14.3	14.7	%
Power tolerance ¹		+/-5%				
Maximum reverse current	I_R	6.5 A				
Maximum system voltage		1000 Vdc (IEC), 600 Vdc (UL)				
Operating temperature		-40°C to 85°C				

IV Parameters measured at STC: 1000 W/m², module temperature 25°C, AM 1.5 after factory light soaking. All IV ratings are +/- 10%.

¹ Pre-binning power tolerance as certified by UL/TÜV-SÜD, TSMC Solar only delivers modules with greater than or equal to nameplate power.

Normal Operating Cell Temperature Conditions (NOCT)

Maximum power	P_{max}	109.4	113.2	116.9	120.7	W
Open-circuit voltage	V_{oc}	78.9	79.4	79.5	79.6	V
Short-circuit current	I_{sc}	2.1	2.1	2.1	2.1	A
Maximum power voltage	V_{mpp}	60.0	61.8	63.3	64.8	V
Maximum power current	I_{mpp}	1.82	1.83	1.85	1.86	A

Conditions at NOCT: 800 W/m², ambient temperature 20°C, AM 1.5

Thermal Characteristics

NOCT		46.5 ± 1°C
Temperature Coefficient of P_{max}		-0.30% / °C
Temperature Coefficient of V_{oc}		-0.29% / °C
Temperature Coefficient of I_{sc}		0.01% / °C

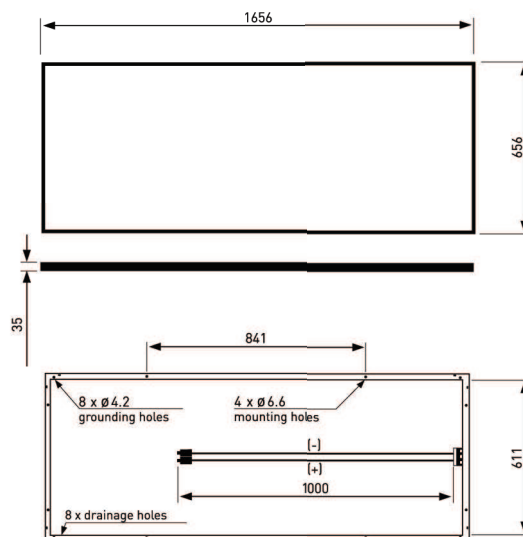
Mechanical Characteristics

Snow/wind load (IEC)		2,400 Pa
Dimensions in mm		1656 x 656 x 35
Weight in kg		17.5
Frame		Black anodised aluminum
Front cover		Anti-reflective coated, textured white tempered glass
Junction box, connector		IP 67, MC-4 compatible
Output cable cross section and length		2.5 mm ² , 1000 mm
Cell type		133 CIGS cells
Safety class		II
Fire rating		Class C

The information contained herein is subject to change without notice.

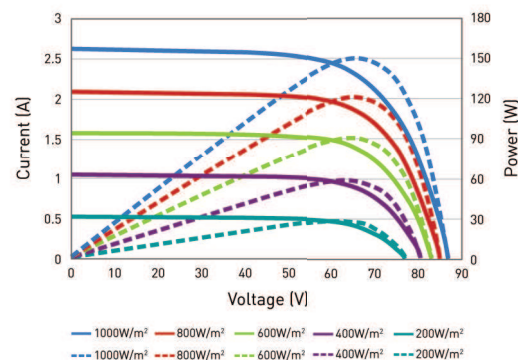
Caution: Read the installation guidelines before using, handling, installing or operating TSMC Solar modules.

Physical Specifications



All measurements in mm

I-V and P-V Curve (TS-150C2)



Performance at Low Irradiance

Typical relative efficiency reduction of maximum power from an irradiance of 1,000 W/m² to 200 W/m² at 25°C is 7%.

Certifications



Safety Class II

tsmc solar.

Get in contact with us!
We look forward to your
call or your e-mail!

THAILAND

OKUMURA&SYSTEMS CO.,LTD.
420/27 h2O Estate, Kanchanapisek Rd.,
Dokmai, Prawet, Bangkok 10250
Tel: 0-2181-5144 Fax: 0-2181-5148

MYANMAR

Okumura Thin Zar Oo & Systems Co.,Ltd.
No. 2, Thiriwaibar Street,Zawana Ward, Thingangyun
Township,Yangon, Myanmar 11071
Tel : (+95)01-855-1348 Mobile : (+95)09-512-8018