

# TS CIGS SERIE

højtydende  
CIGS-solcellemoduler

140 Wp / 145 Wp / 150 Wp / 155 Wp

## Fordele

- Avanceret egen CIGS tyndfilm-teknologi
- Plussortering +5 W til -0 W
- Op til 3% ekstra effekt takket "light soaking" effekt
- Lav temperature koefficient giver øget ydelse
- Æstetisk sort fremtoning m/antirefleks coating
- Moduler med sorteloxerede rammer, som passer med standard montagesystemer
- Forsynet med serie-nummer graveret i rammen for enkel sporbarhed

## Kvalitet og sikkerhed

- IEC, MCS and UL certificeret
- Tåler 2.400 Pa i sne- og vind-last
- Fri for mulig induceret nedbrydning (PID)
- Produceret på en ISO 9001: 2008, ISO 14001 og OHSAS 18001 certified fabrik
- Certificeret for barske omgivelser: korrosion fra salt-tåge (IEC 61701) og flyvende sand (DIN EN 60068-2-68)

## Garantier

- Produkt-garanti\*: 10 år for materialer og produktion
- Effekt-garanti\*: 90% ved 10 år og 80% ved 25 år ved minimum målt output



A TSMC Company

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

Tekniske data

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## højtydende CIGS-solcellemoduler

### Elektriske egenskaber

Standard Test Conditions (STC)

TS CIGS Series		TS-140C1	TS-145C1	TS-150C1	TS-155C1	
Maximum power	$P_{max}$	140	145	150	155	$W_p$
Factory binning		+5/-0	+5/-0	+5/-0	+5/-0	W
Open-circuit voltage	$V_{oc}$	63.1	63.4	63.8	64.3	V
Short-circuit current	$I_{sc}$	3.50	3.51	3.52	3.52	A
Maximum power voltage	$V_{mpp}$	45.3	46.6	47.9	49.2	V
Maximum power current	$I_{mpp}$	3.09	3.11	3.13	3.15	A
Module efficiency	Eff%	12.9	13.3	13.8	14.3	%
Power tolerance <sup>1</sup>		+/-5%				
Maximum reverse current	$I_R$	8 A				
Maximum system voltage		1000 Vdc (IEC), 600 Vdc (UL)				
Operating temperature		-40°C to 85°C				

IV Parameters measured at STC: 1000 W/m<sup>2</sup>, module temperature 25°C, AM 1.5 after factory light soaking. All IV ratings are +/- 10%.

<sup>1</sup> 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	$P_{max}$	106.3	110.1	113.9	117.7	W
Open-circuit voltage	$V_{oc}$	59.2	59.4	59.8	60.3	V
Short-circuit current	$I_{sc}$	2.80	2.81	2.82	2.82	A
Maximum power voltage	$V_{mpp}$	43.0	44.2	45.5	46.7	V
Maximum power current	$I_{mpp}$	2.47	2.49	2.50	2.52	A

Conditions at NOCT: 800 W/m<sup>2</sup>, ambient temperature 20°C, AM 1.5

### Termiske egenskaber

NOCT	46.5 ± 1°C
Temperature Coefficient of $P_{max}$	-0.31% / °C
Temperature Coefficient of $V_{oc}$	-0.29% / °C
Temperature Coefficient of $I_{sc}$	0.01% / °C

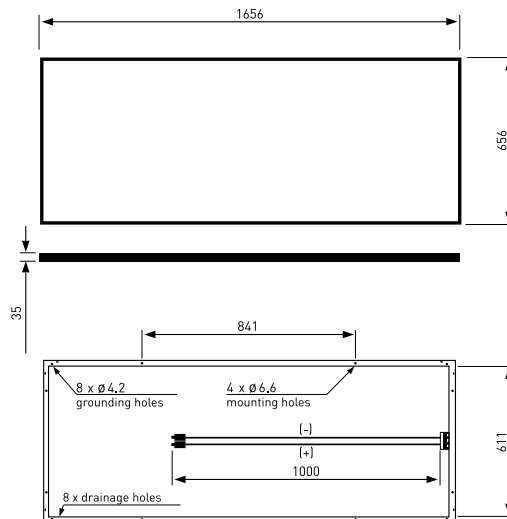
### Mekaniske egenskaber

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	Textured, white tempered front glass
Junction box, connector	IP 67, MC-4 compatible
Output cable cross section and length	2.5 mm <sup>2</sup> , 1000 mm
Cell type	100 CIGS cells
Safety class	II
Fire rating	Class C

The information contained herein is subject to change without notice.

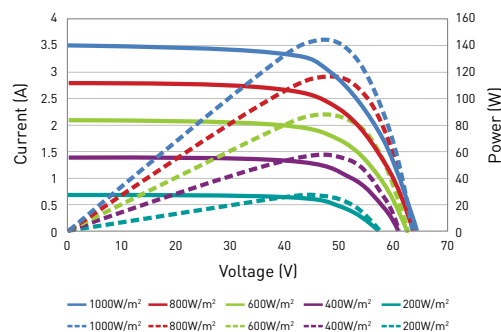
Caution: Read the installation guidelines before using, handling, installing or operating TSMC Solar modules.

### Fysiske specificationer



All measurements in mm

### I-V og P-V kurve (TS-145C1)



### Effekt ved lav solindstråling

Typisk relativ reduktion i effektivitet af maksimum effekt fra en solindstråling på 1.000 W/m<sup>2</sup> til 200 W/m<sup>2</sup> ved 25°C er 5%.

### Certificering



**tsmc solar**

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We look forward to your call or your e-mail!

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