



ALPHA PRO N-Type High-Efficiency Bifacial Module Specification - Bifacial glass-glass
Monocrystalline 6X20 Bifacial Solar Modules
465-500Wp



Electrical Data

Electrical Data under Different Bifacial Gains (Using TS60-CMH-500 H6QT as an Example)

Model			TS60-CMH-465 H6QT	TS60-CMH-470 H6QT	TS60-CMH-475 H6QT	TS60-CMH-480 H6QT	TS60-CMH-485 H6QT	TS60-CMH-490 H6QT	TS60-CMH-495 H6QT	TS60-CMH-500 H6QT	Bifacial Gain					
Max. power at STC	Pmax	W	465	470	475	480	485	490	495	500	Max. power at STC	Pmax	W	525	550	600
Max. power voltage	Vmp	V	34.89	35.05	35.21	35.38	35.54	35.7	35.84	36.00	Max. power voltage	Vmp	V	36.00	36.00	36.00
Max. power current	Imp	A	13.33	13.41	13.49	13.57	13.65	13.73	13.81	13.89	Max. power current	Imp	A	14.58	15.28	16.67
Open circuit voltage	Voc	V	42.22	42.38	42.54	42.71	42.86	43.02	43.18	43.34	Open circuit voltage	Voc	V	43.34	43.34	43.34
Short circuit current	Isc	A	14.07	14.15	14.23	14.31	14.39	14.48	14.56	14.64	Short circuit current	Isc	A	15.37	16.10	17.57
Module Conversion Eff.		%	21.4%	21.7%	21.9%	22.1%	22.4%	22.6%	22.8%	23.1%	Module Conversion Eff.		%	24.2%	25.4%	27.7%

* Under Standard Test Condition(1,000W/m²,25°C,AM 1.5): Power Tolerance ±3%, Voc Tolerance ±3%, Isc Tolerance ±3%
 * Module Conversion Eff. (%) = [Max power at STC(w) / ((Solar Module Area(m²) × 1000 (w/m²))] × 100%
 * Backside Gain: The additional power gain obtained from the backside of the module relative to the frontside power under standard test conditions, which depends on the installation of the module (including structure, height, tilt angle, etc.) and ground reflectivity conditions.

General Data

Operation Conditions

Temperature Coefficient

Cell type	Monocrystalline N-Type solar cell
Cell per module	Mono-crystalline silicon N-Type solar cell (120pcs)
Front	2.0 mm, AR-coating, semi-tempered
Encapsulant Film	POE/EVA
Rear	2.0 mm, semi-tempered
Frame	6005 T6 Anodized aluminum
Junction Box	IP/68
Connector	EVO-2 Compatible
Cable	(+)300mm,(-) 200mm or customized length / 4mm ²

Max. system voltage	1500V
Module fire resistance class	Class C
Protection Class (IEC 61140)	Class II
Series fuse rating	30 A
Number of bypass diodes	3
Temperature range	-40 to +85°C
Max. mechanical load	5400 Pa

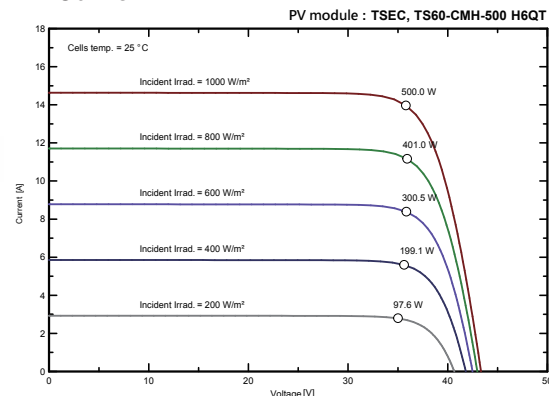
* Please follow installation manual provided by TSEC

Nominal Operating Cell Temperature	NOCT °C	45±2
TC Isc	α %/ °C	0.045
TC Voc	β %/ °C	- 0.25
TC Pmax	γ %/ °C	- 0.29

Module Dimensions and Weight

Dimension	1908 x 1134 x 30 mm
Weight(2.0+2.0mm glass)	27.8 kg

IV Curve

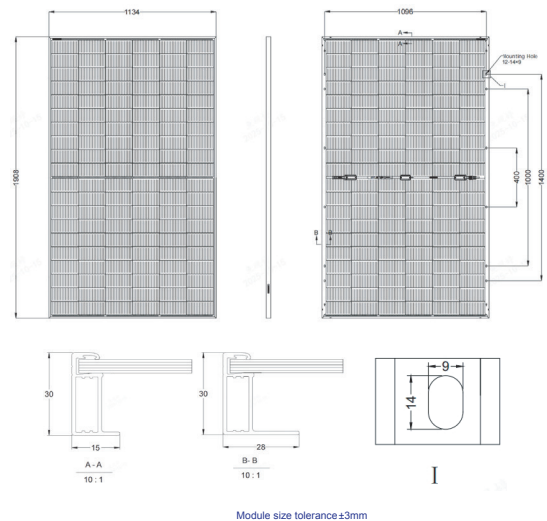


Certifications

- IEC 61215:2021 \ IEC 61730-1:2023 & IEC 61730-2:2023
- ISO 9001:2015 Quality management system
- ISO 14001:2015 Environmental management system
- ISO 45001:2018 Occupational health and safety management system

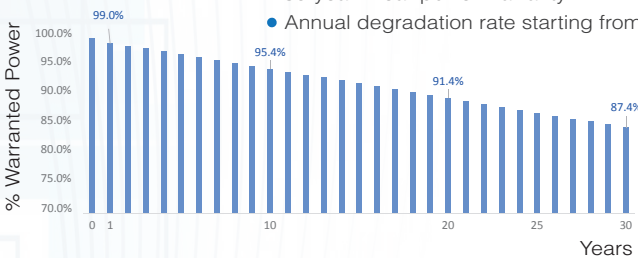


Engineering Drawing(mm)



Warranty

- 15-year materials and workmanship warranty
- 30-year linear power warranty
- Annual degradation rate starting from the second year : 0.4%



Made in Taiwan

* The information in this document is subject to change without notice * TSEC reserves the rights of final interpretation and revision of datasheet * Version : Rev.5, March 2026

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