



ALPHA TOPCon T Type Bifacial Module Specification - Transparent Backsheet

Monocrystalline 6X20 Bifacial Solar Modules (182mm Solar Cell)

475-505Wp



Electrical Data

Model			TS60-CMH-475 H2				TS60-CMH-480 H2				TS60-CMH-485 H2				TS60-CMH-490 H2				TS60-CMH-495 H2				TS60-CMH-500 H2				TS60-CMH-505 H2			
			Bifacial Gain				Bifacial Gain				Bifacial Gain				Bifacial Gain				Bifacial Gain				Bifacial Gain				Bifacial Gain			
			Front	5%	10%	20%	Front	5%	10%	20%	Front	5%	10%	20%	Front	5%	10%	20%	Front	5%	10%	20%	Front	5%	10%	20%	Front	5%	10%	20%
Max. power at STC	P _{max}	W	475	499	523	570	480	504	528	576	485	509	534	582	490	515	539	588	495	520	545	594	500	525	550	600	505	530	556	606
Max. power voltage	V _{mp}	V	36.12	36.12	36.12	36.12	36.26	36.26	36.26	36.26	36.45	36.45	36.45	36.45	36.64	36.64	36.64	36.64	36.83	36.83	36.83	36.83	37.02	37.02	37.02	37.02	37.2	37.20	37.20	37.20
Max. power current	I _{mp}	A	13.16	13.82	14.48	15.79	13.24	13.90	14.56	15.89	13.32	13.99	14.65	15.98	13.40	14.07	14.74	16.08	13.48	14.15	14.83	16.18	13.56	14.24	14.92	16.27	13.64	14.32	15.00	16.37
Open circuit voltage	V _{oc}	V	42.54	42.54	42.54	42.54	42.73	42.73	42.73	42.73	42.92	42.92	42.92	42.92	43.11	43.11	43.11	43.11	43.3	43.30	43.30	43.30	43.49	43.49	43.49	43.49	43.68	43.68	43.68	43.68
Short circuit current	I _{sc}	A	13.83	14.52	15.21	16.60	13.92	14.62	15.31	16.70	14.01	14.71	15.41	16.81	14.1	14.81	15.51	16.92	14.19	14.90	15.61	17.03	14.28	14.99	15.71	17.14	14.37	15.09	15.81	17.24
Module Conversion Eff.		%	22.0%	23.1%	24.2%	26.4%	22.2%	23.3%	24.4%	26.6%	22.4%	23.5%	24.7%	26.9%	22.7%	23.8%	24.9%	27.2%	22.9%	24.0%	25.2%	27.5%	23.1%	24.3%	25.4%	27.7%	23.4%	24.5%	25.7%	28.0%

* 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

Cell type	Monocrystalline TOPCon solar cell
Cell per module	Mono-crystalline silicon TOPCon solar cell (120pcs)
Front	PV Coated glass
Encapsulant Film	Low water vapor transmission rate (WVTR) material
Rear	Backsheet
Frame	Anti-Salt Mist frame
Junction Box	IP68
	
Connector	EVO-2 Compatible
Cable	1500mm / 12 AWG / 4mm ²

Operation Conditions

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	

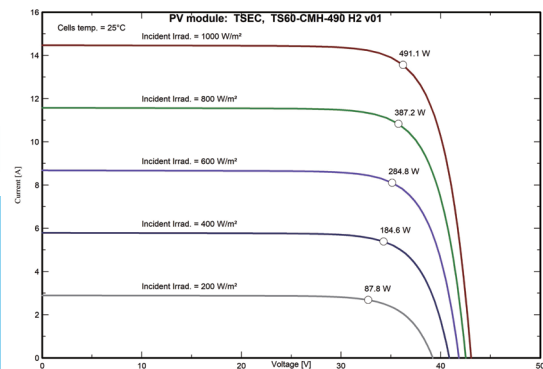
Module Dimensions and Weight

Dimension	1908 x 1134 x 35mm
Weight	23.5 Kg

Temperature Coefficient

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

IV Curve



Certifications

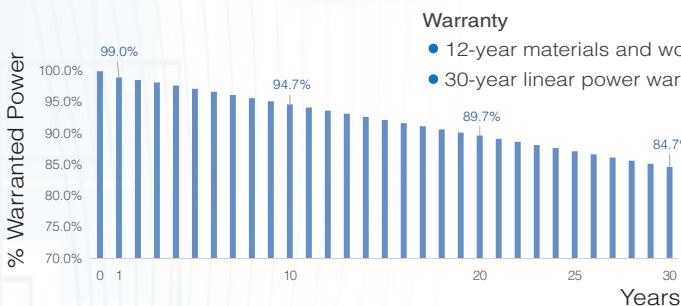
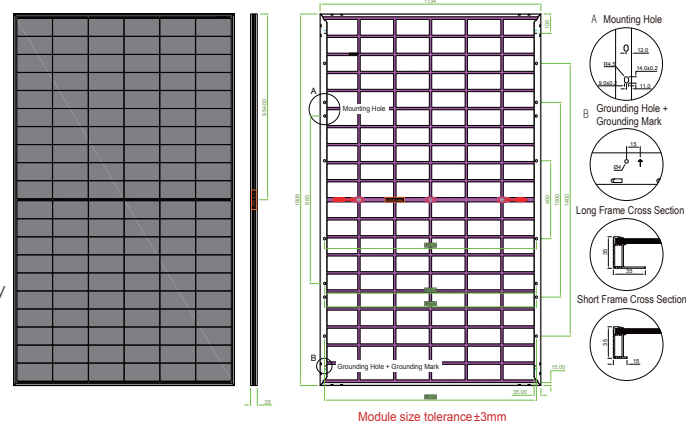
- IEC 61215:2021、IEC 61730-1:2023 & IEC 61730-2:2023、UL 61730
- ISO 9001:2015 Quality management system
- ISO 14001:2015 Environmental management system
- ISO 45001:2018 Occupational health and safety management system



Management System
ISO 9001:2015
ISO 14001:2015
ISO 45001:2018
www.tuv.com
ID: 9105085471



Engineering Drawing(mm)



Warranty

- 12-year materials and workmanship warranty
- 30-year linear power warranty

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.12, March 2025

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