ALPHA PRO N-Type High-Efficiency Bifacial Module Specification - Bifacial glass-glass

Monocrystalline 6X18 Bifacial Solar Modules

420-450Wp

Electrical Data

Model			TS54-CMH-420 H6QT	TS54-CMH-425 H6QT	TS54-CMH-430 H6QT	TS54-CMH-435 H6QT	TS54-CMH-440 H6QT	TS54-CMH-445 H6QT	TS54-CMH-450 H6QT
Max. power at STC	Pmax	W	420	425	430	435	440	445	450
Max. power voltage	Vmp	V	31.51	31.7	31.88	32.07	32.26	32.45	32.59
Max. power current	Imp	A	13.33	13.41	13.49	13.57	13.65	13.73	13.81
Open circuit voltage	Voc	V	38.11	38.3	38.49	38.68	38.87	39.06	39.25
Short circuit current	Isc	A	14.07	14.15	14.23	14.3	14.37	14.44	14.51
Module Conversion Eff.		%	21.5%	21.7%	22.0%	22.2%	22.5%	22.7%	23.0%

Electrical Data under Different Bifacial Gains (Using TS54-CMH-450 H6QT as an Example)

Bifacial Gain			5%	10%	20%
Max. power at STC	Pmax	W	473	495	540
Max. power voltage	Vmp	V	32.59	32.59	32.59
Max. power current	Imp	A	14.50	15.19	16.57
Open circuit voltage	Voc	V	39.25	39.25	39.25
Short circuit current	Isc	A	15.24	15.96	17.41
Module Conversion Eff.		%	24.1%	25.3%	27.6%

* 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(㎡) x 1000 (w/㎡))] x 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 N-Type solar cell
Cell per module	Mono-crystalline silicon N-Type solar cell (108pcs)
Front	2.0 mm, AR-coating, semi-tempered
Encapsulant Flim	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

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

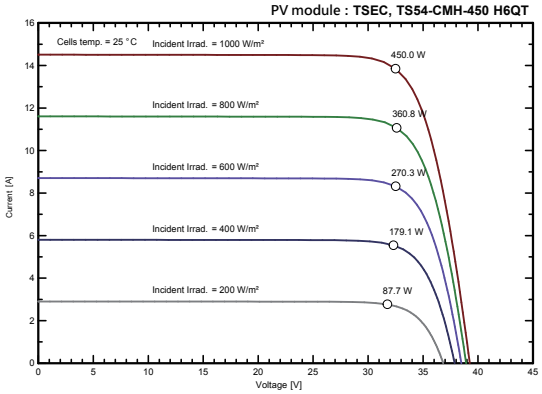
Module Dimensions and Weight

Dimension	1722 x 1134 x 30 mm
Weight(2.0+2.0mm glass)	25.3 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



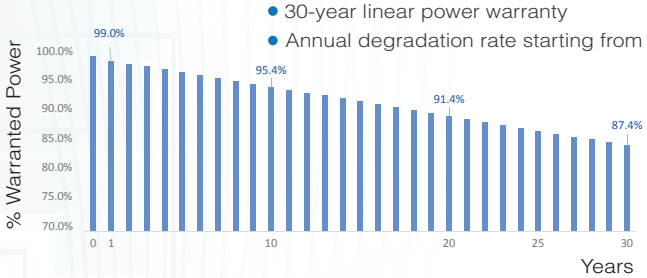
Certifications

- IEC 61215:2021、IEC 61730-1:2023 & IEC 61730-2:2023
- ISO 9001:2015 Quality management system

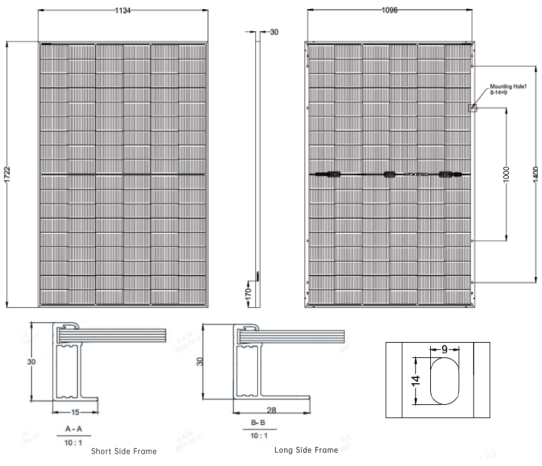
ISO 9001
26QMA16904

Warranty

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



Engineering Drawing(mm)



Module size tolerance ±3mm

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.6, October 2026

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