



ALPHA N-Type High-Efficiency Bifacial Module Specification - Transparent Backsheet

Monocrystalline 6X18 Bifacial Solar Modules

425-455Wp



Electrical Data

Model	TS54-CMH-425 H2					TS54-CMH-430 H2					TS54-CMH-435 H2					TS54-CMH-440 H2					TS54-CMH-445 H2					TS54-CMH-450 H2					TS54-CMH-455 H2				
	Front	Bifacial Gain				Front	Bifacial Gain				Front	Bifacial Gain				Front	Bifacial Gain				Front	Bifacial Gain				Front	Bifacial Gain				Front	Bifacial Gain			
		5%	10%	20%			5%	10%	20%			5%	10%	20%			5%	10%	20%			5%	10%	20%			5%	10%	20%			5%	10%	20%	
Max. power at STC	P _{max}	W	425	446	468	510	430	452	473	516	435	457	479	522	440	462	484	528	445	467	490	534	450	473	495	540	455	478	501	546					
Max. power voltage	V _{mp}	V	33.01	33.01	33.01	33.01	33.16	33.16	33.16	33.35	33.35	33.35	33.35	33.52	33.52	33.52	33.52	33.71	33.71	33.71	33.71	33.89	33.89	33.89	33.89	34.04	34.04	34.04	34.04						
Max. power current	I _{mp}	A	12.90	13.55	14.19	15.48	12.98	13.63	14.28	15.58	13.06	13.71	14.37	15.67	13.14	13.80	14.45	15.77	13.22	13.88	14.54	15.86	13.30	13.97	14.63	15.96	13.38	14.05	14.72	16.06					
Open circuit voltage	V _{oc}	V	38.87	38.87	38.87	38.87	39.06	39.06	39.06	39.25	39.25	39.25	39.25	39.44	39.44	39.44	39.44	39.63	39.63	39.63	39.63	39.82	39.82	39.82	39.82	40.01	40.01	40.01	40.01						
Short circuit current	I _{sc}	A	13.48	14.15	14.83	16.18	13.57	14.25	14.93	16.28	13.66	14.34	15.03	16.39	13.75	14.44	15.13	16.50	13.84	14.53	15.22	16.61	13.93	14.63	15.32	16.72	14.02	14.72	15.42	16.82					
Module Conversion Eff.		%	21.7%	22.8%	23.9%	26.1%	22.0%	23.1%	24.2%	26.4%	22.3%	23.3%	24.4%	26.7%	22.5%	23.6%	24.7%	27.0%	22.8%	23.9%	25.0%	27.3%	23.0%	24.1%	25.3%	27.6%	23.3%	24.4%	25.6%	27.9%					

* 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)) x 1000 (w/m²))] 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 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 / 4mm²

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 1723 x 1134 x 35mm

Weight 21.5±5% Kg

Temperature Coefficient

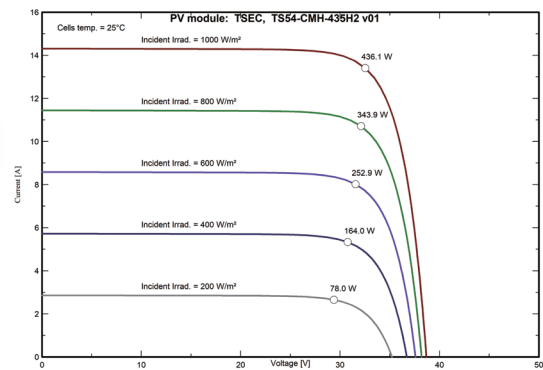
Nominal Operating NOCT °C 45±2
Cell Temperature

TC Isc α %/°C 0.045

TC Voc β %/°C - 0.25

TC Pmax γ %/°C - 0.29

IV Curve



Certifications

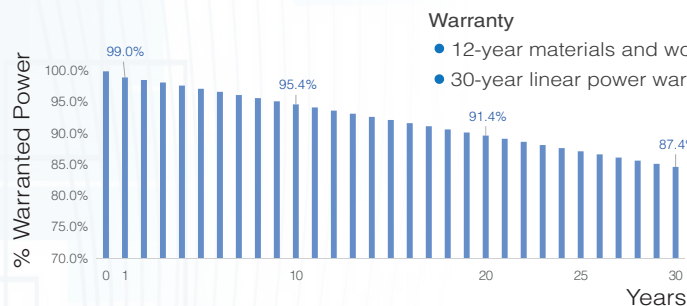
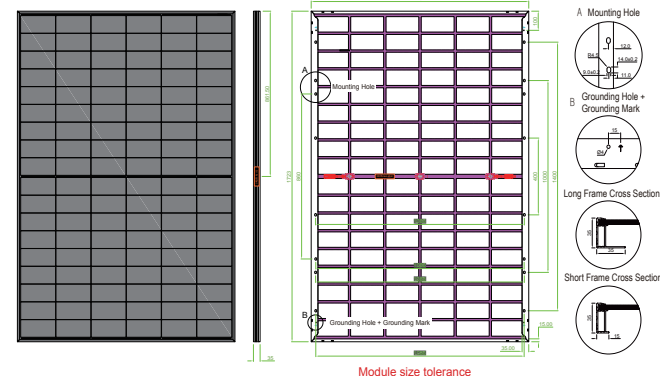
- IEC 61215:2021、IEC 61730-1:2023 & IEC 61730-2:2023、UL 61730
- ISO 9001:2015 Quality management system
- ISO 14001:2015 Environmental management system
- ISO 45001:2018 Occupational health and safety management system



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

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