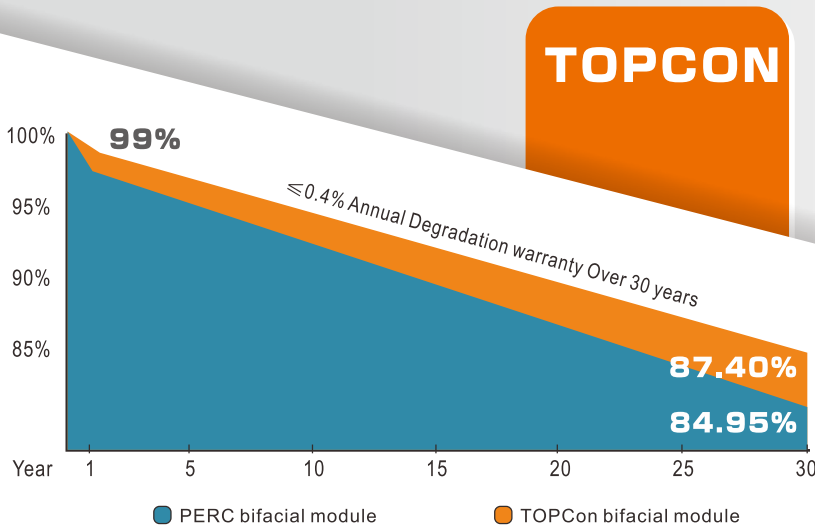


DOUBLE-GLASS BIFACIAL N-TYPE 440~455 Watt



Cutting Free Technology
Minimized micro-crack



Anti-PID (potential induced degradation)
Passed anti-PID test under 85% damp heat
85% relative humidity for 96 hours



Higher Power Output
Lower shading and resistive loss



Outstanding mechanical load resistance
2400 Pa wind load, 5400 Pa snow load



15-year product warranty
30-year linear power output



CEC Listed



IEC 61215, IEC 61730
ISO 9001: 2015 (Quality management systems)
ISO 14001: 2015 (Environmental management systems)
ISO 45001: 2018 (Occupational health and safety)
UNI 9177 Ia CLASSE DI REAZIONE AL FUOCO:1



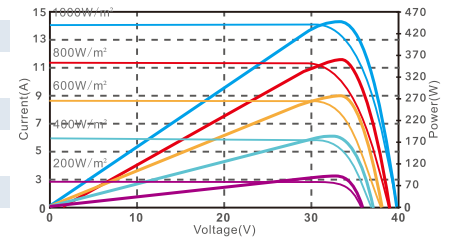
TOPCON (N TYPE) 440~455Watt



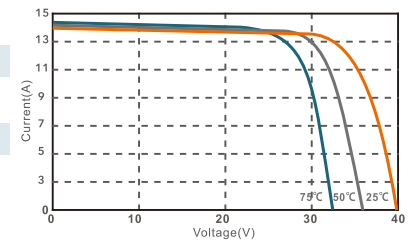
ELECTRICAL SPECIFICATIONS I-V CURVE[450W]

Module Type	UL-440M-108BDGN		UL-445M-108BDGN		UL-450M-108BDGN		UL-455M-108BDGN	
	STC*	NOCT*	STC*	NOCT*	STC*	NOCT*	STC*	NOCT*
Maximum Power (Pmax)	W 440	333	445	337	450	341	455	345
Maximum Power Voltage (Vmp)	V 32.81	30.19	33.02	30.38	33.22	30.56	33.42	30.75
Maximum Power Current (Imp)	A 13.41	11.05	13.48	11.10	13.55	11.16	13.61	11.21
Open-circuit Voltage (Voc)	V 39.38	35.84	39.58	36.02	39.78	36.20	39.98	36.38
Short-circuit Current (Isc)	A 13.86	11.18	13.93	11.24	14.00	11.29	14.06	11.34
Module Efficiency STC	% 22.02		22.27		22.52		22.77	
Operating Temperature	-40°C~85°C							
Maximum system voltage	DC1500V(IEC)							
Maximum series fuse rating	25 A							
Power tolerance	0~+5 Watt							
Temperature coefficients of Pmax	-0.29%/°C							
Temperature coefficients of Voc	-0.250%/°C							
Temperature coefficients of Isc	0.046%/°C							
Nominal operating cell temperature (NOCT)	43±2°C							

I-V characteristics at different irradiances



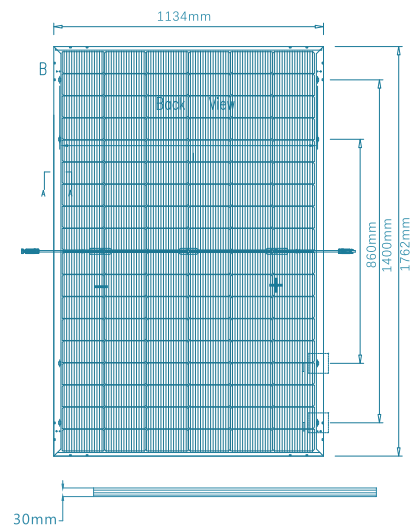
I-V characteristics at different temperature



*STC : Cell temperature: 25°C, Irradiance: 1000 W/m², Air mass: 1.5G
 *NOTC : Air temperature: 20°C, Irradiance: 800 W/m², Air mass: 1.5G, Wind speed: 1 m/s

SPECIFICATIONS

Cell Type	182.2×94mm N type Mono-crystalline
No. of cells	108 (6×9×2)
Dimensions	1762*1134*30mm
Weight	25.2Kg
Glass	2.0mm+2.0mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass
Junction Box	IP68, 3 diodes
Connector	MC4 Compatible
Cable Length (Including Connector)	4mm² Portrait: (+)400 mm/(-) 200mm Landscape: (+) 1100mm/(-)1100 mm
Packaging Configuration	Two Box=One pallet 36pcs/Box, 72pcs/Pallet, 936pcs/40HQ Container



Electrical characteristics with different rear side power gain (reference to 450 W front)

Pmax/W	Voc/V	Isc/A	Vmp/V	Imp/A	Pmax gain
450	39.80	14.00	33.20	13.55	0
473	39.80	14.70	33.20	14.22	5%
495	39.80	15.40	33.20	14.90	10%
518	39.80	16.10	33.20	15.58	15%
540	39.80	16.80	33.20	16.26	20%
563	39.80	17.50	33.20	16.93	25%
585	39.80	18.20	33.20	17.61	30%

