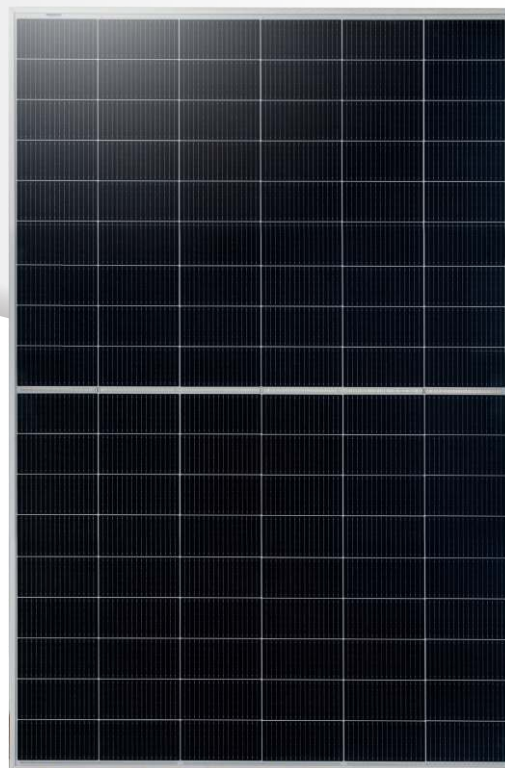
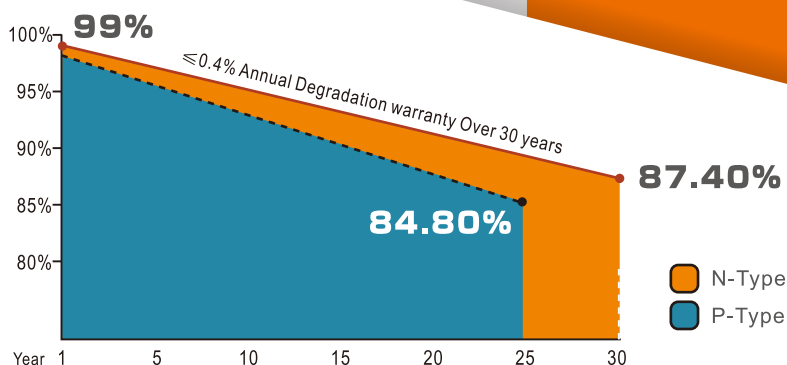


MONO-FACIAL MODULE N-TYPE 450~465 Watt

TOPCON



15-year product warranty
30-year linear power output



Global Tier 1 brand as announced by Bloomberg NEF



Higher Power Output
Lower shading and resistive loss



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



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



Cutting Free Technology
Minimized micro-crack



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

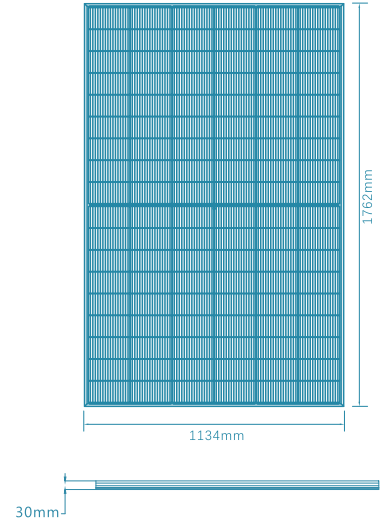


TOPCON (N TYPE) 450~465Watt



ELECTRICAL SPECIFICATIONS

Module Type	UL-450M-108HVN		UL-455M-108HVN		UL-460M-108HVN		UL-465M-108HVN		
	STC*	NOCT*	STC*	NOCT*	STC*	NOCT*	STC*	NOCT*	
Maximum Power (Pmax)	W	450	341	455	345	460	349	465	352
Maximum Power Voltage (Vmp)	V	33.22	30.56	33.42	30.75	33.63	30.94	33.83	31.12
Maximum Power Current (Imp)	A	13.55	11.16	13.61	11.21	13.68	11.27	13.75	11.32
Open-circuit Voltage (Voc)	V	39.78	36.20	39.98	36.38	40.18	36.56	40.38	36.75
Short-circuit Current (Isc)	A	14.00	11.29	14.06	11.34	14.13	11.40	14.20	11.45
Module Efficiency STC	%	22.52		22.77		23.02		23.27	
Operating Temperature	-40°C~85°C								
Maximum system voltage	DC1500V(IEC)								
Maximum series fuse rating	25A								
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								

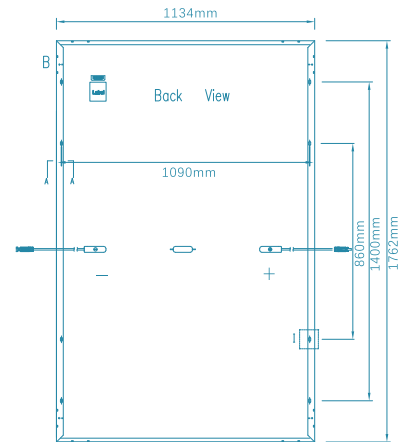


*STC : Cell temperature: 25°C, Irradiance: 1000 W/m², Air mass: 1.5G

*NOCT : Air temperature: 20°C, Irradiance: 800 W/m², Air mass: 1.5G, Wind speed: 1 m/s

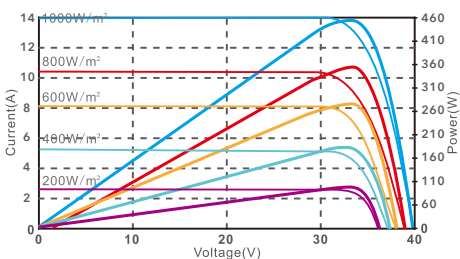
SPECIFICATIONS

Cell Type	182.2x94mm N type Mono-crystalline
No. of cells	108 (6×9×2)
Dimensions	1762*1134*30mm
Weight	22Kg
Front Glass	3.2mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass
Junction Box	IP68, 3 diodes
Connector	MC4 Compatible
Cable Length (Including Connector)	4mm ² Portrait: (+)400 mm/(-) 200mm Landscape: (+) 1100mm/(-)1100 mm
Packaging Configuration	Two Box=One pallet 36pcs/Box, 72pcs/Pallet, 936pcs/40HQ Container

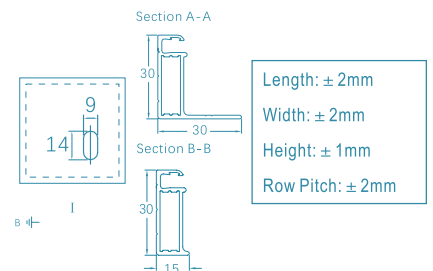
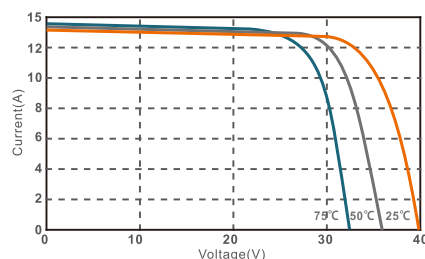


I-V CURVE [455W]

I-V characteristics at different irradiances



I-V characteristics at different temperature



Specifications included in this datasheet are subject to change without notice.

Ulica Solar reserves the right of final interpretation.

