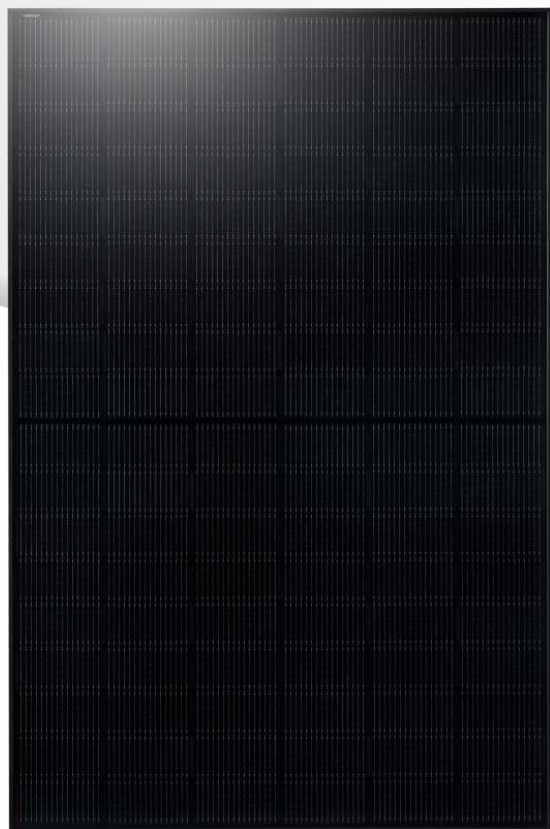
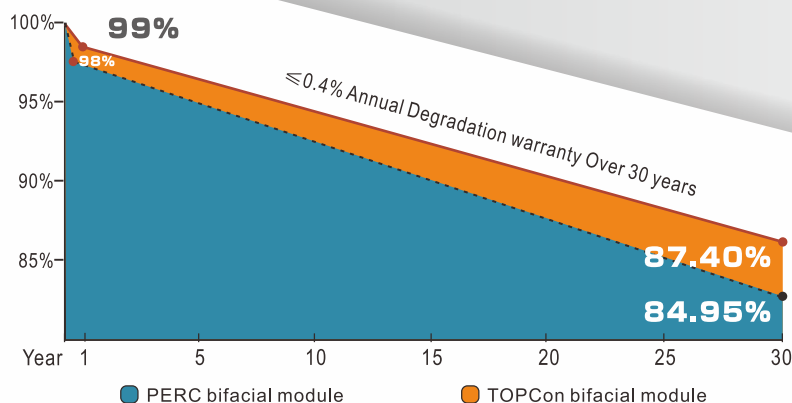


Black Jade Series

DOUBLE-GLASS BIFACIAL N-TYPE MODULE

440~450 W



Cutting Free Technology
Minimized micro-crack



Bifacial Mono Module
Capable of generating power at back side, at least 80% efficiency of the front side



Anti-PID (potential induced degradation)
Passed anti-PID test under 85°C damp heat 85% relative humidity for 192 hours



Lower LCOE
Lower shading and resistive loss
Lower temperature coefficient



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



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TOPCon(N TYPE) 440~450Watt

ELECTRICAL SPECIFICATIONS

Module Type	UL-440M-108BDGN		UL-445M-108BDGN		UL-450M-108BDGN		
	STC* NOCT*		STC* NOCT*		STC* NOCT*		
Maximum Power (Pmax)	W	440	333	445	337	450	341
Maximum Power Voltage (Vmp)	V	32.91	30.28	33.02	30.38	33.22	30.56
Maximum Power Current (Imp)	A	13.37	11.01	13.48	11.10	13.55	11.16
Open-circuit Voltage (Voc)	V	39.38	35.84	39.58	36.02	39.78	36.20
Short-circuit Current (Isc)	A	14.22	11.47	14.30	11.53	14.38	11.60
Module Efficiency STC	%	22.02		22.27		22.52	
Operating Temperature	-40°C~85°C						
Maximum system voltage	DC1500V(IEC)						
Maximum series fuse rating	30A						
Power tolerance	0~+5Watt						
Temperature coefficients of Pmax	-0.29%/°C						
Temperature coefficients of Voc	-0.25%/°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

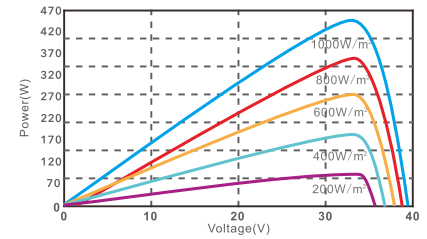
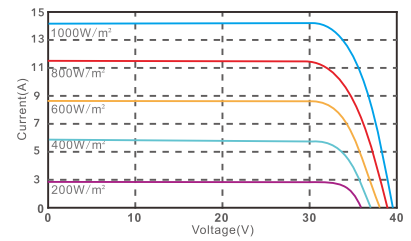
Cell Type	N type Mono-crystalline	
No. of cells	108(6×9×2)	
Dimensions	1762*1134*30mm	
Weight	24.0kg	
Glass	2.0mm+2.0mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass	
Junction Box	IP68, 3diodes	
Connector	Stäubli MC4-EVO2	
Cable Length (Including Connector)	4mm ² Landscape: (+)1200/(-)1200mm or Customized Length	
Packaging Configuration	Two Box=One Pallet 36pcs/Box, 72pcs/Pallet, 936pcs/40HQ Container	

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

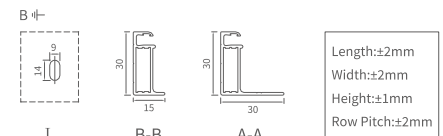
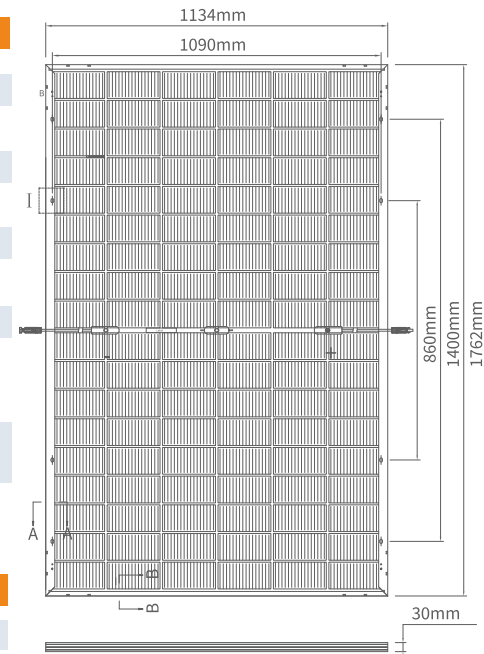
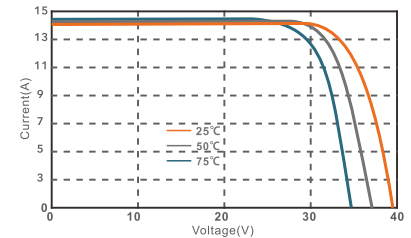
Pmax/W	Voc/V	Isc/A	Vmp/V	Imp/A	Pmax gain
450	39.78	14.38	33.22	13.55	0%
473	39.78	15.10	33.22	14.22	5%
495	39.78	15.82	33.22	14.90	10%
518	39.78	16.54	33.22	15.58	15%
540	39.78	17.26	33.22	16.26	20%
563	39.78	17.98	33.22	16.93	25%
585	39.78	18.69	33.22	17.61	30%

I-V CURVE

I-V characteristics at different irradiances (reference to 450W)



I-V characteristics at different temperature



Length: ±2mm
Width: ±2mm
Height: ±1mm
Row Pitch: ±2mm



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

Ulica Solar reserves the right of final interpretation.

Version No.: UL-1762-108BDGNHHC-30-EN-V1.0