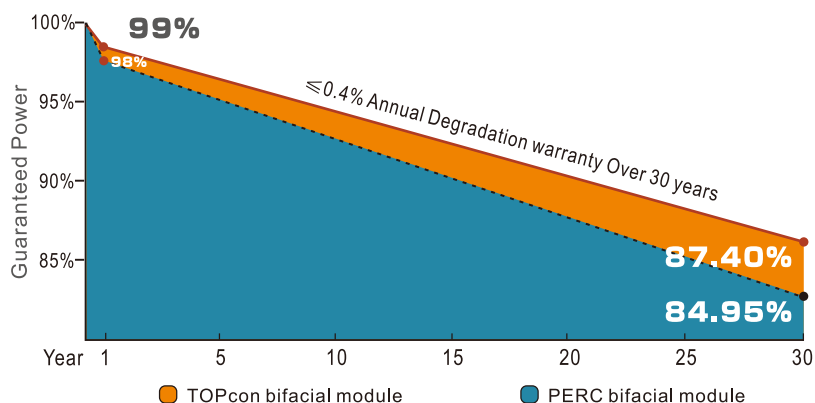


QIN Series

DOUBLE-GLASS BIFACIAL N-TYPE 645~660 Watt



Global Patent
Innovation Composite Finger Technology



Higher Output
Same dimension 40W higher, Module power up to 660W
Module efficiency up to 24.43%



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 la CLASSE DI REAZIONE AL FUOCO: 1



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TOPCon(N TYPE)645~660Watt

ELECTRICAL SPECIFICATIONS

Module Type		UL-645M-144CDGN		UL-650M-144CDGN		UL-655M-144CDGN		UL-660M-144CDGN	
		STC* NOCT*		STC* NOCT*		STC* NOCT*		STC* NOCT*	
Maximum Power (Pmax)	W	645	489	650	493	655	496	660	500
Maximum Power Voltage (Vmp)	V	45.08	41.47	45.18	41.57	45.28	41.66	45.38	41.75
Maximum Power Current (Imp)	A	14.31	11.79	14.39	11.85	14.47	11.92	14.54	11.98
Open-circuit Voltage (Voc)	V	53.58	48.76	53.68	48.85	53.78	48.94	53.88	49.03
Short-circuit Current (Isc)	A	15.04	12.14	15.12	12.20	15.20	12.27	15.28	12.33
Module Efficiency STC	%	23.88		24.06		24.25		24.43	
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

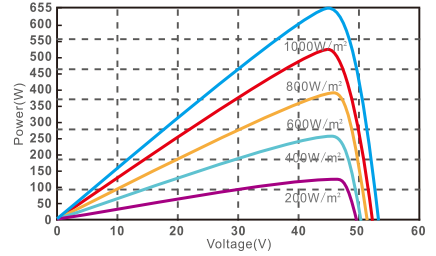
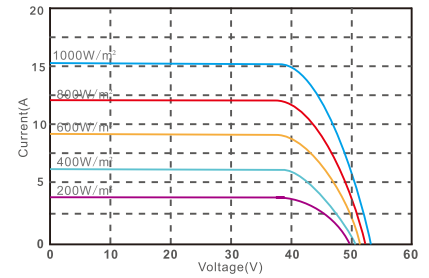
Cell Type	N type Mono-crystalline	
No. of cells	144 (6×12×2)	
Dimensions	2382*1134*30mm	
Weight	32.0kg	
Glass	2.0mm+2.0mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass	
Junction Box	IP68, 3 diodes	
Connector	MC4 Compatible	
Cable Length (Including Connector)	Landscape: (+)1400mm/(-)1400mm or Customized Length	
Packaging Configuration	Two Box=One pallet 36pcs/Box, 72pcs/Pallet, 720pcs/40HQ Container	

Electrical characteristics with different rear side power gain(reference to 655 W front)

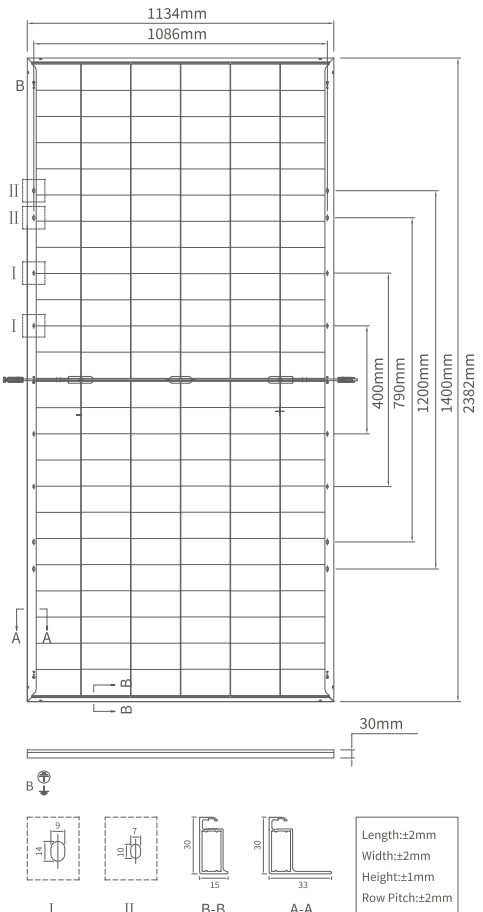
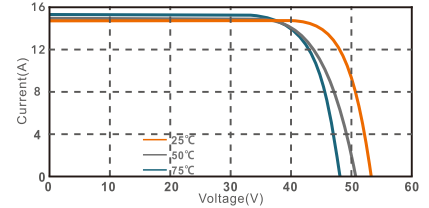
Pmax/W	Voc/V	Isc/A	Vmp/V	Imp/A	Pmax gain
655	53.78	15.20	45.28	14.47	0%
688	53.78	15.96	45.28	15.19	5%
721	53.78	16.72	45.28	15.92	10%
753	53.78	17.48	45.28	16.64	15%
786	53.78	18.24	45.28	17.36	20%
819	53.78	19.00	45.28	18.09	25%
852	53.78	19.76	45.28	18.81	30%

I-V CURVE

I-V characteristics at different irradiances (reference to 655 W)



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.

Version number: QIN-UL-2382-144CDGNYBC-30-EN-V1.0