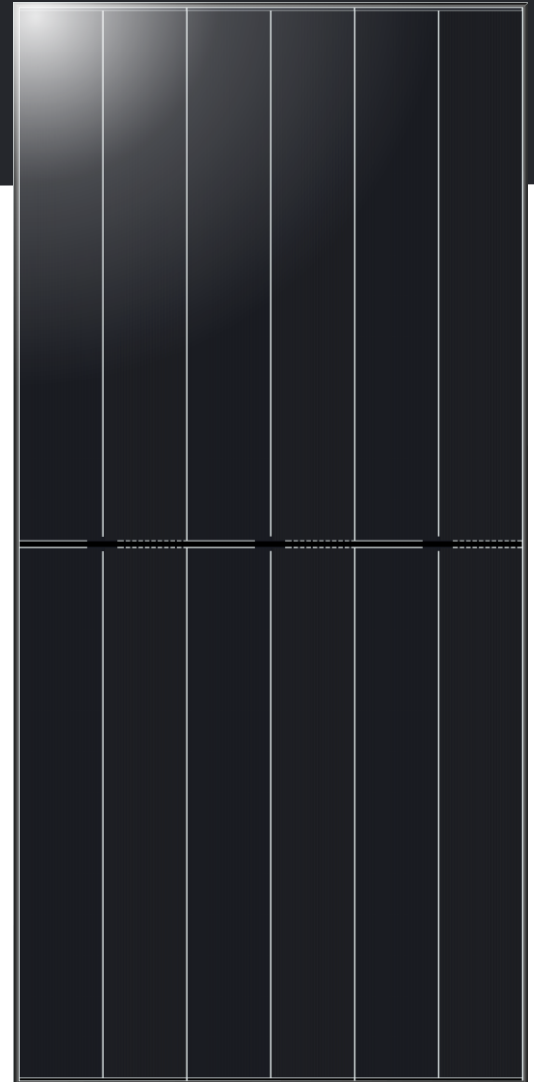
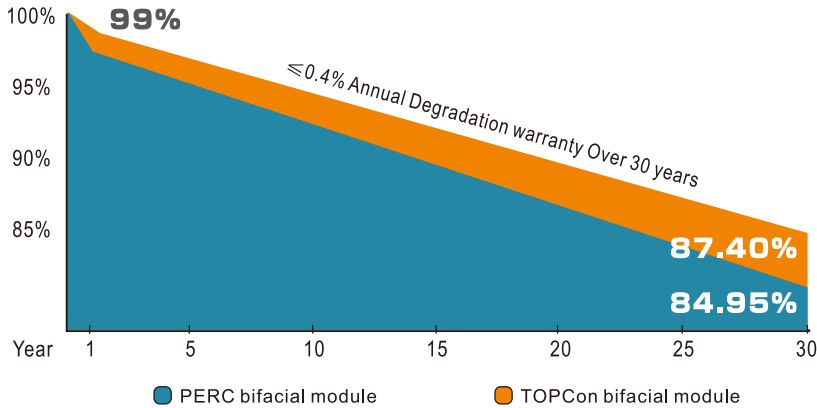


QIN Series

DOUBLE-GLASS BIFACIAL N-TYPE 635~650 Watt



Global Patent
Innovation Composite Finger Technology



Higher Output
Same dimension 30W higher, Module power up to 650W
Module efficiency up to 24.06%



Bifacial Mono Module
Capable of generating power at back side, at least 85% efficiency of the front side



Anti-PID (potential induced degradation)
Passed anti-PID test under 85% 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 15-year product warranty
30 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

Add: No. 238 Yunlin Middle Road, Wangchun Industrial District, Ningbo, China

Tel: +86-574-28828939

Email: sales@ulsolar.com.cn

Fax: +86-574-28828997

Web: www.ulicasolar.com



TOPCon(N TYPE) 635~650Watt



ELECTRICAL SPECIFICATIONS

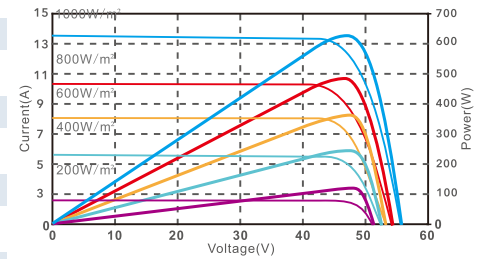
Module Type	UL-635M-144CDGN		UL-640M-144CDGN		UL-645M-144CDGN		UL-650M-144CDGN		
	STC*	NOCT*	STC*	NOCT*	STC*	NOCT*	STC*	NOCT*	
Maximum Power (Pmax)	W	635	482	640	485	645	489	650	493
Maximum Power Voltage (Vmp)	V	44.48	42.25	44.58	42.35	44.68	42.45	44.77	42.54
Maximum Power Current (Imp)	A	14.28	11.40	14.36	11.46	14.44	11.52	14.52	11.59
Open-circuit Voltage (Voc)	V	52.59	49.96	52.69	50.06	52.79	50.15	52.90	50.25
Short-circuit Current (Isc)	A	15.18	12.12	15.27	12.19	15.35	12.26	15.43	12.32
Module Efficiency STC	%	23.51		23.69		23.88		24.06	
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	0.045%/°C								
Nominal operating cell temperature (NOCT)	43±2°C								

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

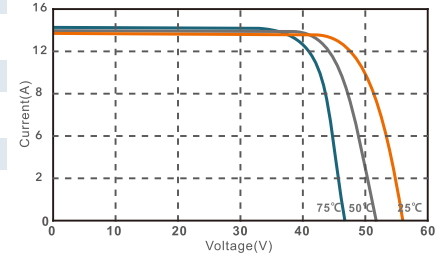
*NOCT : Air temperature: 20°C, Irradiance: 800 W/m², Air mass: 1.5G, Wind speed: 1 m/s

I-V CURVE

I-V characteristics at different irradiances

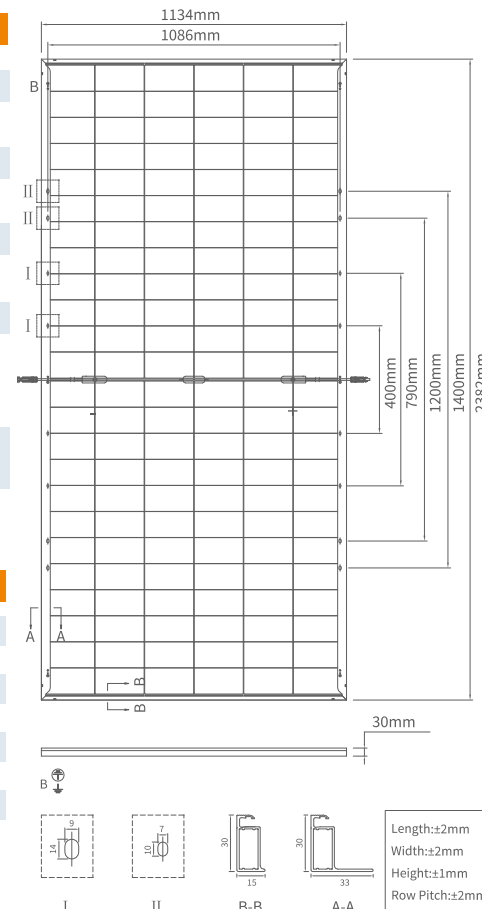


I-V characteristics at different temperature



SPECIFICATIONS

Cell Type	N type Mono-crystalline
No. of cells	144(6×12×2)
Dimensions	2382*1134*30mm
Weight	32kg
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)	4m Portrait: (+)400/(-)200mm Landscape: (+)1400/(-)1400mm
Packaging Configuration	Two Box=One Pallet 36pcs/Box, 72pcs/Pallet, 720pcs/40HQ Container



Electrical characteristics with different rear side power gain (reference to 650 W front)

Pmax/W	Voc/V	Isc/A	Vmp/V	Imp/A	Pmax gain
650	52.90	15.43	44.77	14.52	0
683	52.90	16.09	44.77	15.13	5%
715	52.90	16.75	44.77	15.75	10%
748	52.90	17.40	44.77	16.37	15%
780	52.90	18.06	44.77	16.99	20%
813	52.90	18.71	44.77	17.60	25%
845	52.90	19.37	44.77	18.22	30%

