

182 Series 440–460W

All Black N-type Half-cell Module

POWER OUTPUT RANGE	⊘
MAXIMUM MODULE EFFICIENCY	\odot
POWER WARRANTY 30 years	

Characteristic



Higher Power Output

Multi-busbar technology 1500V system voltage, reduce the BOS cost



Ultra-low Degradation

N-type modules are more reliable with less LID/LETID





Excellent Anti-PID Performance, guarantee less power degradation



Guaranteed Output Power

Module power positive tolerance; High power generation;Low levelized cost of energy



Best Solution to Harsh Conditions

Pass the mechanical load test, front 5400Pa and back 2400Pa



High Reliability Based On Strict Quantity.Control

Over 100 internal tests including ultraviolet irrtadiation, heat-recycling, damp heat(DH) test, humidity-freeze(HF) test and etc.



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TOENERGY Technical Parameter

🖫 Electrical Data @STC					
Peak power-Pmax(Wp)	440	445	450	455	460
Power tolerance(W)			±3%		
Open circuit voltage - Voc(V)	41.6	41.8	42.0	42.2	42.4
Maximum power voltage - Vmpp(V)	35.8	36.0	36.2	36.4	36.6
Short circuit current - Im(A)	13.68	13.75	13.82	13.88	13.95
Maximum power current - Impp(A)	12.29	12.36	12.43	12.50	12.57
Module efficiency um(%)	20.4	20.6	20.9	21.0	21.3

Standard testing condition(STC): Irradiance 1000W/m², Temperature 25°C, AM 1.5

🖫 Mechanical Data

Cell size	Mono182×182mm
NO.of cells	120 Half Cells (6×20)
Dimension	1903*1134*35mm
Weight	24.20kg
Glass	3.2mm high transmission,Anti-reflectioncoating toughened glass
Frame	Anodized aluminum alloy
Junction box	SeparatedJunction box IP68 3 bypass diodes
Connector	AMPHENOLH4/MC4 connector
Cable	4.0mm ² , 300mm PV CABLE, length can be customized

Temperature Ratings

Nominal operating cell temperature	45±2°C
Temperature coefficient of Pmax	-0.35%/°C
Temperature coefficients of Voc	-0.27%/°C
Temperature coefficients of Isc	0.048%/°C

Maximum Ratings

Operating temperature	-40°Cto+85°C
Maximum system voltage	1500v DC (IEC/UL)
Maximum series fuse rating	25A
Pass hail test	Diameter 25mm,speed 23m/s

ISO

ISO4500

ISO

🕼 Warranty

12 Years Workmanship Warranty

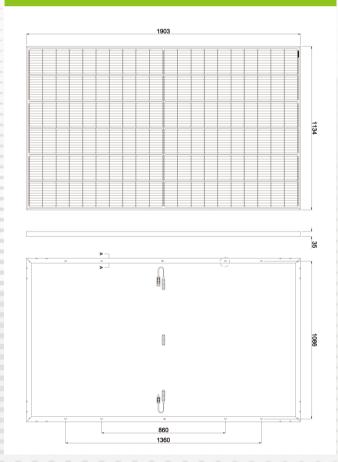
30 Years Performance Warranty

Cac

ISO

🖫 Packing Data	
Modules per pallet	31 PCS
Modules per 40HQ container	744 PCS
Modules per 13.5m long flatcar	868 PCS
Modules per 17.5m long flatcar	1116 PCS

Dimension



Please refer to TOENERGY Solar product warranty for details

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