

Q-SUN solar


Onyx Series

182x188mm 146pMAM60VET188WA9

440 ~ 460W

0~+5W POWER TOLERANCE

- High efficiency N - type Double glass black grid solar module
- Stronger properties, PID resistance, reduced hot spot loss
- Better temperature coefficient
- Harsh environmental adaptation
- Full black module, aesthetic appearance
- Bifacial module, more power generation

25 years material warranty 

30 years power linear warranty 

108

HALF-CUT
CELLS

182
x188
mm

RECTANGULAR
CELLS



*Subject to the terms and conditions contained in the applicable Q-SUN solar Limited Warranty Statement.
25-year limited product warranty is available only for products installed and operating on rooftops in certain regions.



440~460W

Half-Cut Module

LOWER TEMPERATURE COEFFICIENT

MAXIMUM CONVERSION

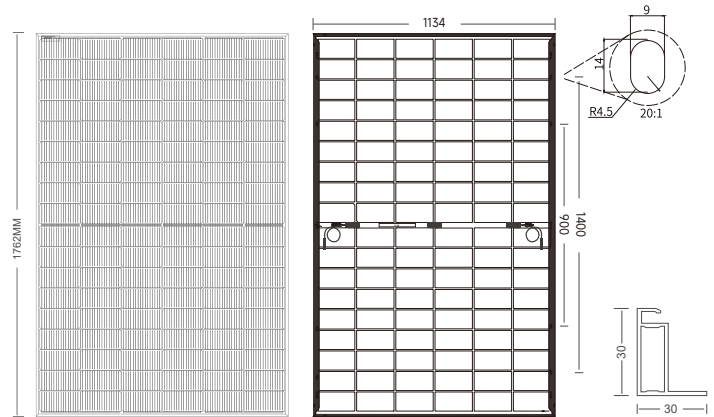
POWER TOLERANCE



Specification

Cell Type	Mono Crystalline 16BB
No. of Cells	
Dimension	
Weight	
Front Glass	
Back Glass	
Frame	
Junction Box	
Cable Length	300mm,1200mm(can be customized)

Mechanical Diagrams



Length: ±2mm Width: ±2mm Thickness: ±1mm Hole pitch: ±2mm

Packing Standard

37pcs/pallet
 40HQ: 26 pallets/container, 962pcs/container

Electrical Parameters

Module Type	QN-440HT-05		QN-445HT-05		QN-450HT-05		QN-455HT-05		QN-460HT-05	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Peak Power-Pmax (W)	440	333	445	336	450	340	455	344	460	348
Open Circuit Voltage-Voc (V)	39.42	37.45	39.70	37.72	39.98	37.98	40.08	38.08	40.37	38.35
Short Circuit Current-Isc (A)	14.13	11.30	14.19	11.35	14.25	11.40	14.30	11.44	14.36	11.49
Maximum Power Voltage-Vmp(V)	32.74	30.94	32.99	31.18	33.23	31.40	33.48	31.64	33.72	31.87
Maximum Power Current-mp(A)	13.44	10.75	13.49	10.79	13.54	10.83	13.59	10.87	13.64	10.91
Module Efficiency - nm(%)	22.0		22.3		22.5		22.8		23.0	

Electrical Parameters At BNPI

Maximum Power-Pmax(W)	485	491	496	502	507
Open Circuit Voltage-Voc (V)	39.42	39.70	39.98	40.08	40.37
Short Circuit Current-Isc135 (A)	15.58	15.64	15.71	15.77	15.84
Short Circuit Current-Isc300 (A)	17.35	17.42	17.49	17.57	17.64
Maximum Power Voltage-Vmp (V)	32.74	32.99	33.23	33.48	33.72
Maximum Power Current-Imp (A)	14.82	14.87	14.93	14.98	15.04

Operating Parameters

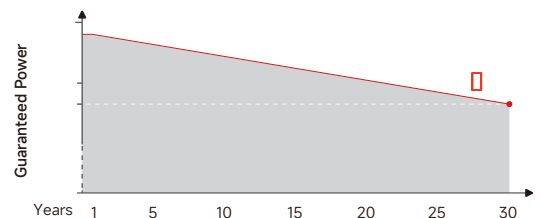
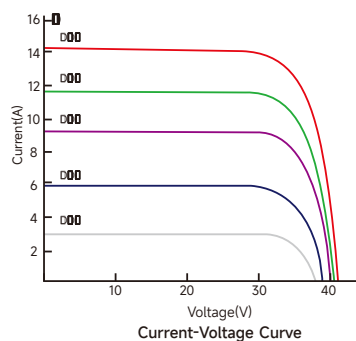
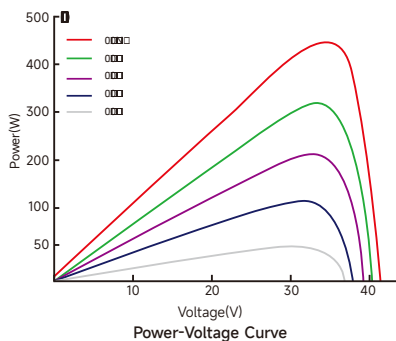
Maximum System Voltage	1500V DC
Maximum Series Fuse Rating	
Nominal Operating Cell Temperature	
Operational Temperature	
Safety Class	Class II
Refer.Bifacial Factor	

Temperature Coefficient (STC Test)

Temperature Coefficient of Isc	
Temperature Coefficient of Voc	
Temperature Coefficient of Pmax	

Load Capacity

Max Load Front	
Max Load Back	
Through Hail Testing	



STC : Irradiance:1000W/m² | Battery temperature: 25ℳ | Atmospheric=1.5
 NOCT: Irradiance:800W/m² | Ambien temperature: 20ℳ | Atmospheric=1.5 | Wind speed 1m/s
 BNPI: Rear Irradiance 135W/□ | Bifaciality coefficient 80%±5%

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