

Q-SUN solar

Onyx Series

Full Black Mono-Crystalline

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

25

30 years power linear warranty

30

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.

23.0%
MAXIMUM CONVERSION

0~+5W
POWER TOLERANCE

0.4%
0.4% PER YEAR OVER 30 YEARS

Half-Cut Module
LOWER TEMPERATURE COEFFICIENT

Specification

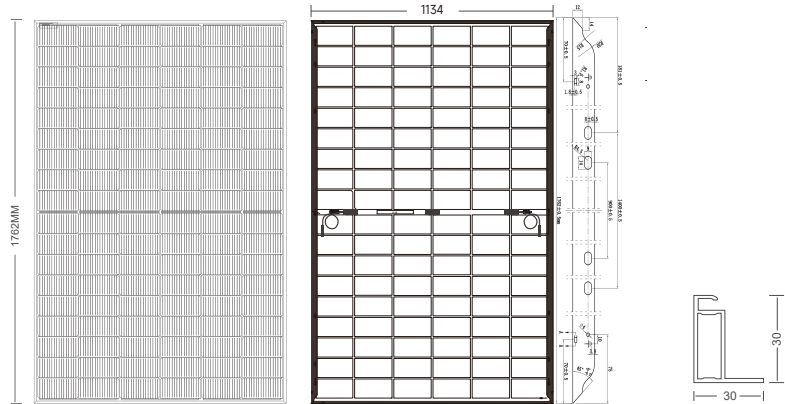
Cell Type	Mono Crystalline 16BB
No. of Cells	108 [2x(6×9)] pcs
Dimension	1762×1134×30mm
Weight	25.0kg±3%
Front Glass	2.0mm
Back Glass	2.0mm
Frame	Black Anodized Aluminum Alloy
Junction Box	IP68
Cable Length	300mm,1200mm(can be customized)

Packing Standard

37pcs/pallet

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

Mechanical Diagrams



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

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

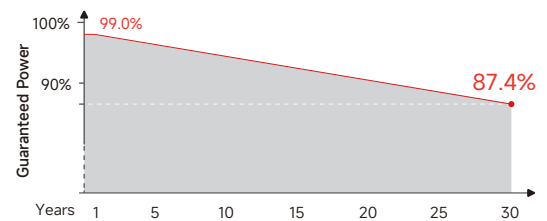
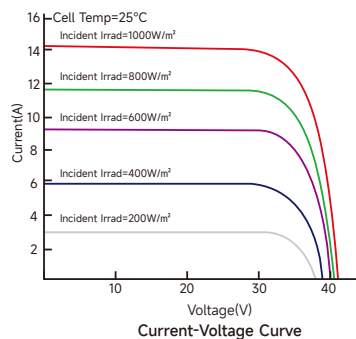
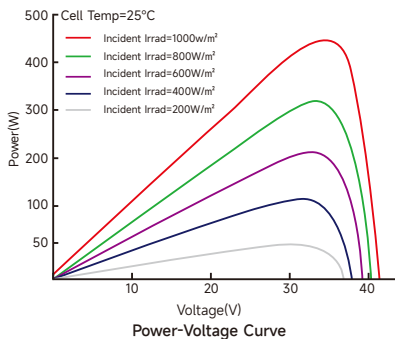
Maximum System Voltage	1500V DC
Maximum Series Fuse Rating	25A
Nominal Operating Cell Temperature	42±2°C
Operational Temperature	-45°C~+85°C
Safety Class	Class II
Refer.Bifacial Factor	80%+10%

Temperature Coefficient (STC Test)

Temperature Coefficient of Isc	+0.04%/°C
Temperature Coefficient of Voc	-0.24%/°C
Temperature Coefficient of Pmax	-0.29%/°C

Load Capacity

Max Load Front	5400Pa
Max Load Back	2400Pa
Through Hail Testing	25mm Diameter, Impact Speed 23m/s



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

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