



FRONT

BACK

HEX₄ BSM460M-72HBD

166

Bi-facial mono perc 440 w- 460 w
Efficiency up to 21.2%

Made In Thailand

Long Beach, CA Stock

Best Commercial Selling (1GW+Shipped)

Same Day Shipping

- Dimensions:2094*1038*30mm
- Weight:28kg
- Max. System Voltage: 1500 V (IEC/UL)

PERFORMANCE WARRANTY

15 Years Enhanced Product Warranty on Materials and Workmanship*

30 Years Linear Power Performance Warranty*
*According to the applicable Bluesun Solar Limited Warranty Statement.

GREAT PERFORMANCE AND RELIABILITY

- ★ Bi-facial Perc Half Cut Technology
- ★ Better Energy Yield
- ★ Power Degradation -0.45%/30 Years Linear Warranty
- ★ TUV SUD Anti PID Certificated
- ★ IP68 Junction Box/High Water Proof Level
- ★ Reduced Hot Spot Risk

MANAGEMENT SYSTEM CERTIFICATES

- ISO 9001: 2015 Quality Management System
- ISO 14001: 2015 Environment Management System
- ISO 45001: 2018 Occupational Health and Safety Management Systems

PRODUCT CERTIFICATES

- IEC 61215 / IEC 61730 / UL 61730



ELECTRICAL PARAMETERS

Performance at STC (Power Tolerance 0 ~ +3%)

Maximum Power (Pmax/W)	440	445	455	460
Operating Voltage (Vmpp/V)	41.6	41.8	42.0	42.2
Operating Current (Imp/A)	10.58	10.65	10.79	10.86
Open-Circuit Voltage (Voc/V)	50.0	50.2	50.4	50.6
Short-Circuit Current (Isc/A)	11.22	11.29	11.43	11.50
Module Efficiency ηm(%)	20.2	20.5	20.7	20.9

Performance at NMOT

Maximum Power (Pmax/W)	327	330	337	341
Operating Voltage (Vmpp/V)	38.9	39.1	39.3	39.4
Operating Current (Imp/A)	8.41	8.47	8.57	8.62
Open-Circuit Voltage (Voc/V)	46.8	46.9	47.1	47.3
Short-Circuit Current (Isc/A)	9.04	9.10	9.21	9.27

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5

NMOT: Irradiance at 800W/m², Ambient Temperature 20°C, Air Mass AM1.5, Wind Speed 1m/s

Electrical characteristics with different rear side power gain (refer to 440W front)

Pmax gain	Pmax/W	Vmpp/V	Imp/A	Voc/V	Isc/A
5%	462	41.6	11.11	50.0	11.78
10%	484	41.6	11.64	50.0	12.34
15%	506	41.6	12.17	50.0	12.90
20%	528	41.6	12.70	50.2	13.46
25%	550	41.6	13.23	50.2	14.03

MECHANICAL SPECIFICATION

Cell Type	Monocrystalline
Cell Dimensions	166*166mm
Cell Arrangement	144 (6*24)
Weight	28kg (61.73lbs)
Module Dimensions	2094*1038*30mm (82.44*40.87*1.18inches)
Cable Length (Portrait)	Portrait 300mm/Landscape 1200mm/Customized
Cable Cross Section Size	TUV: 4mm ² (0.006inches ²)/UL: 12AWG
Front Glass	2.0mm (0.08 inches) AR Coating Semi-tempered Glass
Back Glass	2.0mm (0.08 inches) Glazed Semi-tempered Glass
No. of Bypass Diodes	3/6
Packing Configuration (1)	35pcs/carton, 770pcs/40hq
Packing Configuration (for USA)	36pcs/carton, 648pcs/40hq
Frame	Anodized Aluminium Alloy
Junction Box	IP68

OPERATING CONDITIONS

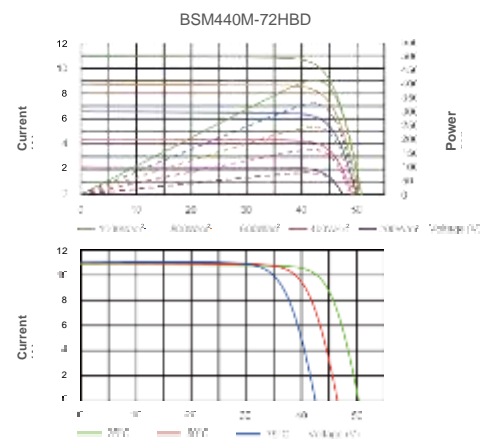
Maximum System Voltage	1500V/DC(IEC)
Operating Temperature	-40°C ~ +85°C
Maximum Series Fuse	25A
Static Loading	Snow Loading: 5400Pa/ Wind Loading: 2400Pa
Conductivity at Ground	≤0.1Ω
Safety Class	II
Resistance	≥100MΩ
Connector	T01/LJQ-3-CSY/MC4/MC4-EVO2
Backside Output Ratio*	70% ± 5%

*Under STC: Backside Output Ratio = $P_{max(rear)} / P_{max(front)}$

TEMPERATURE COEFFICIENT

Temperature Coefficient Pmax	-0.36%/°C
Temperature Coefficient Voc	-0.26%/°C
Temperature Coefficient Isc	+0.043%/°C
NMOT	43±2°C

I-V CURVE



TECHNICAL DRAWINGS

