Photovoltaic Bi-facial Modules

Who We Are

Big Shine Worldwide, a renowned PV module manufacturer, has been at the forefront of manufacturing excellence since **1994**. Our unwavering commitment to **excellence** and **sustainability** shines through our **innovative designs, meticulous manufacturing processes,** and consistent delivery of **high-quality, efficient**, and durable products.

Why Choose Us

Industry Experience

Since our establishment in 1989, we have proudly served over 10,000 companies.

Turnkey Expertise

Our distinctive turnkey solution enables us to create products that perform reliably beyond the confines of standard testing conditions.

Guarantee

We provide products founded on integrity and offer services that guarantee optimal performance for your investment.

BSE-N Model

Bi-facial Technology

- Capable of Capturing Sunlight from the Front and Back of the Module
- Up to 10% Higher Production than Standard One-Sided Modules
- Durable Glass Back Sheet

Performance

- Split Cell Technology 144 Cells
- Multi-Busbar Technology
- Non-Destructive Cutting
- Positive Power Tolerance

Module Efficiency

- 540–620-Watt Options
- Up to 22.84% Module Efficiency
- 2% First-Year Degradation
- 0.45% Annual Degradation

Warranty

- 12 Year Workmanship Warranty
- 30 Year Power Output Guarantee

UL 61730 & CSA 80231131
IEC 61215 & IEC 61730

C US

Contact Us

845-444-5255

www.bigshineworldwide.com

www.bigshineenergy.com

ELECTRICAL PROPERTIES (STC)

Module Type	590W	550W	545W	540W
Maximum Power - Pmax (W)	590	550	545	540
Open Circuit Voltage - Voc (V)	52.48	49.92	49.81	49.65
Short Circuit Current - Isc (A)	13.93	13.99	13.92	13.85
Maximum Power Voltage - Vmpp (V)	44.5	42	41.8	41.65
Maximum Power Current - Impp (A)	13.26	13.1	13.04	12.97
Module Efficiency	22.84%	21.29%	21.10%	20.90%

ELECTRICAL PROPERTIES WITH DIFFERENT BACK SIDE POWER GAIN

Power Max (W)	Voc (V)	Isc (A)	Vmpp (V)	Impp (A)	Power Max Gain
594	49.76	15.39	41.80	14.41	10%
600	49.81	16.79	41.75	15.72	10%
605	49.81	17.49	41.75	16.38	10%
644	52.25	15.27	44.29	14.53	10%

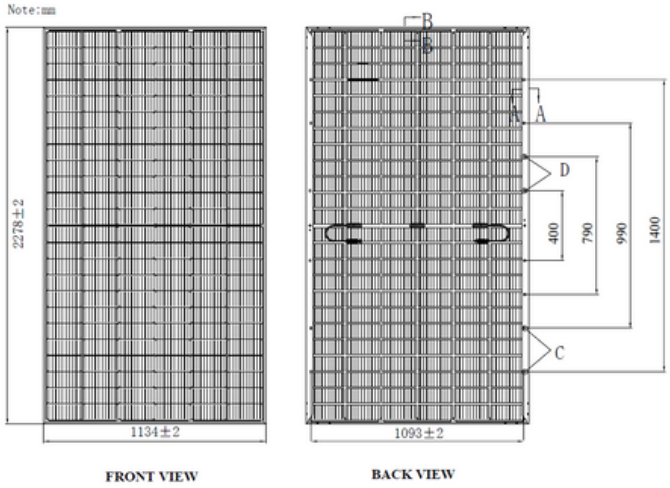
MODULE ATTRIBUTES

Dimensions	2278×1134×35mm (L×W×H)
Weight	32.7kg / 72.09 lbs
Frame	Silver anodized aluminum profile
Front Glass	AR-coating Semi-toughened glass, 2.0mm EVA
Cell Encapsulation	(Ethylene-Vinyl-Acetate) or POE
Back Glass	Glazed & Semi-toughened glass, 2.0mm
Cells	12×12 pieces monocrystalline solar cells series strings
Junction Box	IP68, 3 diodes
Cable & Connector	Portrait: 500 mm (cable length can be customized), 1×4 mm2 or 12AWG & MC4 Connector

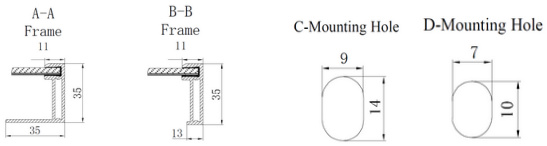
Maximum System Voltage [V]	1500
Series Fuse Rating [A]	30
Bifacial Front/Back	70%±10% (590W 80%±10%)
Fire Rating	Class C for IEC and TYPE 29 for US
PV module classification	Class II
Temperature Range	-40 °C to + 85 °C
Maximum Surface Load	5,400 Pa
Application class	Class A
Withstanding Hail	Maximum diameter of 25 mm with an impact speed of 23 m/s

DIMENSIONS

Packaging Dimensions(L×W×H) 2310×1125×1253mm



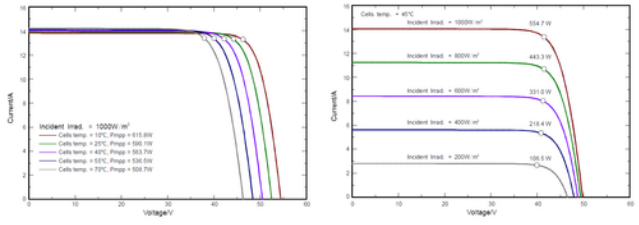
FRONT VIEW BACK VIEW



TEMPERATURE CHARACTERISTICS

NOCT	45°C(±2°C)
Voltage Temperature Coefficient	-0.27%/°C / (590W -.26%/°C)
Current Temperature Coefficient	+0.048%/°C / (590W +0.046%/°C)
Power Temperature Coefficient	-0.32%/°C / (590W -0.30%/°C)

IV CURVES



Standard Test Conditions (STC): Solar panels are tested under standard conditions (STC) with specific irradiance and temperature, and their power output is sorted within a range of 0 to 5 watts, with a measuring tolerance of ±3%.

Contact Us

845-444-5255

www.bigshineworldwide.com

www.bigshineenergy.com

ELECTRICAL PROPERTIES (STC)

Module Type	620W	625W	630W	635W
Maximum Power - Pmax (W)	620	625	630	635
Open Circuit Voltage - Voc (V)	48.7	48.9	49.1	49.3
Short Circuit Current - Isc (A)	15.95	16	16.05	16.1
Maximum Power Voltage - Vmpp (V)	41.23	41.45	41.67	41.89
Maximum Power Current - Impp (A)	15.04	15.08	15.12	15.16
Module Efficiency	22.95%	23.14%	23.32%	23.51%

ELECTRICAL PROPERTIES WITH DIFFERENT BACK SIDE POWER GAIN

Power Max (W)	Voc (V)	Isc (A)	Vmpp (V)	Impp (A)	Power Max Gain
662	49.10	16.85	41.67	15.88	5%
693	49.10	17.66	41.67	16.63	10%

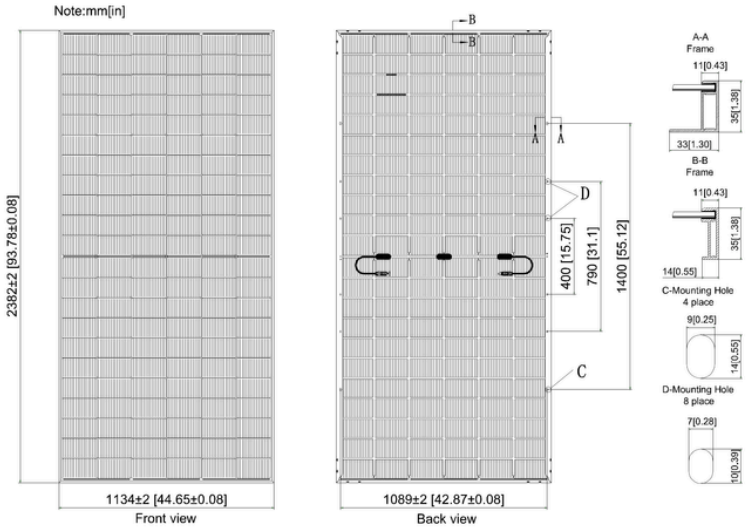
MODULE ATTRIBUTES

Dimensions	2382×1134×35mm (L×W×H)
Weight	33.6kg / 74.08 lbs
Frame	Silver anodized aluminum profile
Front Glass	AR-coating Semi-toughened glass, 2.0mm EVA
Cell Encapsulation	(Ethylene-Vinyl-Acetate) or POE
Back Glass	Glazed & Semi-toughened glass, 2.0mm
Cells	12×12 pieces monocrystalline solar cells series strings
Junction Box	IP68, 3 diodes
Cable & Connector	Portrait: 500 mm (cable length can be customized), 1×4 mm2 or 12AWG & MC4 Connector

Maximum System Voltage [V]	1500
Series Fuse Rating [A]	30
Bifacial Front/Back	80%±10%
Fire Rating	Class C for IEC and TYPE 29 for US
PV module classification	Class II
Temperature Range	-40 °C to + 85 °C
Maximum Surface Load	5,400 Pa
Application class	Class A
Withstanding Hail	Maximum diameter of 25 mm with an impact speed of 23 m/s

DIMENSIONS

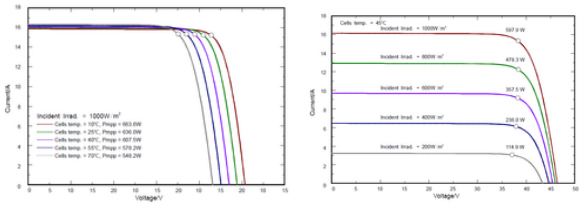
Packaging Dimensions(L×W×H) 1150×1125×2510mm



TEMPERATURE CHARACTERISTICS

NOCT	45°C(±2°C)
Voltage Temperature Coefficient	-25%/°C
Current Temperature Coefficient	+0.046%/°C
Power Temperature Coefficient	-0.30%/°C

IV CURVES



Standard Test Conditions (STC): Solar panels are tested under standard conditions (STC) with specific irradiance and temperature, and their power output is sorted within a range of 0 to 5 watts, with a measuring tolerance of ±3%.

Contact Us

845-444-5255

www.bigshineworldwide.com

www.bigshineenergy.com