

#### Quality Product

All Manufactured modules are tested 100% by EL (Electroluminescence) during the Production Process & Free from micro cracks.

Our high-performance modules are highly efficient, reliable and provide optimal output.

The company manufactures solar modules in compliance with global standard including MNRE, IEC 61215, 61730-1, 61730-2, 61701, UL 1703, UL 61730, ISO 9001:2008 & ISO 14001:2004 & 18001:2007.

#### High Efficiency .

High Module efficiency is obtaining top performance even in diffused light conditions.

We are leaders in providing our customers with maximum sunlight conversion.

#### Application Possibilities

Residential and Commercial rooftops, Car ports, Solar Farming, Balconies, Awnings, Street lights, Fences, and Canopies.

#### Our Team

We have a team of qualified experts and engineers making sure that modules produce maximum power.

We pride ourselves in caring for each individual customer needs with detailed attention. Our end goal is to give a highly efficient product with exceptional customer service.

#### Guarantee

Our product is durable and has 25 years performance warranty. Integrated manufacturing of cells & modules in production line guarantees optimum performance.

#### US OFFICE:

Sonali Energiees USA LLC  
111 Charlotte Place Suite 101A  
Englewood Cliffs, NJ 07632  
Office Tel: 201-568-1424  
info@sonalisolar.com



**Electric Performance Parameter**

Model	SS-M-440	SS-M-445	SS-M-450	SS-M-455	SS-M-460
Nominal Maximum Power (Pmax/W)	440	445	450	455	460
Optimum Operating Voltage (Vmp/V)	34.5	34.8	35.0	35.2	35.5
Optimum Operating Current (Imp/A)	12.74	12.8	12.86	12.91	12.97
Open Circuit Voltage (Voc/V)	41.2	41.4	41.6	41.8	42.0
Short Circuit Current (Isc/A)	13.54	13.6	13.66	13.72	13.78

\* Measurement Power Tolerance on Power 0 / +%

\* Under Standard Test Conditions (STC) of irradiance of 1000W/m<sup>2</sup>

\* Maximum System Voltage: 1500v IEC/UL

\* Normal Operating cell Temperature (NOCT) of irradiance of 800W/m<sup>2</sup>, 43± 2° C

\* Spectrum AM 1.5 and cell temperature of 25 °C

**Mechanical Parameter**

Module Dimensions	1910 X 1134 X 35 mm / 75.2 X 44.65 X 1.38 inch
Weight	24 kgs / 52.91 lbs
Cell Size (Monocrystalline)	182x91 mm / 6.53x3.27 in
No Of Cell	120 (6 X 20)
Junction Box	IP68, 3 Bypass diodes
Solar Cable	N 400mm (15.75 inch) / P 300mm (11.81inch) length with 4mm <sup>2</sup>
Connectors	MC4 compatible
Glass (Tempered & Low Iron )	3.2mm (0.125in) ARC
Encapsulate	EVA
Back Cover (Black Color)	Composite Sheet
Frame (Black Color)	Anodized Aluminum Alloy

**Temperature Coefficient**

Coefficient of Current	+0.05% /°C
Coefficient of Voltage	-0.29% /°C
Coefficient of Power	-0.37% /°C

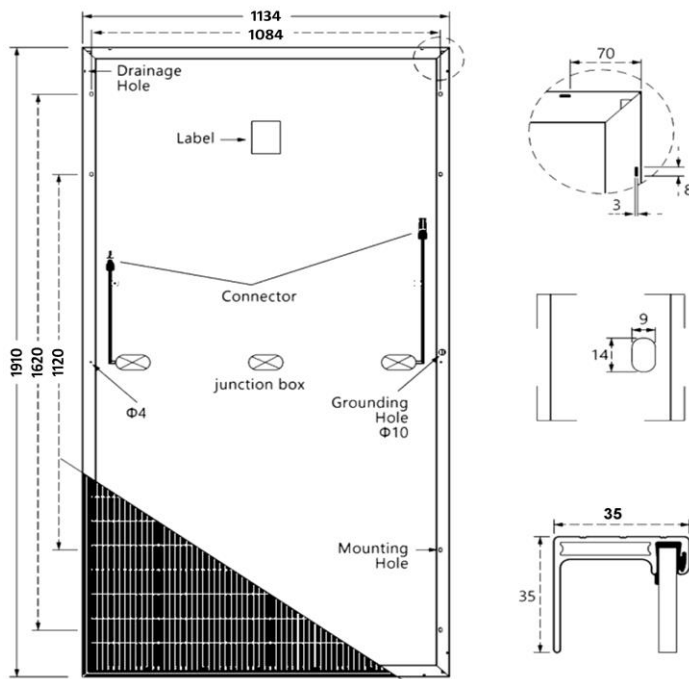
**Tested Operating Conditions**

Temperature Cycling Range	-40°C to 85°C
Humidity Freeze, Damp Heat	85% RH

**Product Warranty**

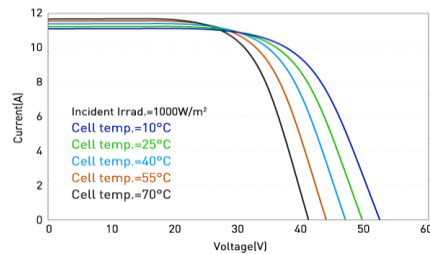
Product Warranty	12 Years
Performance Warranty	First 10 Years up to 90%, next 15 years up to 80%

**Module Drawing**



**IV Curve**

I-V Curve at Different Temperature



I-V/P-V Curve at Different Irradiation

