

# SN 60-Cell 1,000V

Monocrystalline PV Module

SN280M-10 SN285M-10 SN290M-10



## 280 ~ 290 Watt

Continuously manufacturing PV modules since 1991, S-Energy is one of the most experienced module makers in the industry. More than 20 years of operating data support S-Energy's reputation as the best overall quality, performance, and value for solar investors. The cutting-edge SN-series leads the industry again in advanced design, construction, and performance. The SN-series is the ideal module for any system size in any given environment. With the quality to last the lifetime of the PV system, S-Energy's SN-series provides the confidence and assurance to each and every one of our customers.



### Features



#### ENHANCED EXTERNAL LOAD / IMPACT

Snow Load : 5,400 Pa (30T) / 8,400 Pa (40T)  
Wind Load : 2,400 Pa (30T) / 5,400 Pa (40T)  
Hail Impact : 30.7m/s (speed ball)



#### POWER ADVANTAGE

25-year, linear power warranty  
> 97.5% nominal power during 1st year  
Positive tolerance up to +5W



#### PID RESISTANCE

Enhanced potential induced degradation



#### FIRE SAFETY

UL1703 Fire Classification : Type 1, Type 2



#### ENVIRONMENT RESISTANCE

Suitable for extreme conditions  
Resistant to high salt mist and ammonia  
(certified by TÜV Rheinland)



#### AVAILABLE IN TWO THICKNESSES

Standard (30T) and 40T for more durability

### Qualifications & Certifications

IEC 61215 & 61730, UL 1703, ISO 9001,  
ISO 14001, OHSAS 18001, WEEE



### Mechanical Characteristics

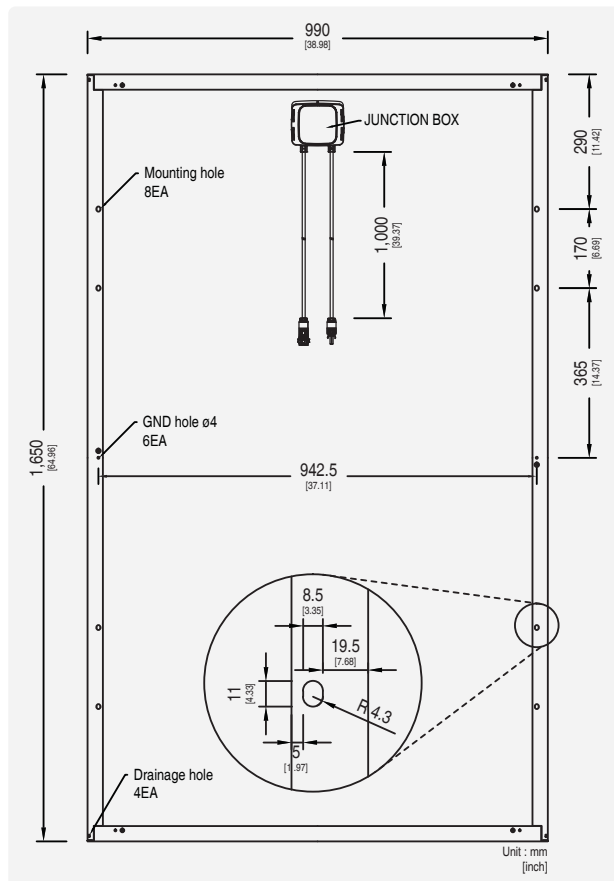
Solar Cells	Monocrystalline 156 x 156mm (6 inches)
Number of Cells	60 Cells, 6 x 10matrix
Dimensions	1,650 x 990 x 40mm (40T)
Weight	17kg (37.48 lbs)
Front Glass	High-Transmittance Low Iron Tempered Glass
Frame	Anodized Aluminum Black Frame
Output Cables	PV Wire (PV1-F), 12AWG (4mm <sup>2</sup> ), Cable Length : 1,000mm
Connectors	MC4 Connectable

### Warranty

Product Warranty	10-year Limited Product Warranty
Performance Warranty	Minimum Power Output for Year 1 : 97.5%
	Maximum Power Decline from Year 2 to 24 : 0.7%
	Power Output at year 25 : 80.7%

### Electrical Characteristics

STC (Irradiance 1,000W/m <sup>2</sup> , module temperature 25°C, AM=1.5)	SN280M-10	SN285M-10	SN290M-10
Rated Power (P <sub>max</sub> )	280W	285W	290W
Voltage at P <sub>max</sub> (V <sub>mp</sub> )	31.7V	32.1V	32.6V
Current at P <sub>max</sub> (I <sub>mp</sub> )	8.84A	8.87A	8.89A
Warranted Minimum P <sub>max</sub>	280W	285W	290W
Short-Circuit Current (I <sub>sc</sub> )	9.40A	9.46A	9.50A
Open-Circuit Voltage (V <sub>oc</sub> )	40.2V	40.5V	40.7V
Module Efficiency	17.14%	17.45%	17.75%
Operating Module Temperature	-40°C to +85°C		
Maximum System Voltage	1,000V(IEC) / 1,000V(UL)		
Maximum Series Fuse Rating	15A		
Maximum Reverse Current	20.25A		
Power Tolerance	0 ~ +5 W		

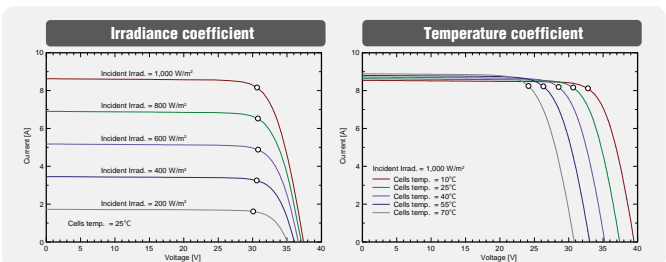


### Temperature Characteristics

Temperature coefficient of I <sub>sc</sub>	0.052 % / °C
Temperature coefficient of V <sub>oc</sub>	-0.312 % / °C
Temperature coefficient of power	-0.429 % / °C
NOCT (T <sub>air</sub> 20°C ; Irradiance 800W/m <sup>2</sup> ; Wind 1m/s)	45±3 °C

### Packing Configuration

	40T
Container	40' H/C
Modules Per Pallet	25pcs
Pallets Per Container	26pallets
Modules Per Container	650pcs



### Remarks :

P<sub>max</sub> measurement tolerance : 0~+5W  
 S-Energy uses triple AAA class simulator.  
 Specification subject to change without prior notice. S-Energy reserves the rights of final interpretation.  
 Document : SN 60cell(280-300)\_4BB\_UL/TUV\_1000\_EN\_2017.03

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