# serengeti

## BENEFITS

## Reliable

Proven polycrystalline technology and rigorous quality control offer longterm, reliable energy delivery, backed by the dependable SunPower 25-year power warranty

### Solid Performance

Each panel provides 228 rated watts with a conversion efficiency of 13.9%

### Easy to Install

Junction box with integrated connectors and a versatile module format enable easy installation

# Suitable for all Applications

Designed and tested for use with SunPower™ mounting systems

# E13 / 228 SOLAR PANEL





Serengeti<sup>™</sup> Solar Panels deliver consistent long- term performance. Rigorous quality assurance from SunPower Corporation ensures predictable output and proven reliability.



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# serengeti™

# E13 / 228 SOLAR PANEL

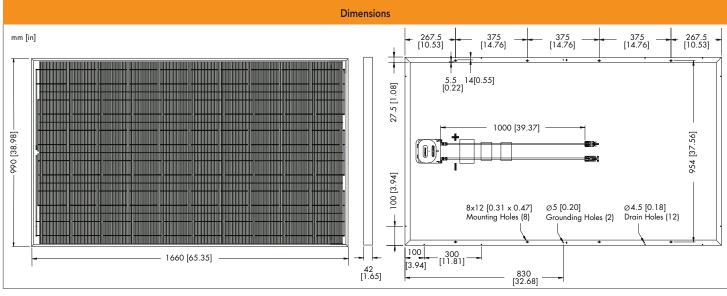
<b>Electrical Data</b> Measured at Standard Test Conditions (STC): Irradiance 1000W/ m², AM 1.5, and cell temperature 25°C				
Model Name			SER-228P	
Peak Power (+5/-3%)		P <sub>nom</sub>	228 W	
Efficiency		η	13.9 %	
Rated Voltage		V <sub>mpp</sub>	29.6 V	
Rated Current		I <sub>mpp</sub>	7.70 A	
Open Circuit Voltage		V <sub>oc</sub>	37.8 V	
Short Circuit Current		I <sub>sc</sub>	8.30 A	
Maximum System Voltage		UL	600 V	
Temperature Coefficients	Power	Р	-0.45 %/K	
	Voltage	V <sub>oc</sub>	-0.35 %/K	
	Current	I <sub>sc</sub>	0.05 %/K	
NOCT (+/-2° C)			45° C	
Series Fuse Rating			15 A	
Limiting Reverse Current (2-strings)		I <sub>R</sub>	10.4 A	

<b>Electrical Data</b> Measured at Nominal Operating Cell Temperature (NOCT): Irradiance 800 W/m², 20°C, wind 1 m/s		
Nominal Power	P <sub>max</sub>	164 W
Rated Voltage	V <sub>mpp</sub>	26.6 V
Rated Current	I <sub>mpp</sub>	6.15 A
Open Circuit Voltage	V <sub>oc</sub>	32.7 V
Short Circuit Current	I <sub>sc</sub>	6.63 A

Mechanical Data		
Solar Cells	60 polycrystalline solar cells	
Front Glass	High transmission tempered glass	
Junction Box	IP-65 rated with 3 bypass diodes 1.26 X 6.10 X 5.04 in (32 X 155 X 128 mm)	
Output Cables	3.28 ft (1000mm) length cables/ MultiContact (MC4) compatible connectors	
Frame	Anodised aluminium alloy type 6063 (silver)	
Dimensions	65.35 X 38.98 in (1660 X 990 mm)	
Thickness	1.65 in (42 mm)	
Weight	42.1 lbs (19.1 kg)	

Tested Operating Conditions		
Temperature	-40°F to +194°F (-40°C to +90°C)	
Max Load	50psf, 245 kg/m² (2400 Pa), front and back (e.g. wind) 113psf, 550 kg/m² (5400 Pa), front (e.g. snow) w/specified mounting configurations	
Impact Resistance	Hail - 1 in (25mm) at 52mph (23 m/s)	
Warranty and Certifications		

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Warranty	25 year limited power warranty 10 year limited product warranty	
Certifications	UL1703, IEC 61215 Ed. 2, IEC 61730 (SCII)	



#### CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

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