

# serengeti™

## BENEFITS

### Reliable

Proven polycrystalline technology and rigorous quality control offer long-term, 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™ Solar Panels deliver consistent long-term performance. Rigorous quality assurance from SunPower Corporation ensures predictable output and proven reliability.



1-800-SUNPOWER  
[sunpowercorp.com/serengeti](http://sunpowercorp.com/serengeti)

by SUNPOWER

### Electrical Data

Measured at Standard Test Conditions (STC):  
Irradiance 1000W/ m<sup>2</sup>, 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	P	-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	

### Electrical Data

Measured at Nominal Operating Cell Temperature (NOCT):  
Irradiance 800 W/m<sup>2</sup>, 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)

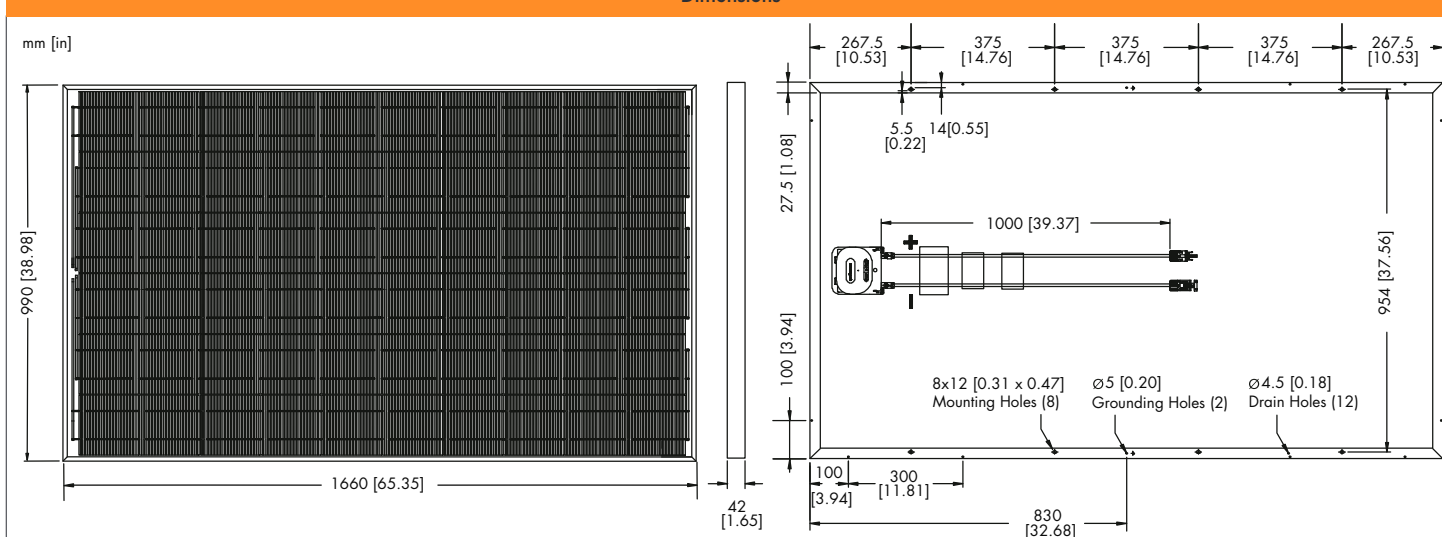
### Tested Operating Conditions

Temperature	-40°F to +194°F (-40°C to +90°C)
Max Load	50psf, 245 kg/m <sup>2</sup> (2400 Pa), front and back (e.g. wind)
	113psf, 550 kg/m <sup>2</sup> (5400 Pa), front (e.g. snow) w/specified mounting configurations
Impact Resistance	Hail - 1 in (25mm) at 52mph (23 m/s)

### Warranty and Certifications

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

### Dimensions



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

SUNPOWER and SERENGETI are trademarks or registered trademarks of SunPower Corporation.

© August 2010 SunPower Corporation. All rights reserved. Specifications included in the datasheet are subject to change without notice.

Document #001-61410 Rev\*A / LTR\_EN