



310 Watt / 60 Cell Monocrystalline Frameless Module



Ultra-light: Through replacement of the glass and optimization of the frame SUNO[®]UL weighs as 70% less than conventional PV panels.



Flexible: SUNO[®]UL combines a unique, patented material with other industry-leading technologies to produce superior flexible crystalline-silicon panel which can be installed on curved surface.



Transportation: SUNO[®]UL innovative frame and low weight will very significantly reduce the cost of transportation.



Easy Installation: SUNO[®]UL can reduce installation cost by up to 50% through the use of re-engineered components, ease of handling and faster installation.



Aesthetics: Aesthetically pleasing design with patented materials and sophisticated manufacturing process results in a high efficiency, attractive panel, with no light pollution, PID-free operation and high levels of safety.



Deployment: Ultra-light weight, flexibility and customizable size make SUNO[®]UL the best choice to change the way how solar is deployed in the market and bring added value to special applications.



Durability: SUNO[®]UL panels are certified to withstand maximum test load (2400 Pascal), while special materials and stringent quality control ensure panel longevity.

POWER OUTPUT RANGE 305~310 W
POWER TOLERANCE 0-5 W

10 Year Product Warranty
25 Year Linear Power Warranty



www.tso.solar

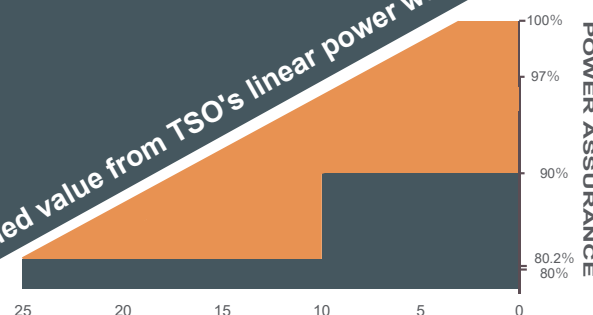
TSO
the south oracle

in Solar PV
since
1995

“Innovating for Solar Energy”



Added value from TSO's linear power warranty



ELECTRICAL CHARACTERISTICS

STC	SUNO-U310	SUNO-U305
Maximum Power (P_{max})	310	305
Maximum Power Voltage (V_{mp})	33.3	33.0
Maximum Power Current (I_{mp})	9.31	9.25
Open-circuit Voltage (V_{oc})	40.5	40.3
Short-circuit Current (I_{sc})	9.81	9.74
Module Efficiency (%)	18.4	18.1
Operating Temperature	-40°C to 85°C	
Maximum System Voltage	1000 V DC (IEC)	
Maximum Series Fuse Rating	20 A	
Application Class	Class A	
Power Tolerance	0/+5 W	

STC: Irradiance 1000W/m², Cell temperature 25°C, AM=1.5.

Tolerances of P_{max} , V_{oc} and I_{sc} are within ±5%

NMOT	SUNO-U310	SUNO-U305
Maximum Power (P_{max})	233	229
Maximum Power Voltage (V_{mp})	30.7	30.5
Maximum Power Current (I_{mp})	7.59	7.51
Open-circuit Voltage (V_{oc})	37.6	37.4
Short-circuit Current (I_{sc})	8.04	7.96

NMOT: Irradiance 800W/m², Ambient temperature 20°C, AM=1.5, Wind speed 1 m/s.

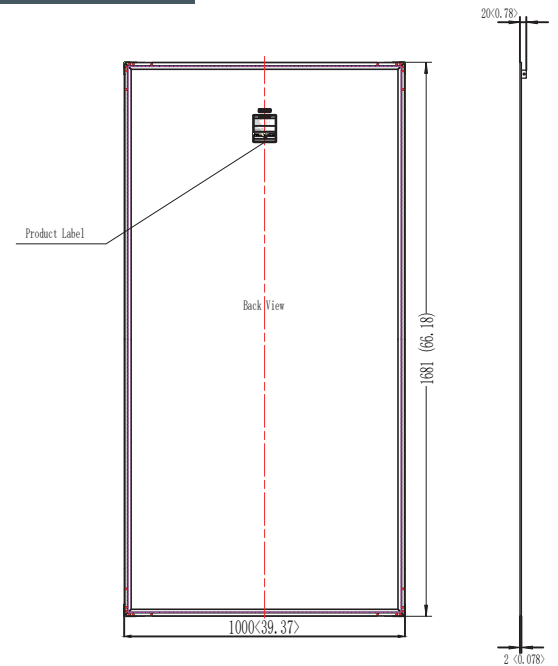
MECHANICAL CHARACTERISTICS

Solar Cell	Monocrystalline silicon (6 inches)
No. of Cells	60 (6×10)
Module Dimensions	1681×1000×2 mm
Weight	5.0 kgs
Backsheet	White
Frame	Frameless
J-box	IP 68 rated
Output Cables	Photovoltaic technology cable 4.0 mm ² , (+)150 / (-)450 mm
Connector	MC4 compatible

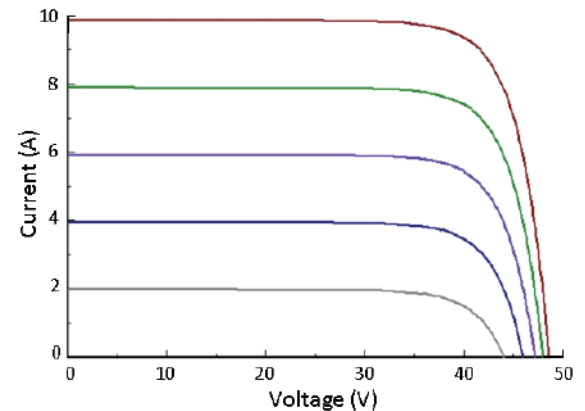
PACKAGING CONFIGURATION

	20' GP	40' HC
Module per pallet	66	66
Pieces per container	396	1584

DIMENSIONS



I-V CURVE (310)



TEMPERATURE CHARACTERISTICS

Nominal Module Operating Temperature(NMOT)	41±2 °C
Temperature Coefficient of P_{max}	-0.38 %/ °C
Temperature Coefficient of V_{oc}	-0.28 %/ °C
Temperature Coefficient of I_{sc}	0.020 %/ °C

Dealer Information

The South Oracle SL
 Add: Julio Cesar, 3 41001 Seville (Spain)
 info@tso.solar
 www.tso.solar

The South Oracle, LLC
 Add.: Suite 1702, Level 17 Boulevard Plaza Tower 1,
 Downtown Dubai, Dubai, UAE. P.O. Box 416654
 dubai.tso.solar