

## Benchmark II SPP305-335M60

### 305-335W MWT Module

### Mono 60 Cells

# 20.6%

Module efficiency up to 20.6%

### MWT Solar Cell

- New cell structure and different manufacturing process.
- No bus-bar on the front. 3% less shadow and better use of sunlight.
- Effectively avoid the micro crack caused by the pressure between cell edge and ribbon.
- Compatible with other cell types including PERC, HIT, Black Silicon etc.

### Insured by PICC and LLOYD'S

**PICC** **LLOYD'S**

### Comprehensive Qualifications & Certifications

- ★ IEC 61215, IEC 61730, IEC 61701, IEC 62716, IEC 60068-2-68.
- ★ CQC&CGC Top Runner Advanced Technology Certification (4A class)
- ★ ISO 9001; 2015 Quality Management System
- ★ ISO 14001; 2015 Environment Management System
- ★ OHSAS 18001; 2007 Occupation Health Safety Management System
- ★ TÜV NORD and UK NQA Quality System Certification



### Benchmark MWT PV Module



#### Higher Efficiency

The highest efficiency of the series is up to 20.6%.



#### Higher Yield

Higher power generation on the same installation.



#### Lower Degradation

At least 98% of the initial effective output at the 1<sup>st</sup> year and 80% at the 30<sup>th</sup> year.



#### Heat-Resistant

Remain peak performance in hot days thanks to the improved temperature coefficient as low as  $-0.36\%/^{\circ}\text{C}$ .



#### Corrosion-Resistant

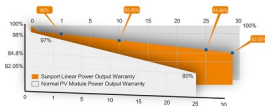
Certified for Ammonia Resistance and Salt Mist Corrosion to maximum severity level 6.



#### Anti-PID

Certified for Anti-PID under  $85^{\circ}\text{C}/85\%\text{RH}$ , for 288hrs.

### 30 Years Performance Warranty



## Electrical Characteristics at Standard Test Conditions(STC)

Spec/Model	Unit	SPP305M60	SPP310M60	SPP315M60	SPP320M60	SPP325M60	SPP330M60	SPP335M60
Max-Power(Pm)	W	305	310	315	320	325	330	335
Power Tolerance	%				0~+3%			
Max-Power Voltage(Vm)	V	31.8	32.0	32.2	32.4	32.6	32.8	33.0
Max-Power Current(I <sub>m</sub> )	A	9.60	9.69	9.79	9.88	9.97	10.07	10.16
Open-Circuit Voltage(Voc)	V	39.0	39.2	39.4	39.6	39.8	40.0	40.2
Short-Circuit Current(I <sub>sc</sub> )	A	10.12	10.20	10.28	10.36	10.44	10.52	10.62
Module Efficiency(η <sub>m</sub> )	%	18.7	19.1	19.4	19.7	20.0	20.3	20.6

STC:AM=1.5, Irradiation 1000W/m<sup>2</sup>, Module Temperature 25°C

## Electrical Characteristics at Nominal Module Operating Temperature (NMOT)

Spec/Model	Unit	SPP305M60	SPP310M60	SPP315M60	SPP320M60	SPP325M60	SPP330M60	SPP335M60
Max-Power(Pm)	W	228	232	236	240	244	248	251
Max-Power Voltage(Vm)	V	29.1	29.3	29.5	29.7	29.9	30.1	30.3
Max-Power Current(I <sub>m</sub> )	A	7.84	7.93	8.01	8.09	8.17	8.25	8.30
Open-Circuit Voltage(Voc)	V	35.8	35.9	36.0	36.1	36.2	36.3	36.5
Short-Circuit Current(I <sub>sc</sub> )	A	8.27	8.35	8.43	8.51	8.59	8.67	8.76

NMOT: Irradiation 800W/m<sup>2</sup>, ambient temperature 20°C, Wind Speed 1m/s

## Temperature Coefficient

Nominal Operating Cell Temperature	43 ± 2°C
Temperature coefficient of P <sub>max</sub>	-0.36%/°C
Temperature coefficient of Voc	-0.28%/°C
Temperature coefficient of I <sub>sc</sub>	0.06%/°C

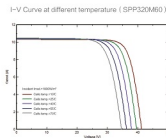
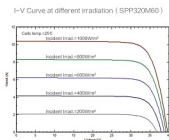
## Package

Container Size	Quantity (pcs)	Quantity (palette)
20' GP	360	12
40' GP	840	28
40' HC	840	28

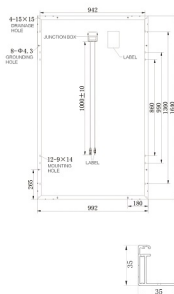
## Mechanical Property

Dimension(L × W × H)	1640mmx992mmx35mm
Weight	18.5kg
Glass Type	High Transmittance Anti-reflective Coated Tempered Glass 3.2mm
Solar Cell	60(10x6)/Mono/6inches
Encapsulant	EVA
Frame	Anodized Aluminum Alloy / Silver
Junction Box	IP65 & IP67
Cable	1000mm / 4mm <sup>2</sup>
Connector	MCA Compatible

## I-V Curve



## Module Size



## Operating Conditions

Max System Voltage	DC1000V(TUV)
Max Fuse Rated Current	15A
Operating Temperature Range	-40°C ~ +85°C
Mechanical Load	5400Pa(2400Pa)
Max Allowable Hail Load	4.25mm hail, from 1m of distance at 23 m/s
Application Class	Class A

