



This document contains TDS for the following products:

Virtus II Module 305-320W 4BB

ReneSola Australia Virtus II Module 310-320W 4BB

Virtus II Module 305-320W 4BB 1000V US

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Virtus[®] II Module

305W, 310W, 315W, 320W



High Module Conversion Efficiencies



Easy Installation and Handling for Various Applications



Mechanical Load Capability of up to 5400 Pa



**Conforms with IEC 61215:2005,
IEC 61730:2004, UL1703 PV Standards**



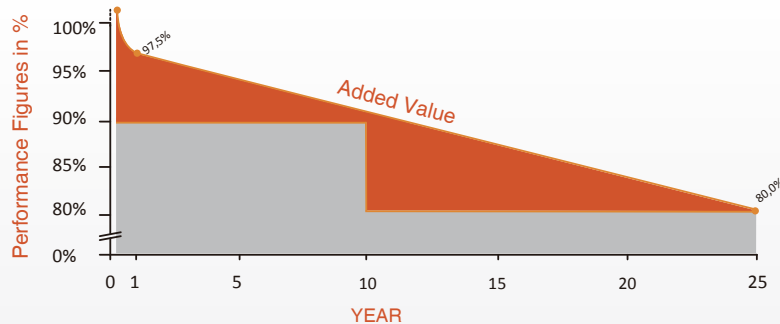
ISO9001, OHSAS18001, ISO14001 Certified



Application Class A, Safety Class II, Fire Rating C



Also Applicable for Module with Black Frame



10-year

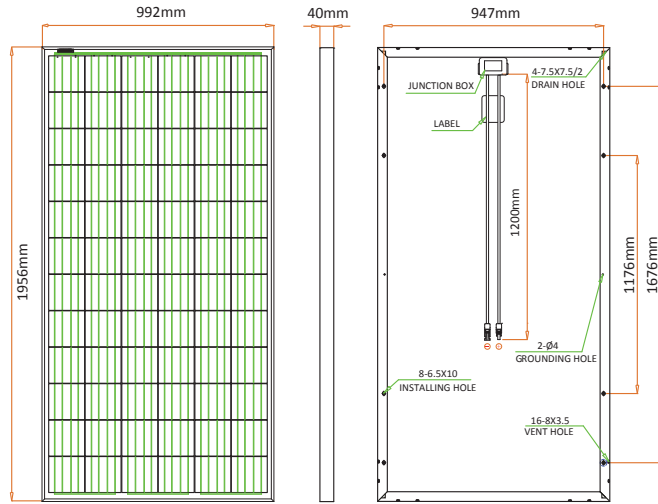
material & workmanship

25-year

linear power output

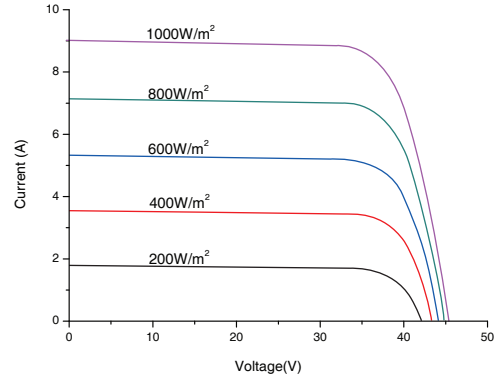


Dimensions



Drawing Only for Reference

I-V Curves



Electrical Characteristics STC

	JC305M-24/Abs	JC310M-24/Abs	JC315M-24/Abs	JC320M-24/Abs
Maximum Power (Pmax)	305 W	310 W	315 W	320 W
Power Tolerance	0 ~ +5W	0 ~ +5W	0 ~ +5W	0 ~ +5W
Module Efficiency	15.7%	16.0%	16.2%	16.5%
Maximum Power Current (Imp)	8.33 A	8.38 A	8.45 A	8.56 A
Maximum Power Voltage (Vmp)	36.6 V	37.0 V	37.3 V	37.4 V
Short Circuit Current (Isc)	8.73 A	8.80 A	8.88 A	9.00 A
Open Circuit Voltage (Voc)	44.9 V	45.0 V	45.4 V	45.6 V

Values at Standard Test Conditions STC (AM1.5, Irradiance 1000W/m², Cell Temperature 25°C)

Electrical Characteristics NOCT

	JC305 M-24/Abs	JC310M-24/Abs	JC315M-24/Abs	JC320M-24/Abs
Maximum Power (Pmax)	226 W	230 W	234 W	238 W
Maximum Power Current (Imp)	6.72 A	6.80 A	6.88 A	6.96 A
Maximum Power Voltage (Vmp)	33.6 V	33.8 V	34.0 V	34.2 V
Short Circuit Current (Isc)	7.04 A	7.10 A	7.16 A	7.26 A
Open Circuit Voltage (Voc)	42.0 V	42.1 V	42.5 V	42.7 V

Values at Normal Operating Cell Temperature, Irradiance of 800W/m², AM1.5, Ambient Temperature 20°C, Wind Speed 1m/s.

Mechanical Characteristics

Cell Type	Virtus II (Polycrystalline) 156 x156 mm, 72 (6x12) pcs in series
Glass	High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminum Alloy
Junction Box	IP65/IP67 Rated, With Bypass Diodes
Dimension	*1956 x 992 x 40 mm
Output Cable	4 mm ² (EU)/12 AWG (US), 1200 mm
Weight	27 kg
Installation Hole Location	See Drawing Above

Characteristics

Temperature Coefficient of Voc	-0.30%/°C
Temperature Coefficient of Isc	0.04%/°C
Temperature Coefficient of Pmax	-0.40%/°C
Nominal Operating Cell Temperature (NOCT)	45°C±2°C

Packing Information

Container	20' GP	40' GP	40' HQ
Pallets per Container	10	24	24
Pieces per Container	250/260	600/624	660/684

Maximum Ratings

Operating Temperature	-40°C ~ +85°C
Maximum System Voltage	1000VDC (EU) / 1000VDC (US)
Maximum Series Fuse Rating	20A (EU) / 20A (US)

Rev No: JC/TDS/2015.01.20 *Contact Renesola for tolerance specification
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Virtus II[®] 310W-320W

Polycrystalline Module

PID-Free

4 BUS BAR



Renesola's unique ingot casting process that produces an ultra-uniform grain size, distribution, and crystal orientation

10 YEAR
PRODUCT WARRANTY

25 YEAR
LINEAR POWER OUTPUT



Rene-Controlled
Nucleation Process



P.I.D. FREE
Premium silicon wafers, EVA encapsulants, low-iron tempered glass eliminate **Potential Induced Degradation**, ensuring a longer performing module.



VERTICALLY INTEGRATED, QUALITY CONTROL (QC)
Intense QC is conducted throughout the vertically integrated manufacturing process. **23 QC tests** from ingot casting to the final packaging.



LOW LIGHT CONDITIONS
Mornings, evenings, even on cloudy days; ReneSola modules perform higher giving the user an **improved performance**.



4 BUS BAR
Electrons move more efficiently with the availability of an additional bus bar, increasing the efficiency of the solar cell.



LOWER L.I.D.
Our modules lower the oxidation process when the cells are first exposed to light, thereby lowering the initial **Light Induced Degradation**.



Photon (Germany) is a global assessor on all photovoltaic products. ReneSola Virtus - **Top Performer** in a 2012 Field Test



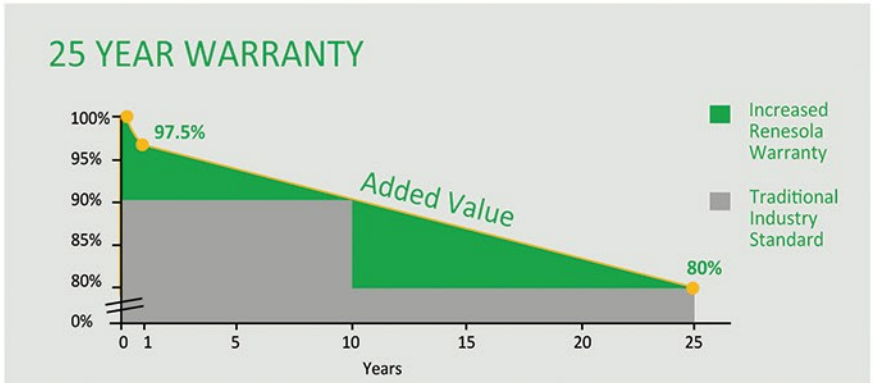
Accelios Solar (Germany), a 3rd party PV manufacturing audit firm, who certifies ReneSola as **Tier 1 & Bankable** with a score of 91%.



Bloomberg reiterates ReneSola's standing PV ranking as **Tier 1**. BNEF's tiering system is based on bankability, further illustrating ReneSola's financial calibre.



Canadian Standards Association Group certifies ReneSola for **High Standards** in safety, sustainability, and performance. Under this program ReneSola quality testing and calibration conform to International Standards.

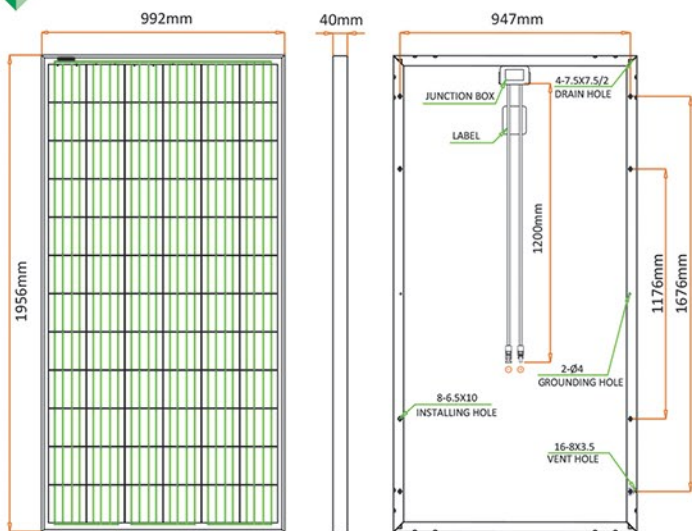


Virtus II[®]

Polycrystalline Module

310W-320W

Dimensions



Drawing Only for Reference



Applications



Electrical Characteristics

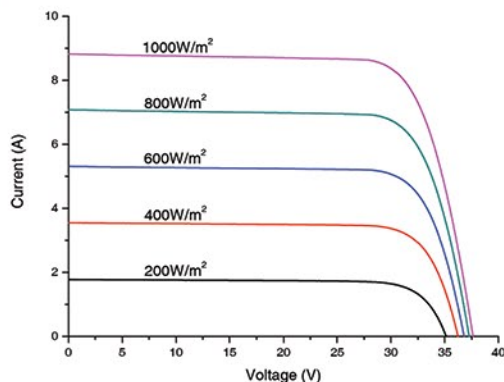
Electrical Characteristics STC	JC310M-24/Abs	JC315M-24/Abs	JC320M-24/Abs
Maximum Power (Pmax)	310 W	315 W	320 W
Power Tolerance	0 ~ +5 W	0 ~ +5 W	0 ~ +5 W
Module Efficiency	16.0%	16.2%	16.5%
Maximum Power Current (Imp)	8.38 A	8.45 A	8.56 A
Maximum Power Voltage (Vmp)	37.0 V	37.3 V	37.4 V
Short Circuit Current (Isc)	8.80 A	8.88 A	9.00 A
Open Circuit Voltage (Voc)	45.0 V	45.4 V	45.6 V

Values at Standard Test Conditions STC (Air Mass AM1.5, Irradiance 1000W/m², Cell Temperature 25°C)

Electrical Characteristics NOCT	JC310M-24/Abs	JC315M-24/Abs	JC320M-24/Abs
Maximum Power (Pmax)	230 W	234 W	238 W
Maximum Power Current (Imp)	6.80 A	6.88 A	6.96 A
Maximum Power Voltage (Vmp)	33.8 V	34.0 V	34.2 V
Short Circuit Current (Isc)	7.10 A	7.16 A	7.26 A
Open Circuit Voltage (Voc)	42.1 V	42.5 V	42.7 V

Values at Normal Operating Cell Temperature, Irradiance of 800W/m², AM 1.5, Ambient Temperature 20°C, Wind Speed 1 m/s.

I-V Curves



Varied Irradiation Efficiencies

Irradiance	200W/m ²	400W/m ²	600W/m ²	800W/m ²	1000W/m ²
Efficiency	16.1%	16.6%	16.7%	16.6%	16.5%

General Characteristics

Mechanical Characteristics	
Cell Type	Virtus II Polycrystalline, 156 x156 mm 72 (6x12) pcs in series
Glass	High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminum Alloy
Junction Box	IP65/IP67 rated, with bypass diodes
Dimension	*1956 x 992 x 40 mm
Output Cable	4 mm ² (EU)/12 AWG (US), 1200 mm
Weight	27 Kg
Installation of Hole Location	See Drawing Above

Characteristics	
Temperature Coefficient of Voc	-0.30%/°C
Temperature Coefficient of Isc	0.04%/°C
Temperature Coefficient of Pmax	-0.40%/°C
Nominal Operating Cell Temperature (NOCT)	45°C ± 2°C
Maximum Ratings	
Operating Temperature	-40°C ~ +85°C
Maximum System Voltage	1000VDC (EU) / 600VDC (US)
Maximum Series Fuse Rating	20A (EU) / 20A (US)
Hail Safety Impact Velocity	23m/s (25mm, 7.5gms)

Packing Information			
Container	20' GP	40' GP	40' HQ
Pallets per container	10	24	24
Pieces per Container	250	600	660



Rev No: JC/TDS/2015.12

*Contact ReneSola for tolerance specification
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ReneSola Partner:

Contact Person:

Tel:

Virtus[®] II Module

305W/310W/315W/320W



High Module Conversion Efficiencies



Easy Installation and Handling for Various Applications



Mechanical Load Capability of up to 113 psf (5400 Pa)



**Conforms with IEC 61215:2005,
IEC 61730: 2004, UL 1703 PV Standards**



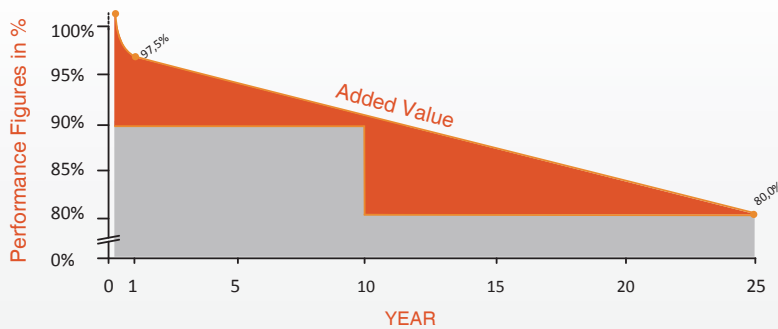
ISO9001, OHSAS18001, ISO14001 Certified



Application Class A, Safety Class II, Fire Rating Type 1



Also Applicable for Module with Black Frame



10-year
material & workmanship

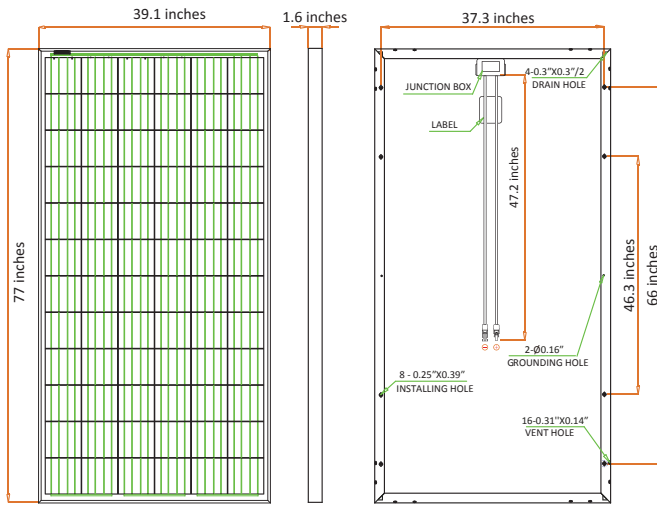
25-year
linear power output



APPROVED PRODUCT

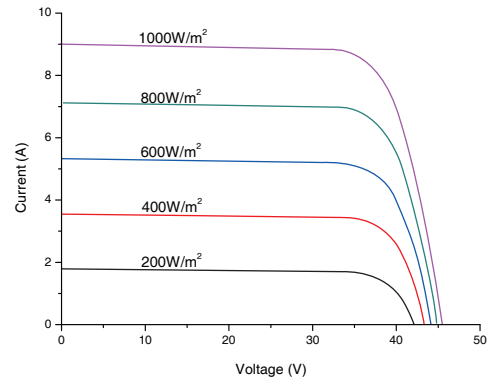


Dimensions



Drawing Only for Reference

I-V Curves



Electrical Characteristics STC

	JC305M-24/Abs	JC310M-24/Abs	JC315M-24/Abs	JC320M-24/Abs
Maximum Power (Pmax)	300 W	310 W	315 W	320 W
Power Tolerance	0 ~ +5W	0 ~ +5W	0 ~ +5W	0 ~ +5W
Module Efficiency	15.4%	16.0%	16.2%	16.5%
Maximum Power Current (Imp)	8.20 A	8.38 A	8.45 A	8.56 A
Maximum Power Voltage (Vmp)	36.6 V	37.0 V	37.3 V	37.4 V
Short Circuit Current (Isc)	8.69 A	8.80 A	8.88 A	9.00 A
Open Circuit Voltage (Voc)	44.8 V	45.0 V	45.4 V	45.6 V

Values at Standard Test Conditions STC (AM1.5, Irradiance of 1000W/m², Cell Temperature 77°F)

Electrical Characteristics NOCT

	JC305M-24/Abs	JC310M-24/Abs	JC315M-24/Abs	JC320M-24/Abs
Maximum Power (Pmax)	226 W	230 W	234 W	238 W
Maximum Power Current (Imp)	6.72 A	6.80 A	6.88 A	6.96 A
Maximum Power Voltage (Vmp)	33.6 V	33.8 V	34.0 V	34.2 V
Short Circuit Current (Isc)	7.04 A	7.10 A	7.16 A	7.26 A
Open Circuit Voltage (Voc)	42.0 V	42.1 V	42.5 V	42.7 V

Values at Normal Operating Cell Temperature, Irradiance of 800W/m², AM1.5, Ambient Temperature 68°F, Wind Speed 1m/s.

Mechanical Characteristics

Cell Type	6 inches Virtus® II (Polycrystalline), 72 (6x12) pcs in series
Glass	High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminum Alloy
Junction Box	IP65/IP67 Rated, With Bypass Diodes
Dimension	*77 x 39.1 x 1.6 inches
Output Cable	12 AWG, 47.2 inches
Weight	59.5 lbs
Installation Hole Location	See Drawing Above

Characteristics

Temperature Coefficient of Voc	-0.167%/°F (-0.30%/°C)
Temperature Coefficient of Isc	0.022%/°F (0.04%/°C)
Temperature Coefficient of Pmax	-0.222%/°F (-0.40%/°C)
Nominal Operating Cell Temperature (NOCT)	113 ± 3.6°F (45 ± 2°C)

Packing Information

	20' GP	40' GP	40' HQ
Container	20' GP	40' GP	40' HQ
Pallets per Container	10	24	24
Pieces per Container	250/260	600/624	660/684

Rev No: JC/TDS/2015.04 *Contact ReneSola for tolerance specification
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Maximum Ratings

Operating Temperature	-40°F ~ +185°F (-40°C ~ +85°C)
Maximum System Voltage	1000VDC (US)
Maximum Series Fuse Rating	20A (US)

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