

DEF_R8A / 144 cells
580 W - 605 W
Recyclable PV Module

United Renewable Energy Co., Ltd. (a company from Taiwan where the sun shines) TOPCon RE module uses URECO TOPCon monocrystalline bifacial solar cells, and URECO advanced double glass(G2G) module manufacturing technology.



Key Features



Multi-Bus bar/ TLS technology
Increase the stability of outdoor power generation



Better bifaciality
High bifacial rate



PID resistance
Excellent PID resistance performance



Withstand heavy loading
Equivalent to the Beaufort wind scale 17 validation



Superior temperature coefficient
Better performance in high temperature



Disassemble (EEC) module
Recycle complete silicon wafers and other materials



NO Water pollution concern
PASS the water quality standard by E.P.A



Electrical Data

Model		Bifacial Gain			Bifacial Gain			Bifacial Gain		
		DEF580R8A	5%	10%	DEF585R8A	5%	10%	DEF590R8A	5%	10%
Maximum Rating Power (Pmax)	[W]	580	609	638	585	614	644	590	620	649
Module Efficiency	[%]	22.45	23.57	24.70	22.65	23.78	24.92	22.84	23.98	25.12
Open Circuit Voltage (Voc)	[V]	51.42	51.42	51.42	51.60	51.60	51.60	51.78	51.78	51.78
Maximum Power Voltage	[V]	42.53	42.53	42.53	42.71	42.71	42.71	42.88	42.88	42.88
Short Circuit Current (Isc)	[A]	14.38	15.10	15.82	14.44	15.16	15.88	14.50	15.23	15.95
Maximum Power Current	[A]	13.63	14.31	14.99	13.69	14.37	15.06	13.75	14.44	15.13
Model		DEF595R8A	5%	10%	DEF600R8A	5%	10%	DEF605R8A	5%	10%
Maximum Rating Power (Pmax)	[W]	595	625	655	600	630	660	605	635	666
Module Efficiency	[%]	23.03	24.18	25.33	23.23	24.39	25.55	23.42	24.59	25.76
Open Circuit Voltage (Voc)	[V]	51.96	51.96	51.96	52.14	52.14	52.14	52.32	52.32	52.32
Maximum Power Voltage	[V]	43.06	43.06	43.06	43.24	43.24	43.24	43.42	43.42	43.42
Short Circuit Current (Isc)	[A]	14.56	15.29	16.02	14.62	15.35	16.08	14.68	15.41	16.15
Maximum Power Current	[A]	13.81	14.50	15.19	13.87	14.56	15.26	13.93	14.63	15.32

*Standard Test Condition (STC): Cell Temperature 25 °C, Irradiance 1000 W/m², AM 1.5
 *Values without tolerance are typical numbers. Measurement tolerance: ±3%

Mechanical Data

Item	Specification
Dimensions	2278 mm (L) ¹ x 1134 mm (W) ¹ x 35 mm (D) ² / 89.69" (L) ¹ x 44.65" (W) ¹ x 1.38" (D) ²
Weight	31.20 kg / 68.78 lbs
Solar Cell	144 half-cut monocrystalline M10 N-type TOPCon cells
Front/ Rear Glass	AR-Coating, strengthened glass/ strengthened glass, 2.0mm
Cell Encapsulation	EEC (Easy-Dismantled Film)
Frame	Anodized aluminium alloy
Junction Box	IP68, 3diodes
Cables	4.0mm ² (IEC), 12AWG (UL)
Connectors	EVO2A (1500V)
Package Configuration	30 pcs Per Pallet, 600 pcs per 40' HQ container

1 : With assembly tolerance of ± 2 mm [± 0.08"]
 2 : With assembly tolerance of ± 0.8 mm [± 0.03"]

Operating Conditions

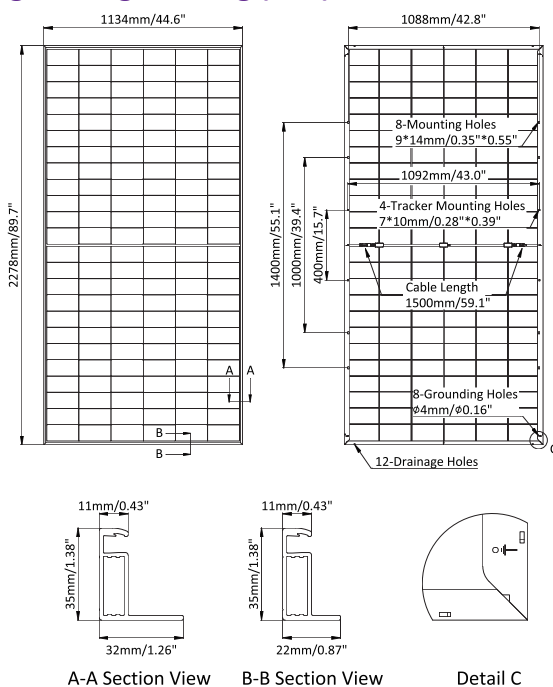
Item	Specification
Mechanical Load	7200 Pa
Maximum System Voltage	1500 VDC
Series Fuse Rating	25 A
Operating Temperature	-40 to 85 °C

Temperature Characteristics

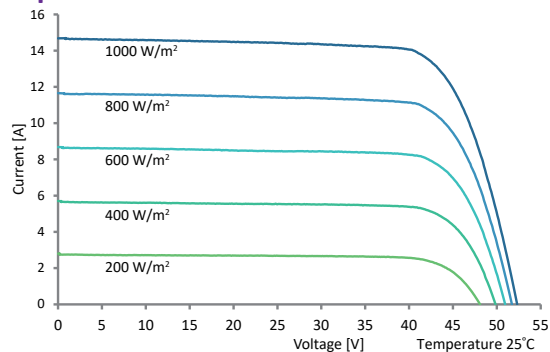
Item	Specification
Nominal Module Operating Temperature	43°C ± 2°C
Temperature Coefficient of Isc	0.05 % / °C
Temperature Coefficient of Voc	-0.25 % / °C
Temperature Coefficient of Pmax	-0.30 % / °C

*Nominal module operating temperature (NMOT): Air mass AM 1.5, irradiance 800W/m², temperature 20°C, windspeed 1 m/s.

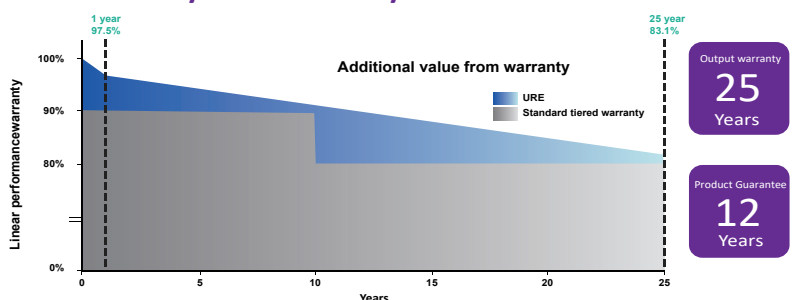
Engineering Drawing (mm)



Dependence on Irradiance



Reliability with Warranty



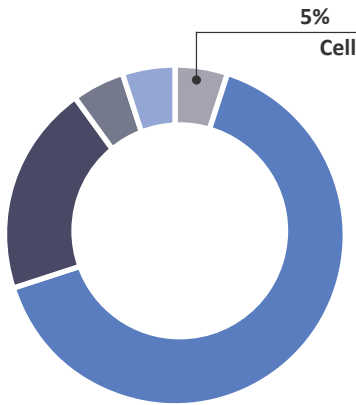
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Recyclable Module

Circularity Specifications

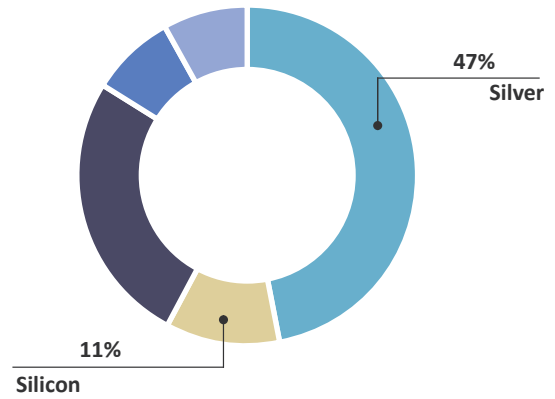
- The next generation recyclable solar module (TOPCon RE) design recycles the complete silicon wafer, glass and high-priced precious metal materials.
- Silicon and silver play a big role in the end-of-life value breakdown of PV modules.

Rative material weight (%) of Solar Module



Cell Glass Aluminum Polymer Others

Rative material value (%) of Recyclable Module



Silver Silicon Aluminum Glass Others

Reference Estimated Recycling Carbon Emission Benefits

- Carbon emission benefits of wafer recycling: Recycling wafers from PV module materials and using them as silicon materials can save 36 times the carbon emissions.
- Carbon emission benefits of recycling other materials: Silver recycling saves 580 times of carbon emissions, and glass recycling into tempered glass saves 6.3 times of carbon emissions.

Toxity Impact

- No fluoropolymers (PFAS)
- Passed water quality non-toxicity test

RECYCLABLE

REUSABLE

RENEWABLE

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