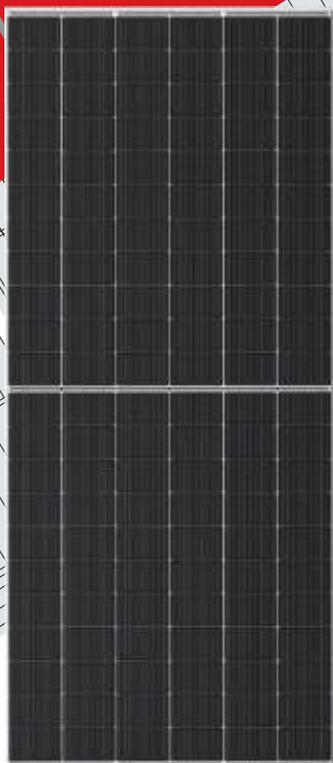


495W/500W/505W/510W/515W

SUN 54MD-H12RS

N TYPE TOPCON BIFACIAL MODULE



COMPREHENSIVE CERTIFICATES

IEC61215 / IEC61730 / IEC61701 / IEC62716 / IEC62804
ISO 9001: 2015 Quality management systems;
ISO 14001: 2015 Environmental management systems;
ISO 45001: 2018 Occupational health and safety management systems;

Sunergy Advantages



Overflow tank can be waterproof

The excess silicone will flow into the overflow tank, can reduce 3% water vapor entering the panels.



Stronger frame

The C side of the frame contains curved hook reinforcement, enhanced the mechanical load strength by 10%



Current grading

Current classification effectively avoids 2% power loss caused by current mismatch during installation, achieving max output power



Higher utilization of container space

Higher container space utilization significantly reduce transportation costs



Better Temperature Coefficient

-0.30%/°C Pmax temperature coefficient
More stable power generation performance and even better in hot climate



Higher fire rating

Fire rating up to Class A, reduce fire hazards

LINEAR PERFORMANCE WARRANTY

- 12 Years Manufacturing Warranty
- 12 Years 94.6% Power Output
- 30 Years 87.4% Power Output

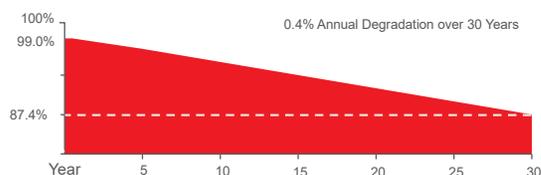
ALBASHEER FOR ENERGY SOLUTIONS

Al-Basheer Energy Solutions is an emerging brand specializing in developing innovative and sustainable solutions in the energy sector. Its work includes the design and implementation of solar panel systems and photovoltaic power plants, in addition to providing Engineering, Procurement, and Construction (EPC) services.

Headquartered in **Najaf Governorate, Iraq**, the company is engaged in developing renewable energy projects that enhance reliance on clean energy sources within Iraq and beyond. Al-Basheer Energy Solutions aims to become one of the leading brands in the region for sustainable energy development through innovation, quality, and a commitment to supporting the transition toward a cleaner and more energy-efficient future.

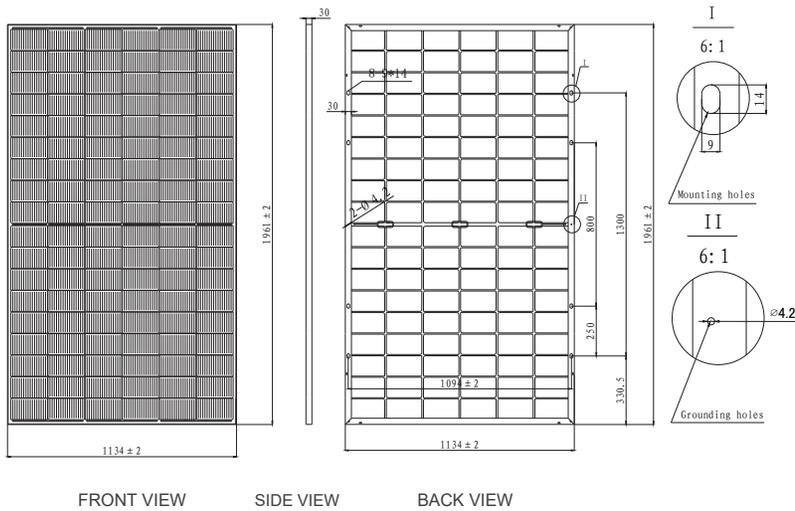
The brand also offers comprehensive services that include technical consulting, engineering studies, and strategic planning for solar energy projects — ensuring the highest levels of efficiency and sustainability.

QUALIFICATIONS AND CERTIFICATES

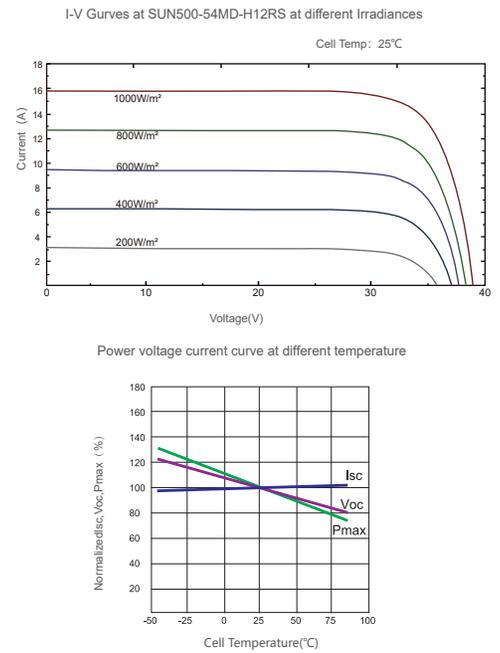


SUN 54MD-H12RS

MECHANICAL DRAWINGS



I-V CURVES



MECHANICAL SPECIFICATION

Cell Type	N-Type Mono Crystalline 182x105mm
Number Of Cells	108 (6x18)
Dimensions(AxBxC)	1961x1134x30mm
Weights	27.2kg
Glass	2.0/2.0mm Tempered Low Iron Glass
Aluminium Frame	Anodised Aluminium
Junction Box	Split Junction Box (IP68 ,three diode)
Connector	Mc4 Compatible
Output Cables	4.0mm²,+300mm,-300mm Customized Length

PACKING CONFIGURATION

Container	40' HQ
Pieces Per Pallet	36
Pallets Per Container	24
Pieces Per Container	864

ELECTRICAL CHARACTERISTICS

Module Type	495W		500W		505W		510W		515W	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power At STC(Pmax)	495W	376.9W	500W	380.7W	505W	384.5W	510W	388.3W	515W	392.1W
Short Circuit Current(Isc)	15.86A	12.85A	15.93A	12.91A	16.01A	12.97A	16.08A	13.03A	16.15A	13.09A
Open Circuit Voltage(Voc)	39.44V	38.22V	39.64V	38.41V	39.84V	38.60V	40.04V	38.80V	40.24V	38.99V
Maximum Power Current(Imp)	14.96A	12.15A	15.03A	12.20A	15.10A	12.26A	15.17A	12.31A	15.24A	12.37A
Maximum Power Voltage(Vmpp)	33.09V	31.03V	33.27V	31.21V	33.45V	31.36V	33.62V	31.53V	33.80V	31.70V
Module Efficiency	22.3%		22.5%		22.7%		22.9%		23.2%	
Power Tolerance	0~+5W		0~+5W		0~+5W		0~+5W		0~+5W	
Maximum System Voltage	VDC 1500V									
Maximum Series Fuse	35A									
Increased Snowload Acc.to Iec 61215	5400Pa									
Operating Temperature	-40~+85°C									
Number Of Bypass Diodes	3									
Norminal Operating Cell Temperature(Noct)	45°C±2°C									
Temperature Coefficient Of Pmax	-0.30%/°C									
Temperature Coefficient Of Voc	-0.25%/°C									
Temperature Coefficient Of Isc	0.046%/°C									

ELECTRICAL CHARACTERISTICS WITH DIFFERENT REAR SIDE POWER GAIN

(Reference to 500W Front)

Backside Power Gain	10%	15%	20%	25%
Maximum Power At STC(Pmax)	550	575	600	625
Short Circuit Current(Isc)	17.47	18.20	18.92	19.64
Open Circuit Voltage(Voc)	39.66	39.81	39.96	40.11
Maximum Power Current(Imp)	16.48	17.17	17.85	18.53
Maximum Power Voltage(Vmpp)	33.37	33.49	33.61	33.73

STC: 1000W/m2 irradiance, 25°C cell temperature, AM1.5. NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, wind speed 1m/s.

