RS-144HC Series

Framed 144 Layout Mono Module
PERC Half-Cell: 450-480W

144 HALF CELL
MONOCRYSTALLINE MODULE

450-480W
POWER OUTPUT RANGE

22.1%
MAXIMUM EFFICIENCY

0~+5W
POSITIVE POWER TOLERANCE

PRODUCTS	POWER RANGE
RS-144HC(cells)	450-480W

Rosen Solar, is one of the world's top ranking manufacturer and installer of solar modules for more than 10years. Facing the increasingly serious situation of world Global warming, we are undertaking more duty and responsibility to provide more reliable and sustainable energy to protect not only human beings but also the Mother Earth. And with modules and systems delivered to more than 150 countries, Rosen is committed to building long term strategy and mutual collaboration with all installers, distributors and partners in energy protection.
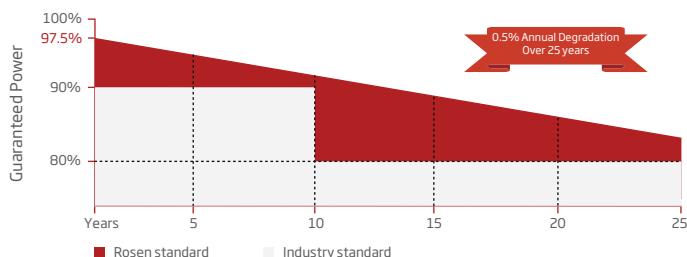
Comprehensive Products and System Certificates

IEC61215/IEC61730/IEC61701/IEC62716
ISO 9001: Quality Management System
ISO 14001: Environmental Management System
ISO 14064: Greenhouse Gas Emissions Verification
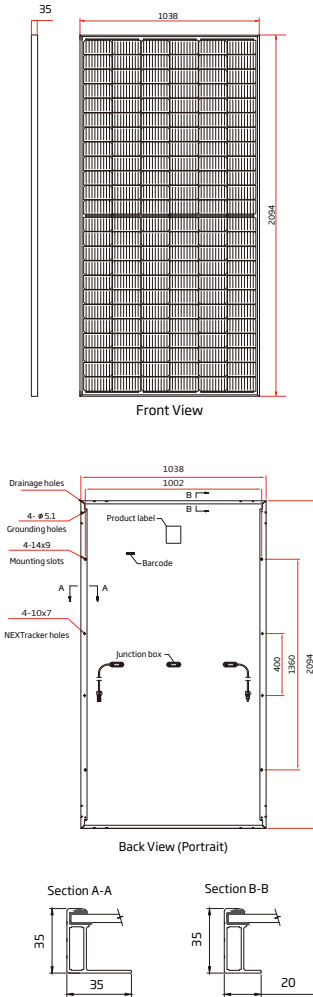OHSAS 18001: Occupation Health and Safety
            Management System

Higher power for large scale installations
• High performance mono PERC cells
• Reduced BOS costs with higher power bins and 1,500V system voltage
• Consistently high bankability ratings by BNEF, banks and investors

Half-cut cell design brings higher efficiency
• Optimized power output under inter-row shading conditions
• Integrated LRF for increased performance
• Low thermal coefficients for higher energy yield at elevated operating temperatures
• Reduced interconnection losses

Highly reliable due to stringent quality control
• Over 30 in-house tests (UV, TC, HF, and many more)
• In-house testing goes well beyond certification requirements
• PID resistant
• 2x 100% inline EL inspection

Certified to withstand challenging environmental conditions
• Salt Mist Corrosion
• Ammonia Corrosion
• Blowing Sand

PERFORMANCE WARRANTY

10 Year Product Warranty · 25 Year Power Warranty

0.5% Annual Degradation Over 25 years

Guaranteed Power

100%
97.5%
90%
80%

Years   5   10   15   20   25

■ Rosen standard   ☐ Industry standard

Rosen Solar
To light up the world

DIMENSIONS OF PV MODULE(mm)

35
1038

2094

Front View

1038
1002

Drainage holes

4- φ 5.1
Grounding holes
4-14x9
Mounting slots

Product label

Barcode

A   A

4-10x7
NEXTracker holes

Junction box

400
1360
2094

Back View (Portrait)

Section A-A

35

35

Section B-B

35

20

I-V CURVES OF PV MODULE(460W)

P-V CURVES OF PV MODULE(460W)

ELECTRICAL DATA(STC)

Peak Power Watts-P$_{MAX}$(Wp)*	450	455	460	465	470	475	480
Power Output Tolerance-P$_{MAX}$(W)				0~+5			
Maximum Power Voltage-V$_{MPP}$(V)	41.4	41.6	41.8	42.0	42.2	42.4	42.6
Maximum Power Current-I$_{MPP}$(A)	10.88	10.95	11.01	11.08	11.14	11.21	11.28
Open Circuit Voltage-V$_{OC}$(V)	49.2	49.4	49.6	49.8	50.0	50.2	50.4
Short Circuit Current-I$_{SC}$(A)	11.61	11.68	11.75	11.82	11.89	11.96	12.03
Module Efficiency (%)	20.7	20.9	21.2	21.4	21.6	21.9	22.1

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5
*Measuring tolerance: ±3%.

ELECTRICAL PARAMETERS AT NMOT

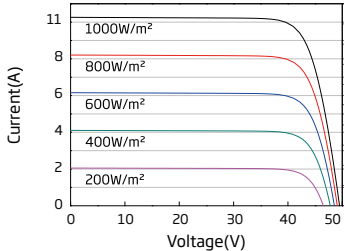| Maximum Power-P$_{MAX}$(Wp)	338.7	342.4	346.1	349.8	353.5	357.2	360.9
Maximum Power Voltage-V$_{MPP}$(V)	38.7	38.9	39.1	39.3	39.5	39.7	39.9
Maximum Power Current-I$_{MPP}$(A)	8.76	8.81	8.86	8.91	8.96	9.01	9.06
Open Circuit Voltage-V$_{OC}$(V)	47.0	47.2	47.4	47.6	47.8	48.0	48.2
Short Circuit Current-I$_{SC}$(A)	9.25	9.30	9.36	9.41	9.46	9.51	9.56

NMOT: Irradiance 800 W/m², Ambient Temperature 20°C, Wind Speed 1 m/s.
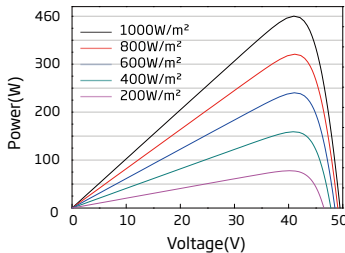
MECHANICAL DATA

Solar Cells	Monocrystalline, 166mm(9BB)
Cell Orientation	144cells(6*24)
Module Dimensions	2094*1038*35mm
Weight	24kg(Approx)
Glass	3.2mm, High Transmission, AR Coated Heat Strengthened Glass
Encapsulant Material	EVA/POE
Backsheet	White
Frame	Anodized Aluminium Alloy
J-Box	IP68 rated (3 bypass diodes)
Cables	Photovoltaic Technology Cable 4.0mm² Portrait: N 300mm/P 300mm Landscape: N 1400mm/P 1400mm (Opt)
Wind/Snow Load	2400Pa / 5400Pa*
Connector	MC4 Compatible /MC4 EVO2/TS4*

*Please refer to regional datasheet for specified connector.

TEMPERATURE RATINGS

NMOT (Nominal Module Operating Temperature)	42℃ ± 2
Temperature Coefficient of P$_{MAX}$	-0.37%/ ℃
Temperature Coefficient of V$_{OC}$	-0.30%/ ℃
Temperature Coefficient of I$_{SC}$	0.05%/ ℃

MAXIMUM RATINGS

Operational Temperature	-40~+85℃
Maximum System Voltage	1500V DC (IEC)
Max Series Fuse Rating	20A

(Do not connect Fuse in Combiner Box with two or more strings in parallel connection)

WARRANTY

10 year Product Workmanship Warranty

25 year Power Warranty

(Please refer to product warranty for details)

PACKAGING CONFIGURATION

Modules per pallet: 30(+2) pieces

Modules per 40HQ container: 682pieces

Rosen Solar
To light up the world

Email: info@rosensolar.com

Website: www.rosensolar.com