# HIGH PERFORMANCE MONOCRYSTALLINE PERC MODULE



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\* As there are different certification requirements in different markets, please contact your local Risen Energy sales representative for the specific certificates applicable to the products in the region in which the products are to be used.

## RISEN ENERGY CO., LTD.

Risen Energy is a leading, global tier 1 manufacturer of high-performance solar photovoltaic products and provider of total business solutions for residential, commercial and utility-scale power generation. The company, founded in 1986, and publicly listed in 2010, compels value generation for its chosen global customers. Techno-commercial innovation, underpinned by consummate quality and support, encircle Risen Energy's total Solar PV business solutions which are among the most powerful and cost-effective in the industry. With local market presence and strong financial bankability status, we are committed, and able, to building strategic, mutually beneficial collaborations with our partners, as together we capitalise on the rising value of green energy.

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## RSM144-7-440M-460M

**144 CELL** Mono PERC Module

Power Output Range

440-460Wp

**1500VDC** Maximum System Voltage **20.8%** Maximum Efficiency

## **KEY SALIENT FEATURES**



Global, Tier 1 bankable brand, with independently certified state-of-the-art automated manufacturing



Industry leading lowest thermal co-efficient of power



Industry leading 12 years product warranty



Excellent low irradiance performance



Excellent PID resistance



Positive tight power tolerance



Dual stage 100% EL Inspection warranting defect-free product



Module Imp binning radically reduces string mismatch losses



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Excellent wind load 2400Pa & snow load 5400Pa under certain installation method

Comprehensive product and system certification \* IEC61215:2016; IEC61730-1/-2:2016;

- ISO 9001:2015 Quality Management System
- ISO 14001:2015 Environmental Management System
- ISO 45001:2018 Occupational Health and Safety Management System

## LINEAR PERFORMANCE WARRANTY

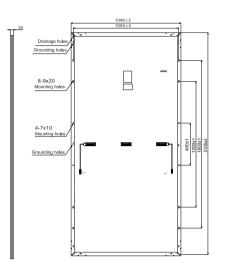
12 year Product Warranty / 25 year Linear Power Warranty



★ Please check the valid version of Limited Product Warranty which is officially released by Risen Energy Co., Ltd



### Dimensions of PV Module



## **ELECTRICAL DATA (STC)**

Model Number	RSM144-7-440M	RSM144-7-445M	RSM144-7-450M	RSM144-7-455M	RSM144-7-460M
Rated Power in Watts-Pmax(Wp)	440	445	450	455	460
Open Circuit Voltage-Voc(V)	49.50	49.60	49.70	49.80	49.90
Short Circuit Current-Isc(A)	11.30	11.40	11.50	11.60	11.70
Maximum Power Voltage-Vmpp(V)	41.13	41.25	41.30	41.40	41.50
Maximum Power Current-Impp(A)	10.70	10.80	10.90	11.00	11.10
Module Efficiency (%) *	19.9	20.1	20.4	20.6	20.8

STC: Irradiance 1000 W/m², Cell Temperature 25°C, Air Mass AM1.5 according to EN 60904-3.

 $\star$  Module Efficiency (%): Round-off to the nearest number

## **ELECTRICAL DATA (NMOT)**

Model Number	RSM144-7-440M	RSM144-7-445M	RSM144-7-450M	RSM144-7-455M	RSM144-7-460M
Maximum Power-Pmax (Wp)	329.6	333.9	338.2	342.5	346.9
Open Circuit Voltage-Voc (V)	46.18	46.39	46.43	46.61	46.67
Short Circuit Current-Isc (A)	9.27	9.35	9.43	9.51	9.59
Maximum Power Voltage-Vmpp (V)	37.80	37.90	38.00	38.10	38.20
Maximum Power Current-Impp (A)	8.72	8.81	8.90	8.99	9.08

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

#### **MECHANICAL DATA**

Solar cells	Monocrystalline 166×83mm
Cell configuration	144 cells (6×12+6×12)
Module dimensions	2108×1048×30mm
Weight	25.5kg
Superstrate	High Transmission, Low Iron, Tempered ARC Glass
Substrate	White Back-sheet
Frame	High strength alloy steel , Black
J-Box	Potted, IP68, 1500VDC, 3 Schottky bypass diodes
Cables	4.0mm² (12AWG), Positive(+)350mm, Negative(-)350mm (Connector Included )
Connector	Risen Twinsel PV-SY02, IP68

## **TEMPERATURE & MAXIMUM RATINGS**

44°C±2°C
-0.29%/°C
0.05%/°C
-0.37%/°C
-40°C~+85°C
1500VDC
20A
20A

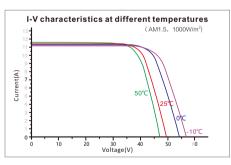
### **PACKAGING CONFIGURATION**

	40ft(HQ)	20ft
Number of modules per container	770	175
Number of modules per pallet	35	35
Number of pallets per container	22	5
Packaging box dimensions (LxWxH) in mm	2140×1130×1180	2140×1130×1180
Box gross weight[kg]	940	940

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CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT. ©2022 Risen Energy, All rights reserved. Contents included in this datasheet are subject to change without notice. No special undertaking or warranty for the suitability of special purpose or being installed in extraordinary surroundings is granted unless as otherwise specifically committed by manufacturer in contract document.

RSM144-7-450M I-V characteristics at different irradiations 500 1000 W/m 12 450 11 400 10 800 W/m² 350 300 N in No Current(A) 600 W/m<sup>2</sup> 200 400 W/n 150 100 50 20 ) 30 Voltage(V) 40



## Our Partners:

REM144-M-9BB-EN-H1-1-2022

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