

### RISEN ENERGY CO., LTD.

Risen Energy is a leading global manufacturer of high-efficiency, Tier 1 ranked photovoltaic products and a full-service provider of business solutions for residential, commercial and utility power generation. Founded in 1986 and listed on the stock exchange since 2010, the company contributes to the profitability of its customers around the world. Technical and commercial innovation, combined with outstanding quality and comprehensive technical support are the hallmarks of all Risen Energy photovoltaic business solutions, which are among the most cost-effective and efficient in the industry. Thanks to our presence in the local market and a stable financial situation, we are able to build strategic, mutually fruitful cooperation with our partners, because together we benefit from the growing value of green energy. Tashan Industry Zone, Meilin, Ninghai 315609, Ningbo | China

Tel: +86-574-59953239Fax: +86-574-59953599

 $\hbox{E-mail: marketing @risenenergy.com Website: www.risenenergy.com}\\$ 



## RSM144-7-435M-455M

144 CELL 435-455Wp

Modut mono PERC Power

ISOOVDC 20.6%

Maximum voltage Effectiveness

# most important characteristics

Bloomber TIER 1

A global, financially reliable, Tier 1 rated company, with independently certified, state-of-the-art automated production



Highest support / thermal power factor in the industry



Longest 12-year product warranty offered on the market



Excellent performance with low solar radiation



High resistance to voltage induced degradation (PID)



Positive power tolerance



Two-step 100% EL inspection to guarantee a dehydration-free product



Significantly less mismatch losses due to sorting by Imp module



Guaranteed reliability and superior quality that far exceeds certification requirements

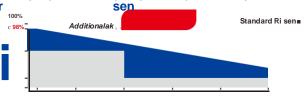


Certified to withstand harsh environmental conditions

- Anti-reflective and anti-dirt surface minimizes power loss due to dirt and dust
- High resistance to salt spray, ammonia and windblown sand makes this product ideal for coastal, agricultural and desert environments
- Excellent resistance to mechanical load of 2400 Pa and snow load of 5400 Pa

#### LINEAR PERFORMANCE GUARANTEE

12-year product warranty / 25-year linear power warranty



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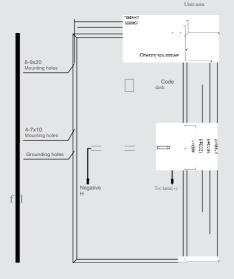
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\*Please talk eith eitim eito read and understand the full version of the Limited Product Warranty that has been officially published by Risen Energy Co., Ltd.

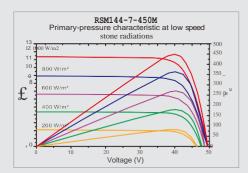
THE POWER OF RISING VALUE

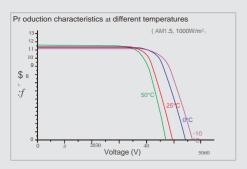


#### Photovoltaic module dimensions











### **ELECTRICAL DATA (STC)**

Model number	RSM144-7-435M	RSM144-7-440M	RSM144-7-445M	RSM144-7-450M	RSM 144-7-455M
Rated power in watts - Pmax {Wpl	435	440	445	450	455
Open circuit voltage -Voe (V)	49.40	49.50	49.60	49.70	49.80
Short-circuit current - Isc {Al	11.20	11.30	11.40	11.50	11.60
voitage at maximum power point - Vmpp {VI	41.05	41.13	41.25	41.30	41.40
Prqd at maximum power point-Impp {Al	10.60	10.70	10.80	10.90	11.00
Module efficiency (%1 *	19.7	19.9	20.1	20.4	20.6

STC: Stacking radius 1000 W/m² fire temperature 25°(, air mass AM 1,5 in accordance with EN 60904-3.

### **ELECTRICAL DATA (NMOT)**

Model number	RSM144-7-435M	RSM144-7-440M	RSM144-7-445M	RSM144-7-450M	RSM144-7-455M
Maximum power - Pmax {Wpl	325.2	329.6	333.9	338.2	342.5
Open circuit voltage -Voe M	45.45	46.18	46.39	46.43	46.61
Short-circuit current- Isc (Al	9.18	9.27	9.35	9.43	9.51
Voltage at maximum power point -Vmpp{V)	37.60	37.8 0	37.90	38.00	38.10
Prqd at maximum power - Impp (Al	8.65	8.72	8.81	8.90	8.99

NMOT: Radiant intensity 800 Wim2 Ambient temperature 20°(, Wind speed 1 m/s

#### **MECHANICAL DATA**

Solar cells	Monocrystalline
Cell configuration	144 fire wa (6x12+6x12)
Module dimensions	2108x1048x35mm
Weight	24.5kg
Front shell	High transmittance, low iron content, ARC tempered glass
Posterior Ocular Sheath	White foil
Frame	Anodized aluminum, 6063TS alloy, Co/or sr ebr
Terminal box	In IP6B sealed housing, 1500 VDC, 3 Schottky shunt diodes
Cables	4.0mm' (12AWG), positive (+)350mm, negative(-)350mm (Connector Included)
Zlqcza	Risen Twinsel PV-SY02, IP68

#### TEMPERATURE AND MAXIMUM RATINGS

Nominal modulus operating temperature {NMOT}	44°C±2°C
Support6/temperature factor Voe	-0.29% i° C
Wsp 6/ temperature factor lsc	0.05% i° C
Support6/temperature factor Pmax	-0.37% /° C
Operating temperature	-40 °C~+85 °C
Max. system voltage	1500VDC
Max. fuse rating in series	20A
Limitation of reverse current	20A

### information regarding the transaction

	40ft(HQ)	20ft
Number of modules per container	682	155
Number of modut6ons per pa/et	31	31
Number of pallets per container	22	5
Packaging dimensions {L x W x H [mm]	2140x1135x1180	2140x1135x1180
Gross packaging weight [kg]	815	815

CAUTION: READ THE SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THIS PRODUCT.

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<sup>\*</sup> Modulus efficiency (%1: rounded to the nearest whole number)