

## MONO CRYSTALLINE HALF-CUT MODULE

430 / 435 / 440 / 445 / 450 Watts

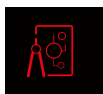
# Black Panther



## Overview

Ground breaking technology: higher power output, improved system performance - the ideal solution for end users who want a fast turnaround on their investments. A fully certified premium quality and high efficiency module made with A Grade materials.

## Key Benefits



Certified by Independent Engineering Bodies



Product Liability Insurance



Ultra High Power Output



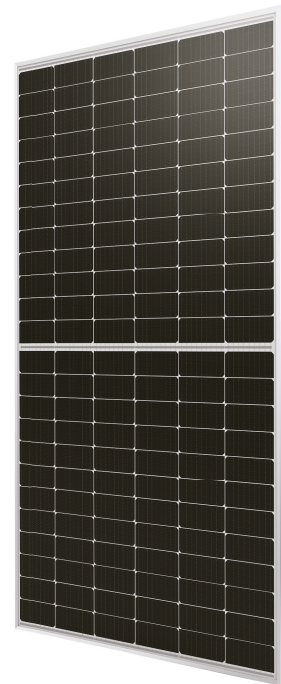
15 Years Limited Product Warranty



Low Resistive Losses



Low LCOE



Guaranteed mechanical resistance to severe weather conditions



Positive Tolerance

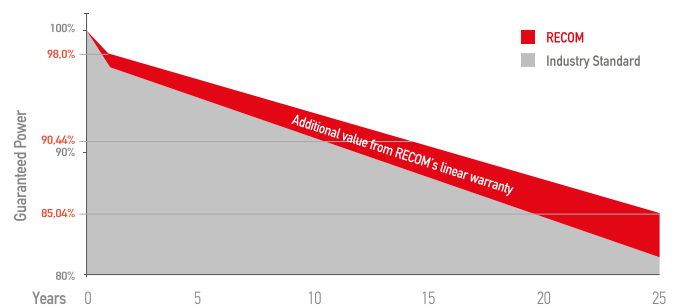


100 % electro-luminescence tested

## Tests, Certifications and Warranties

Standard Tests	IEC 61215, IEC 61730
Factory Quality Tests	ISO 9001: 2015, ISO 14001: 2015
Certifications	Conformity to CE, PV CYCLE Fire safety Class C according to UL790
Insurance	Third party liability insurance provided by Liberty Mutual
Wind and Snow Loads Testing	Module certified to withstand extreme wind (2400 Pascal) and snow loads (5400 Pascal)
Power Tolerance	Guaranteed +0%/+5% (STC condition)
Warranties	<ul style="list-style-type: none"> <li>15-year limited product warranty</li> <li>15-year manufacturer warranty on 90.44% of the nominal performance</li> <li>25-year transferable linear power output warranty</li> </ul>

## Linear Performance Warranty



First Year Output **≥ 98%**      2-25 Year Decline **≤ 0.54%**      25 Year Output **≥ 85.04%**

# MONO CRYSTALLINE HALF CUT MODULE

RCM-xxx-6MF (xxx=430-450)

## Electrical Characteristics

POWER CLASS <sup>(1)</sup>			430		435		440		445		450	
Testing Condition			STC <sup>(2)</sup>	NMOT <sup>(3)</sup>	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Maximum Power	P <sub>max</sub>	[Wp]	430	322	435	326	440	330	445	334	450	338
Maximum Power Voltage	V <sub>mp</sub>	[V]	40,6	37,7	40,8	37,9	41,0	38,1	41,2	38,2	41,4	38,3
Maximum Power Current	I <sub>mp</sub>	[A]	10,60	8,56	10,67	8,61	10,74	8,66	10,81	8,75	10,88	8,84
Open Circuit Voltage	V <sub>oc</sub>	[V]	49,2	46,1	49,4	46,3	49,6	46,5	49,8	46,7	50,0	46,9
Short Circuit Current	I <sub>sc</sub>	[A]	11,19	9,08	11,26	9,13	11,33	9,19	11,40	9,25	11,47	9,31
Module Efficiency	Eff	[%]	19,5%	14,60	19,7%	14,70	19,9%	14,90	20,1%	15,10	20,4%	15,30
Maximum Series Fuse	I <sub>R</sub>	[A]	20									
Maximum System Voltage	V <sub>sys</sub>	[V]	1000 / 1500 (IEC)									

(1) Measurement Tolerances: P<sub>max</sub> (± 3%), I<sub>sc</sub> & V<sub>oc</sub> (± 5%) - Power Classification 0/+5W

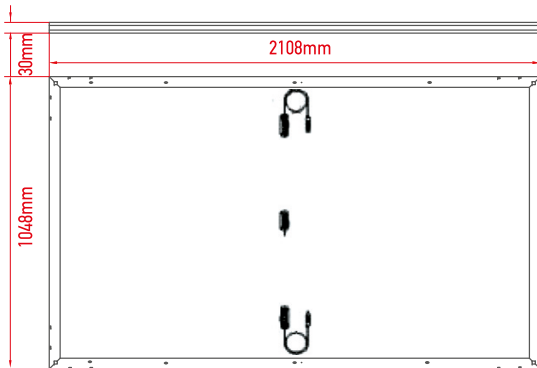
(2) STC (Standard Testing Condition): Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, AM 1.5

(3) NMOT (Nominal Operating Module Temperature): Irradiance 800W/m<sup>2</sup>, NMOT, Ambient Temperature 20°C, AM 1.5, Wind Speed 1m/s

## Mechanical Data

Dimensions	2108 mm x 1048 mm x 30 mm
Weight	24.0 Kg
Cell Type	Mono Perc - 166mm x 83mm (2 x 72 Pcs) - M6
Front Glass	3.2mm Tempered and low iron glass + ARC
Rear Side	Anti-aging film
Frame	Anodized Aluminium Alloy
Junction Box	IP68 - 3 Bypass Diodes
Connector	MC4 compatible
Output cable	4mm <sup>2</sup> - Landscape: 1300mm Portrait: N 150mm/P 300mm

## Dimensions

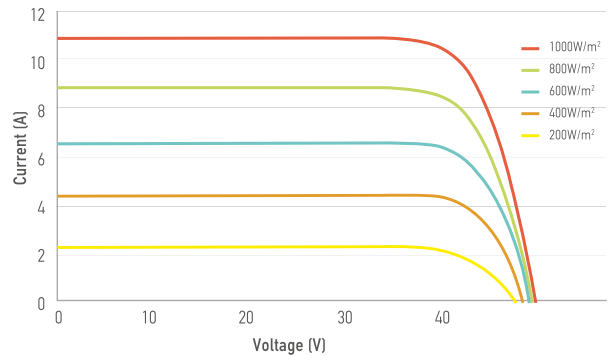


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## I-V Curve

The module relative power loss at low light irradiance of 200W/m<sup>2</sup> is less than 3%.



## Temperature Characteristics

P <sub>max</sub> Temperature Coefficient	-0.36% / °C
V <sub>oc</sub> Temperature Coefficient	-0.28% / °C
I <sub>sc</sub> Temperature Coefficient	+0.05 % / °C
Operating Temperature	-40 ~ +85 °C
Nominal Operating Module Temperature (NMOT)	41 ± 3 °C

## Packing Configuration

Container	40' (HC)
Pieces per Pallet	36
Pallets per Container	22
Pieces per Container	(36+36+5) x 11 = 847

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\*\*Release RCM-xxx-6MFxxx=430-450)-P-M6-30-SW-2021-06-v1.0