

# MONO CRYSTALLINE HALF-CUT MODULE

485 / 490 / 495 / 500 / 505 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

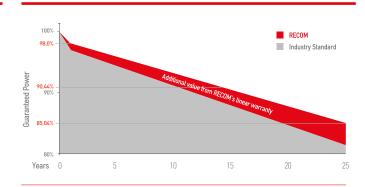


100 % electroluminescence tested

#### 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	Product liability insurance provided by Allianz
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> <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

2-25 Year Decline

≤ 0.54%

25 Year Output

≥ 85.04%

#### **Electrical Characteristics**

POWER CLASS (1)			485		490		495		500		505	
Testing Condition			STC (2)	NMOT <sup>(3)</sup>	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Maximum Power	Pmax	[Wp]	485	364	490	368	495	372	500	376	505	380
Maximum Power Voltage	Vmp	[V]	37,35	34,52	37,50	34,67	37,65	34,82	37,80	34,97	37,92	35,09
Maximum Power Current	Imp	[A]	12,99	10,55	13,07	10,62	13,15	10,69	13,23	10,76	13,32	10,83
Open Circuit Voltage	Voc	[V]	45,09	41,58	45,24	41,73	45,39	41,88	45,54	42,03	45,69	42,17
Short Circuit Current	Isc	[A]	13,45	11,19	13,54	11,28	13,63	11,36	13,72	11,44	13,82	11,52
Module Efficiency	Eff	[%]	20,42		20,64		20,85		21,06		21,27	
Maximum Series Fuse	<b>I</b> R	[A]	25									
Maximum System Voltage	Vsys	[V]	1000 / 1500 V									

(1) Measurement Tolerances: Pmax (± 3%), Isc & Voc (± 5%) - Power Classification 0/+5W

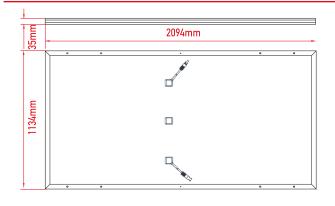
(2) STC (Standard Testing Condition): Irrandiance 1000W/m², Cell Temperature 25°C, AM 1.5

(3) NMOT (Nominal Operating Module Temperature): Irrandiance 800W/m², NMOT, Ambient Temperature 20°C, AM 1.5, Wind Speed 1m/s

#### Mechanical Data

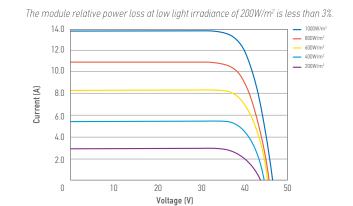
Dimensions	2094mm x 1134mm x 35mm
Weight	27.0 Kg
Cell Type	Mono Perc - 182mm x 91mm (2 x 66 Pcs) - M10
Front Glass	3.2mm Tempered and low iron glass + ARC
Rear Side	Anti-aging film
Frame	Anodized Aluminium Alloy
Junction Box	IP68 - 3 Bypass Diodes
Connector	MC4 compatible
Output cable	4.0mm <sup>2</sup> - Lengths (-) 400mm and (+) 300mm or customized

#### **Dimensions**



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#### I-V Curve



## **Temperature Characteristics**

Pmax Temperature Coefficient	-0.350% / °C
Voc Temperature Coefficient	-0.270% / °C
Isc Temperature Coefficient	+0.048% / °C
Operating Temperature	-40~+85°C
Nominal Operating Module Temperature (NMOT)	41±3 °C

## **Packing Configuration**

Container	40' (HC)
Pieces per Pallet	31
Pallets per Container	22
Pieces per Container	$(31+31) \times 11 = 682 pcs$

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