

#### MONO CRYSTALLINE MODULE

280 / 285 / 290 / 295 / 300 / 305 / 310 Watts

# Black Panther

#### **Overview**

A fully certified, premium quality and high efficiency module made with A Grade materials. Guaranteed positive tolerance of up to 5W, providing a higher output compared to our leading competitors.

# **Key Benefits**



Certified by Independent Engineering Bodies



Product Liability Insurance



Manufactured in EU



12 Years Limited Product Warranty



Anti-PID Technology



Low Carbon Footprint





Guaranteed mechanical resistance to severe weather conditions



Guaranteed Positive Tolerance up to 5W

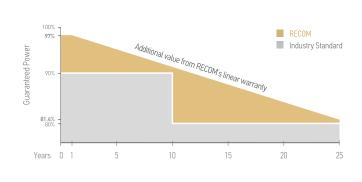


100 % electroluminescence tested

#### Tests. Certifications and Warranties

Standard Tests	UL1703, IEC 61215, IEC 61730
Factory Quality Tests	ISO 9001: 2008, ISO 14001: 2004, ISO17025: 2005
Certifications	Fire Rating Type 1, conformity to CE, PV CYCLE
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)
Positive Tolerance	Guaranteed positive tolerance of up to 5W
Junction Box	IP67 Rated, 3 diodes
Warranties	<ul> <li>12-year limited product warranty</li> <li>15-year manufacturer warranty on 88.55% of the nominal performance</li> <li>25-year transferable linear power output warranty</li> </ul>

#### Linear Performance Warranty



First Year Output

≥ 97%

2-24 Year Decline

≤ 0.65%

25 Year | ≥ **81.4%** 













#### **Electrical Characteristics**

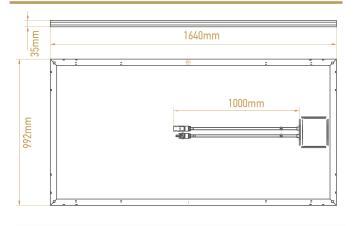
Rated Power	280W	285W	290W	295W	300W	305W	310W
Power Tolerance	$0 \sim +5W$	$0 \sim +5W$	$0 \sim +5W$	$0 \sim +5W$	0~+5W	0~+5W	0~+5W
Maximum Power Voltage (Vmp)	32.48V	32.58V	32.72V	32.78V	32.83V	33.01V	33.09V
Maximum Power Current (Imp)	8.63A	8.75A	8.88A	9.00A	9.14A	9.24A	9.37A
Open Circuit Voltage (Voc)	39.20V	39.80V	39.90V	39.93V	39.98V	40.00V	40.20V
Short Circuit Current (Isc)	8.99A	9.60A	9.75A	9.83A	9.89A	9.93A	9.97A
Module Efficiency	17.30%	17.40%	17.70%	18.00%	18.30%	18.60%	18.90%
Maximum Series Fuse	15A	15A	15A	15A	15A	15A	15A
Maximum System Voltage	1.000 VDC (IEC) - 1.000 VDC (UL) / 1.500 VDC (upon request)						

Tested at Standard Test Conditions. Measurement tolerances:  $\pm$  3%

#### Mechanical Data

Dimensions	1640mm x 992mm x 35mm
Weight	19.0 Kg
Frame	Anodized aluminum
Front Glass	3.2mm ARC, low iron, tempered glass
Output Cables	TUV (2Pfg1169:2007), UL 4703, UL44 4.0mm <sup>2</sup> (0.006 in <sup>2</sup> ), symmetrical lengths (-) 1000mm and (+) 1000mm, MC4 type connectors

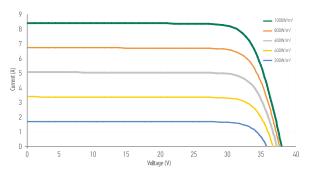
### **Dimensions**



\*\*Release 2018-05. vs.1.
RECOM assumes no liability or responsibility for any typographical error, layout error, misinformation, any other error, omission, contained herein.

# I-V Curve

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



# Temperature Characteristics

Pmax Temperature Coefficient	-0.39% / °C
Voc Temperature Coefficient	-0.30% / °C
Isc Temperature Coefficient	+0.06% / °C
Operating Temperature	-40~+85 °C
Nominal Operating Cell Temperature (NOCT)	45 ± 2 °C

# **Packing Configuration**

Container	40'HC
Pieces per Pallet	30
Pallets per Container	28
Pieces ner Container	8/10

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