

N TYPE MONO CRYSTALLINE BIFACIAL MODULE

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

Black Panther

Overview

Through the use of N-Type high efficiency mono cells and dualglass structure, the overall performance of the BiFacial module increases under optimal conditions up to 30% more than an equivalent monofacial module. A fully certified, premium quality and high efficiency module made with A Grade materials.

Key Benefits



Certified by Independent **Engineering Bodies**



Product Liability Insurance



Engineered in EU



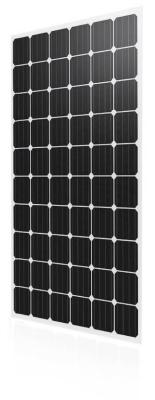
12 Years Limited **Product Warranty**



Anti-PID Technology



Low Carbon **Footprint**





Guaranteed mechanical resistance to severe weather conditions



Guaranteed Positive Tolerance up to 5W

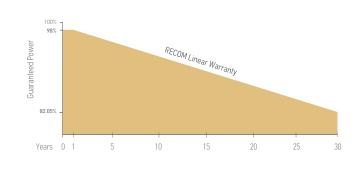


100 % electroluminescence tested

Tests. Certifications and Warranties

Standard Tests	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
Surface Maximum Load Capacity	Above 5400Pa
Positive Tolerance	Guaranteed positive tolerance of up to 5W
Warranties	 12-year limited product warranty 15-year manufacturer warranty on 90.3% of the nominal performance 30-year transferable linear power output warranty

Linear Performance Warranty



First Year Output

≥ 98%

2-29 Year Decline

≤ 0.55%

30 Year Output

≥ 82.05%













Electrical Characteristics

Rated Power	285W	290W	295W	300W	305W	310W
Power Tolerance	$0 \sim +5W$	$0\sim+5W$	$0\sim+5W$	$0\sim+5W$	$0 \sim +5W$	$0\sim+5W$
Maximum Power Voltage (Vmp)	33.12V	33.15V	33.22V	33.30V	33.39V	33.44V
Maximum Power Current (Imp)	8.61A	8.75A	8.88A	9.01A	9.16A	9.28A
Open Circuit Voltage (Voc)	39.07V	39.18V	39.24V	39.30V	39.37V	39.42V
Short Circuit Current (Isc)	9.21A	9.36A	9.50A	9.64A	9.88A	9.92A
Module Efficiency (with frame)	18.91%	19.21%	19.51%	19.81%	20.03%	20.59%
Module Efficiency (without frame)	19.15%	19.46%	19.76%	20.06%	21.43%	21.78%
Maximum Series Fuse	15A	15A	15A	15A	15A	15A

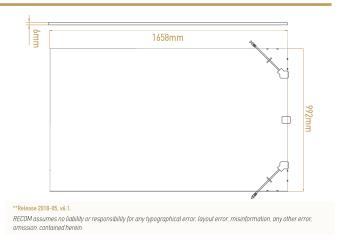
Tested at Standard Test Conditions. Measurement tolerances: \pm 3%

Mechanical Data

Maximum System Voltage

Dimensions (with frame)	1666mm x 1000m x 40mm
Dimensions (without frame)	1658mm x 992mm x 6mm
Weight (with frame)	25.5 Kg
Weight (without frame)	23.0 Kg
Front / Back Glass	2.5 mm
Output Cables	TUV (2Pfg1169:2007), UL 4703, UL44 4.0 mm² (0.006 in²), MC4 type connectors

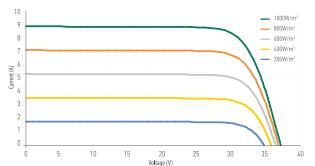
Dimensions (without frame)



I-V Curve

The module relative power loss at low light irradiance of 200W/m² is less than 3%.

1.000 VDC (IEC)



Temperature Characteristics

Pmax Temperature Coefficient	-0.37% / °C
Voc Temperature Coefficient	-0.29% / °C
Isc Temperature Coefficient	$+0.04 \% / {}^{0}C$
Operating Temperature	-40~+85°C
Nominal Operating Cell Temperature (NOCT)	45 ± 2 °C

Packing Configuration

Container	40'HC (with frame)	40'HC (without frame)
Pieces per Pallet	27	33
Pallets per Container	26	26
Pieces per Container	702	858

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