

BIFACIAL HJT MONO CRYSTALLINE HALF CUT MODULE - DOUBLE GLASS

455 / 460 / 465 / 470 /475 Watts





Overview

Hetero Junction (HJT) photovoltaic module is a Ground breaking Technology. HJT technology guarantees high performance and low degradation of the PV module, substantially improving the results and the yield in the time. "Lion" Series module is the ideal solution for end users who want a Quality PV & reliable product over time and a fast turnaround on their investments.

Key Benefits



Anti-PID & LID Technology



Higher yield per surface area



Low LCOE



30 Years Limited Product Warranty



Low Pmax at -0,24 % / °C



Higher Light Conversion





Guaranteed mechanical resistance to severe weather conditions



Positive Tolerance

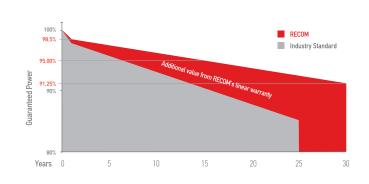


100 % electroluminescence tested

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	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	 30-year limited product warranty 15-year manufacturer warranty on 95,0% of the nominal performance 30-year transferable linear power output warranty

Linear Performance Warranty



First Year Output

≥ **98.5**%

2-30 Year

Decline ≤ **0.25**%

30 Year Output

≥ **91.25**%

Electrical Characteristics

POWER CLASS (1)			455		460		465		470		475	
Testing Condition			STC (2)	NMOT (3)	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Maximum Power	Pmax	[Wp]	455	349,2	460	352,8	465	356,8	470	360,5	475	364,5
Maximum Power Voltage	Vmp	[V]	45,10	43,26	45,30	43,45	45,50	43,64	45,70	43,84	45,90	44,03
Maximum Power Current	Imp	[A]	10,09	8,07	10,15	8,12	10,22	8,18	10,28	8,22	10,35	8,28
Open Circuit Voltage	Voc	[V]	53,05	50,56	53,35	50,84	53,65	51,13	53,95	51,41	54,25	51,70
Short Circuit Current	Isc	[A]	10,90	8,79	10,94	8,82	10,98	8,85	11,02	8,89	11,06	8,92
Module Efficiency	Eff	[%]	20,93		21,16		21,39		21,62		21,85	
Maximum Series Fuse	I R	[A]	20									
Maximum System Voltage	Vsys	[V]	1500V DC									

- (1) Measurement Tolerances: Pmax (\pm 3%), Isc & Voc (\pm 3%) 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

Bi Facial Output (4)

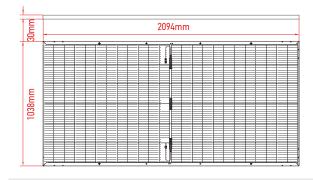
POWER CLASS			455		460		465		470		475	
			Pmax [Wp]	Eff [%]								
	+5	[%]	477,8	22,0%	483,0	22,2%	488,3	22,5%	493,5	22,7%	498,8	22,9%
Power	+10	[%]	500,5	23,0%	506,0	23,3%	511,5	23,5%	517,0	23,8%	522,5	24,0%
with Backside Gain	+15	[%]	523,3	24,1%	529,0	24,3%	534,8	24,6%	540,5	24,9%	546,3	25,1%
	+20	[%]	546,0	25,1%	552,0	25,4%	558,0	25,7%	564,0	25,9%	570,0	26,2%
	+25	[%]	568,8	26,2%	575,0	26,5%	581,3	26,7%	587,5	27,0%	593,8	27,3%
	+30	[%]	591,5	27,2%	598,0	27,5%	604,5	27,8%	611,0	28,1%	617,5	28,4%

(4) Bifaciality Factor > 90% - Back-side power gain depends upon the specific project albedo - Efficiency is according to the surface of the module

Mechanical Data

Dimensions	2094 mm x 1038 mm x 30 mm
Weight	27,0 Kg
Cell Type	HJT - 166mm x 83mm (2 x 72 Pcs) - M6
Front Glass	2.0 mm Tempered and low iron glass + ARC
Rear Side	2.0 mm Tempered and low iron glass
Frame	Anodized Aluminium Alloy
Junction Box	IP68, 3 Bypass diodes
Connector	Genuine MC4 Evo2, or MC4 compatible
Output cable	4mm ² - Length = 300mm or customized

Dimensions

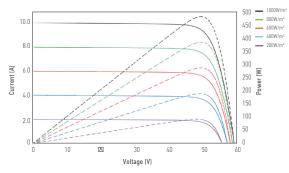


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I-V Curve

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



Temperature Characteristics

Pmax Temperature Coefficient	-0.24% / °C
Voc Temperature Coefficient	-0.22% / °C
Isc Temperature Coefficient	+0.047% / °C
Operating Temperature	-40~+85 °C
Nominal Operating Module Temperature (NMOT)	42 ± 2 °C

Packing Configuration

Container	40°HC
Pieces per Pallet	35
Pallets per Container	22
Pieces per Container	(35+35)x11=770 pcs