JAHASOLAR

JSM 144 HalfCut cells

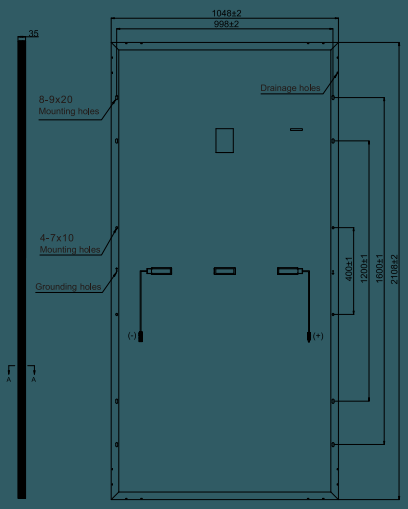
JS SERIES OF MONOCRYSTALLINE SOLAR MODULES

Proven Quality Made in Kosovo

Jaha Solar is the first manufacturer of TIER-1 PV solar panels in Kosovo and Balkans. Founded in 2016, Jaha Solar utilizes the latest technology for PV module manufacturing. Through its products, the company aims to promote and support the renewable energy sector in Kosovo and beyond. As such, Jaha Solar is a leading provider of solutions for residential, commercial and utility scale PV plants in the country and in the region.

Jaha Solar has successfully passed the ISO 9001: 2008 certification for quality management system by TUV NORD CERT. TUV NORD certified JAHA SOLAR's factory for the production of photovoltaic panels and the sale and installation of photovoltaic systems under the following standards: CE Mark, IEC 62804 PID FREE, IEC 61701, IEC 61703 and IEC 61215.

Dimensions of PV Module Unit: mm



Key Highlights

- Tier 1 quality;
- 100% PID free;
- German and Italian Manufacturing facilities;
- Anti-reflective & anti-soiling
- Snow load class III;
- Maximum yield and high annual output;
- 12 - years product guarantee;
- 25 - year 80% power guarantee;
- Product Made in Europe;

Manufactured and tested according to IEC 61215 and 61730 TUV-Nord certified

Basic Data

- Cell Dimensions: **166x83mm;**
- Module Weight: **24.50 kg;**
- Number of cells: **144 HalfCut Cells;**
- Cell type: **Monocrystalline Si;**
- Front cover: **Solar glass;**
- Frame: **Anodized Aluminium;**
- Cable length: **2x350mm;**
- Connector type: **PV-SY02, IP68;**
- Max system voltage: 1**500 VDC;**
- Max Series Fuse Rating: **20A**
- Limiting Reverse Current: **20A**

JSM 144 HalfCut cells types:

JSM72H-440

JSM72H-445

JSM72H-450

JSM72H-455

JSM 144 HalfCut cells				
Type	**JSM72H-440**	**JSM72H-445**	**JSM72H-450**	**JSM72H-455**
Rated Maximum Power	440	445	450	455
Open Circuit Voltage	49.50	49.60	49.70	49.80
Maximum Power Voltage	41.13	41.25	41.30	41.40
Short Circuit Current	11.30	11.40	11.50	11.60
Maximum Power Current	10.70	10.80	10.90	11.00
Module Efficiency	19.90	20.1	20.4	20.6
Power Tolerance	0-+5			
Temperature Coefficient of Isc	0.05%			
Temperature Coefficient of Voc	-0.29%			
Temperature Coefficientof Pmax	-0.370%			
Dimensions	2108x1048x35mm			
Weight	24.5 kg			
STC	1000 W/m^2, cell temperature 25*C. Air Mass 1.5			

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company/jahasolar jahaSolar
jahasolar www.jahasolar.com

blueplanet 15.0 + 20.0 TL3

Transformerless, three-phase string inverters.

The all-rounders among inverters.

High flexibility for demanding system designs and string configurations

Manifold safety functions

Installation-friendly connection area, user-friendly operation

Numerous standard interfaces for extensive communication options

Internal storage of log data, no separate data logger required

OD+ version against salt corrosion in coastal areas

Technical Data

DC input data	15.0 TL3	20.0 TL3
Max. recommended PV generator	18 000 W	24 000 W
MPP range	420 – 800 V	515 – 800 V
Operating range	200 – 950 V	200 – 950 V
Rated DC voltage / start voltage	673 / 250 V	673 / 250 V
Max. no-load voltage	1 000 V	1 000 V
Max. input current	2 x 20 A	2 x 20 A
Max. short circuit current $I_{sc\ max}$	2 x 32 A	2 x 32 A
Number of MPP tracker	2	2
Connection per tracker	2	2
Max.input power per tracker	15 000 W	15 000 W
AC output data		
Rated output	15 000 VA	20 000 VA
Max. power	15 600 VA	20 800 VA
Line voltage	240 V / 415 V (3 / N / PE) 230 V / 400 V (3 / N / PE) 220 V / 380 V (3 / N / PE)	277 V / 480 V (3 / N / PE) 240 V / 415 V (3 / N / PE) 230 V / 400 V (3 / N / PE) 220 V / 380 V (3 / N / PE)
Voltage range (Ph-Ph)	305 – 480 V	305 – 480 V
Rated frequency (range)	50 Hz / 60 Hz (42 – 68 Hz)	50 Hz / 60 Hz (42 – 68 Hz)
Rated current	3 x 20.9 A @ 415 V 3 x 21.7 A @ 400 V 3 x 22.8 A @ 380 V	3 x 24.1 A @ 480 V 3 x 27.9 A @ 415 V 3 x 28.9 A @ 400 V 3 x 30.4 A @ 380 V
Max. current	3 x 23.0 A	3 x 31.0 A
Reactive power / cos phi	0 – 100 % Snom / 0.30 ind. – 0.30 cap.	0 – 100 % Snom / 0.30 ind. – 0.30 cap.
Max. total harmonic distortion (THD)	0.7 %	0.5 %
Number of grid phases	3	3
General data		
Max. efficiency	98.0 %	98.4 %
Europ. efficiency	97.6 %	98.1 %
CEC efficiency	97.6 %	98.1 %
Standby consumption	1.5 W	1.5 W
Circuitry topology	transformerless	transformerless
Mechanical data		
Display	graphical display + LEDs	graphical display + LEDs
Control units	4-way navigation + 2 buttons	4-way navigation + 2 buttons
Interfaces	Ethernet, USB, RS485, optional: 4-DI	Ethernet, USB, RS485, optional: 4-DI
Fault signalling relay	potential-free NOC max. 30 V / 1 A	potential-free NOC max. 30 V / 1 A
DC connection	DC plugs (MC4)	DC plugs (MC4)
AC connection	spring-loaded terminal, max. 16 mm²	spring-loaded terminal, max. 16 mm²
Ambient temperature	-25 °C – +60 °C [1)]	-25 °C – +60 °C [1)]
Humidity	0 – 95 %	0 – 95 %
Max. installation elevation (above MSL)	2 000 m	2 000 m
Min. distance from coast	2 000 m / 500 m (OD+ version)	500 m
Cooling	temperature controlled fan	temperature controlled fan
Protection class	IP65	IP65
Noise emission	< 52 db (A)	< 53 db (A)
H x W x D	690 x 420 x 200 mm	690 x 420 x 200 mm
Weight	48 kg	48 kg
Certifications		
Safety	EN 62109-1 / -2, EN 61000-6-1 / -2 / -3, EN 61000-3-2 / -3 / -11 / -12	
Grid connection rule	overview see homepage / download area	

[1)] Power derating at high ambient temperatures

Versions	15.0 TL3	20.0 TL3
DC switch	✓	✓
DC surge protection	○	○

standard = ✓ upgradeable = ○