

DEEP BLUE 3.0

Mono

550W MBB Bifacial Mono PERC
Half-cell Double Glass Module
JAM72D30 525-550/MB Series

Introduction

Assembled with 11BB bifacial PERCUM cells and half-cell configuration, these double glass modules have the capability of converting the incident light from the rear side together with the front side into electricity, providing higher output power, lower temperature coefficient, less shading loss, as well as enhanced tolerance for mechanical loading.



Higher output power



More reliable, more stable
power generation



Less shading effect

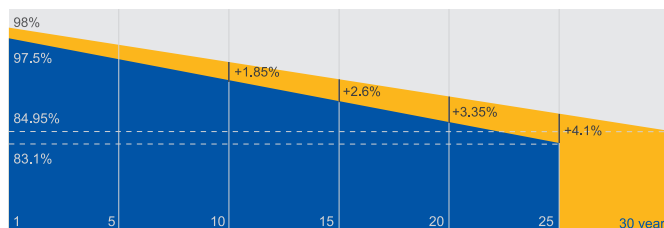


Lower temperature coefficient

Superior Warranty

- 12-year product warranty
- 30-year linear power output warranty

0.45% Annual Degradation
Over 30 years



■ Bifacial double glass module linear power warranty

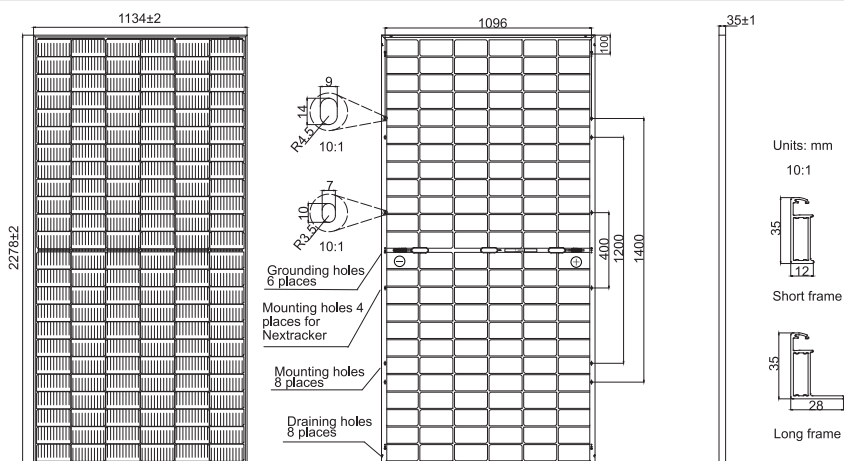
■ Standard module linear power warranty

Comprehensive Certificates

- IEC 61215, IEC 61730, UL 61215, UL 61730
- ISO 9001: 2015 Quality management systems
- ISO 14001: 2015 Environmental management systems
- ISO 45001: 2018 Occupational health and safety management systems
- IEC TS 62941: 2016 Terrestrial photovoltaic (PV) modules – Guidelines for increased confidence in PV module design qualification and type approval



MECHANICAL DIAGRAMS



Remark: customized frame color and cable length available upon request

SPECIFICATIONS

Cell	Mono
Weight	31.8kg±3%
Dimensions	2278±2mm×1134±2mm×35±1mm
Cable Cross Section Size	4mm ² (IEC), 12 AWG(UL)
No. of cells	144(6×24)
Junction Box	IP68, 3 diodes
Connector	QC 4.10-35
Cable Length (Including Connector)	Portrait:300mm(+)/400mm(-); Landscape:1300mm(+)/1300mm(-)
Front Glass/Back Glass	2.0mm/2.0mm
Packaging Configuration	31pcs/Pallet 620pcs/40HQ Container

ELECTRICAL PARAMETERS AT STC

TYPE	JAM72D30 -525/MB	JAM72D30 -530/MB	JAM72D30 -535/MB	JAM72D30 -540/MB	JAM72D30 -545/MB	JAM72D30 -550/MB
Rated Maximum Power(P _{max}) [W]	525	530	535	540	545	550
Open Circuit Voltage(V _{oc}) [V]	49.15	49.30	49.45	49.60	49.75	49.90
Maximum Power Voltage(V _{mp}) [V]	41.15	41.31	41.47	41.64	41.80	41.96
Short Circuit Current(I _{sc}) [A]	13.65	13.72	13.79	13.86	13.93	14.00
Maximum Power Current(I _{mp}) [A]	12.76	12.83	12.90	12.97	13.04	13.11
Module Efficiency [%]	20.3	20.5	20.7	20.9	21.1	21.3
Power Tolerance	0~+5W					
Temperature Coefficient of I _{sc} (α _{Isc})	+0.045%/°C					
Temperature Coefficient of V _{oc} (β _{Voc})	-0.275%/°C					
Temperature Coefficient of P _{max} (γ _{Pmp})	-0.350%/°C					
STC	Irradiance 1000W/m ² , cell temperature 25°C, AM1.5G					

Remark: Electrical data in this catalog do not refer to a single module and they are not part of the offer. They only serve for comparison among different module types.

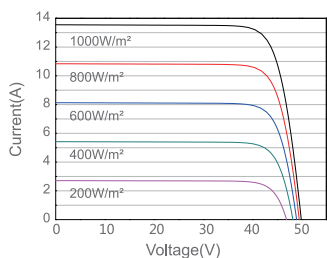
ELECTRICAL CHARACTERISTICS WITH 10% SOLAR IRRADIATION RATIO

OPERATING CONDITIONS

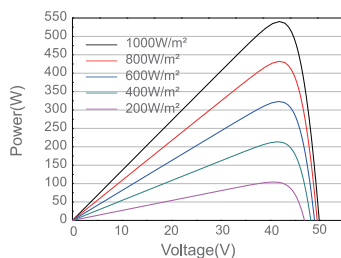
TYPE	JAM72D30 -525/MB	JAM72D30 -530/MB	JAM72D30 -535/MB	JAM72D30 -540/MB	JAM72D30 -545/MB	JAM72D30 -550/MB	Maximum System Voltage	1500V DC
Rated Max Power(Pmax) [W]	562	567	572	578	583	589	Operating Temperature	-40°C~+85°C
Open Circuit Voltage(Voc) [V]	49.54	49.67	49.80	49.93	50.03	50.21	Maximum Series Fuse Rating	30A
Max Power Voltage(Vmp) [V]	41.14	41.31	41.47	41.65	41.78	41.95	Maximum Static Load, Front* Maximum Static Load, Back*	5400Pa(112 lb/ft²) 2400Pa(50 lb/ft²)
Short Circuit Current(Isc) [A]	14.61	14.68	14.76	14.83	14.91	14.98	NOCT	45±2°C
Max Power Current(Imp) [A]	13.65	13.73	13.80	13.88	13.95	14.03	Bifaciality**	70%±10%
Irradiation Ratio(rear/front)							Fire Performance	UL Type 29
10%								
*For NexTracker installations, Maximum Static Load, Front is 2400Pa while Maximum Static Load, Back is 2400Pa.								

CHARACTERISTICS

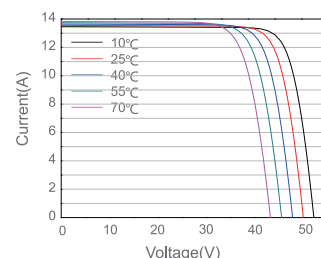
Current-Voltage Curve JAM72D30-540/MB



Power-Voltage Curve JAM72D30-540/MB



Current-Voltage Curve JAM72D30-540/MB



Vertex N

BIFACIAL DUAL GLASS MONOCRYSTALLINE MODULE

PRODUCT: TSM-NEG19RC.20

PRODUCT RANGE: 570-590W

590W

MAXIMUM POWER OUTPUT

0~+5W

POSITIVE POWER TOLERANCE

21.8%

MAXIMUM EFFICIENCY



Increased Customer Value

- Lower LCOE, reduced BOS cost, faster ROI
- Lowest guaranteed first year and annual degradation
- Designed for compatibility with existing mainstream system components
- Higher return on investment



High Power up to 590W

- Up to 21.8% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection



Improved Reliability

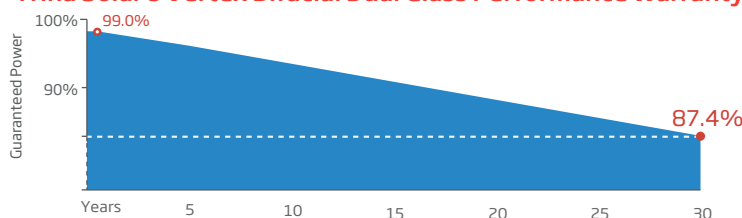
- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Resistant to harsh environments such as salt, ammonia, sand, high temperature and high humidity areas
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load



Better Energy Yield

- Excellent IAM and low irradiation performance, validated by 3rd party certifications
- The unique design provides optimized energy production under inter-row shading conditions
- Lower temperature coefficient (-0.30%) and operating temperature
- Up to 30% additional power gain from back side depending on albedo

Trina Solar's Vertex Bifacial Dual Glass Performance Warranty

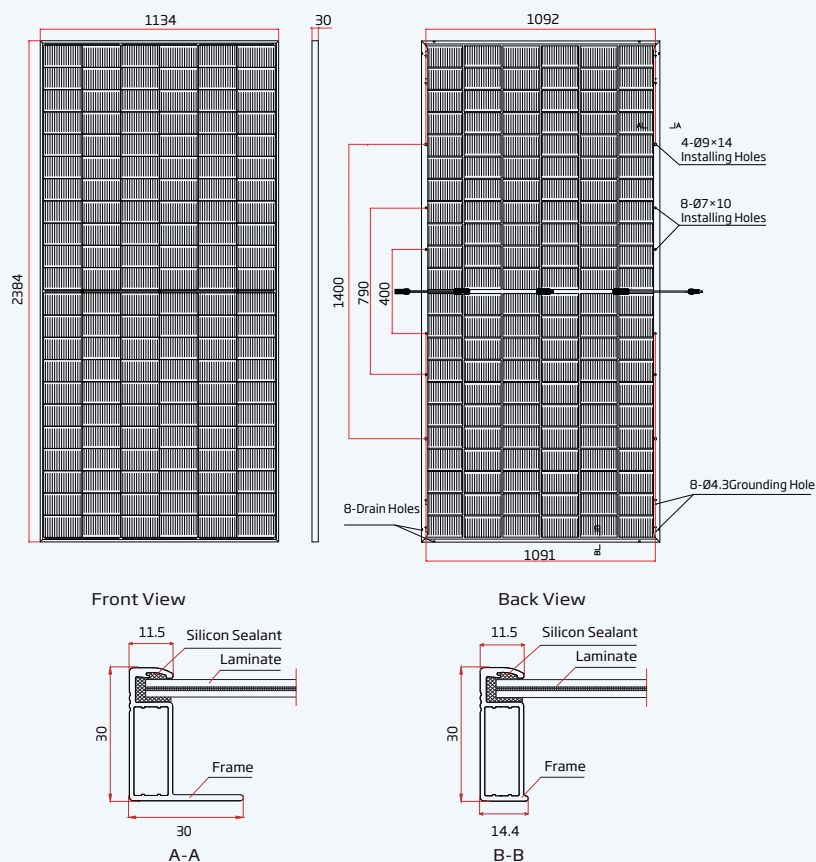


Comprehensive Products and System Certificates

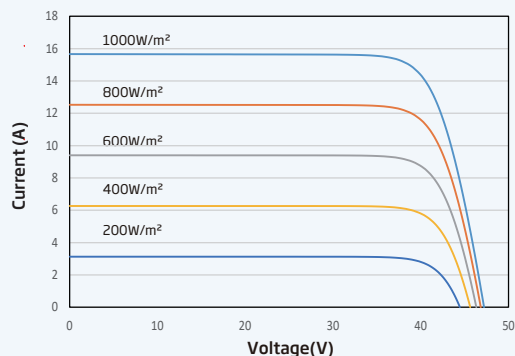


IEC61215/IEC61730/IEC61701/IEC62716/UL61730
 ISO 9001: Quality Management System
 ISO 14001: Environmental Management System
 ISO14064: Greenhouse Gases Emissions Verification
 ISO45001: Occupational Health and Safety Management System

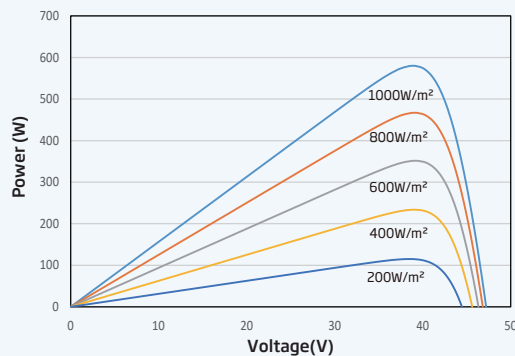
DIMENSIONS OF PV MODULE (mm)



I-V CURVES OF PV MODULE (580W)



P-V CURVES OF PV MODULE (580W)



ELECTRICAL DATA (STC)

Peak Power Watts-P _{MAX} (Wp)*	570	575	580	585	590
Power Tolerance-P _{MAX} (W)	0 ~ +5				
Maximum Power Voltage-V _{MPP} (V)	38.6	38.9	39.2	39.5	39.7
Maximum Power Current-I _{MPP} (A)	14.75	14.78	14.79	14.82	14.86
Open Circuit Voltage-V _{OC} (V)	46.6	46.9	47.2	47.5	47.8
Short Circuit Current-I _{SC} (A)	15.61	15.63	15.65	15.68	15.72
Module Efficiency η_m (%)	21.1	21.3	21.5	21.6	21.8

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5. *Measuring tolerance: ±3%.

ELECTRICAL CHARACTERISTICS with BIFACIAL GAINS (10% Irradiance Ratio)

Total Equivalent power -P _{MAX} (Wp)	616	621	626	632	637
Maximum Power Voltage-V _{MPP} (V)	38.6	38.9	39.2	39.5	39.7
Maximum Power Current-I _{MPP} (A)	15.93	15.96	15.97	16.01	16.05
Open Circuit Voltage-V _{OC} (V)	46.6	46.9	47.2	47.5	47.8
Short Circuit Current-I _{SC} (A)	16.86	16.88	16.90	16.93	16.98
Irradiance ratio (rear/front)	10%				

Power Bifaciality: 80±5%.

ELECTRICAL DATA (NOCT)

Maximum Power-P _{MAX} (Wp)	434	438	442	446	450
Maximum Power Voltage-V _{MPP} (V)	36.3	36.5	36.8	37.1	37.3
Maximum Power Current-I _{MPP} (A)	11.97	11.99	12.00	12.02	12.05
Open Circuit Voltage-V _{OC} (V)	44.2	44.5	44.7	45.0	45.3
Short Circuit Current-I _{SC} (A)	12.58	12.59	12.61	12.64	12.67

NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s.

MECHANICAL DATA

Solar Cells	Monocrystalline 210Rmm N-type
No. of cells	132 cells
Module Dimensions	2384×1134×30 mm (93.86×44.65×1.18 in)
Weight	33.1kg (72.97lb)
Front Glass	2.0 mm (0.08 in), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	EVA/POE
Back Glass	2.0 mm (0.08 in), Heat Strengthened Glass (White Grid Glass)
Frame	30mm (1.18 in) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm ² (0.006 in ²) Portrait: 350/280 mm (13.78/11.02 in)* Landscape: 1400 mm (55.12 in)*
Connector	MC4 EV02 or TS4

*Lengths can be customized

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of P _{MAX}	-0.30%/°C
Temperature Coefficient of V _{OC}	-0.24%/°C
Temperature Coefficient of I _{SC}	0.04%/°C

*Recommended

WARRANTY

12 year Product Workmanship Warranty
30 year Power Warranty
1% first year degradation
0.40% Annual Power Attenuation

(Please refer to product warranty for details)

MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC (IEC) 1500V DC (UL)
Max Series Fuse Rating	30A*

PACKAGING CONFIGURATION

Modules per box: 36 pieces
Modules per 40' container: 504 pieces
Pallets per 40' container: 14

Tiger Neo N-type

72HL4-BDV

560-580 Watt

BIFACIAL MODULE WITH
DUAL GLASS

N-Type

Positive power tolerance of 0~+3%

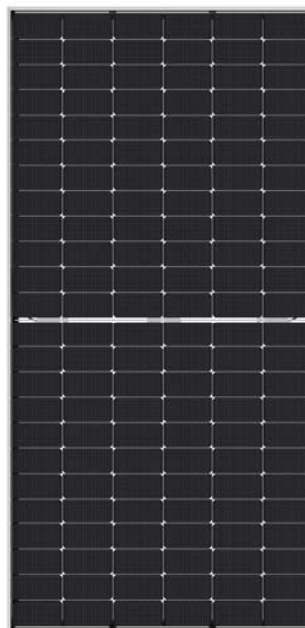
IEC61215(2016), IEC61730(2016)

ISO9001:2015: Quality Management System

ISO14001:2015: Environment Management System

ISO45001:2018

Occupational health and safety management systems



Key Features



SMBB Technology

Better light trapping and current collection to improve module power output and reliability.



PID Resistance

Excellent Anti-PID performance guarantee via optimized mass-production process and materials control.



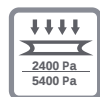
Higher Power Output

Module power increases 5-25% generally, bringing significantly lower LCOE and higher IRR.



Hot 2.0 Technology

The N-type module with Hot 2.0 technology has better reliability and lower LID/LETID.



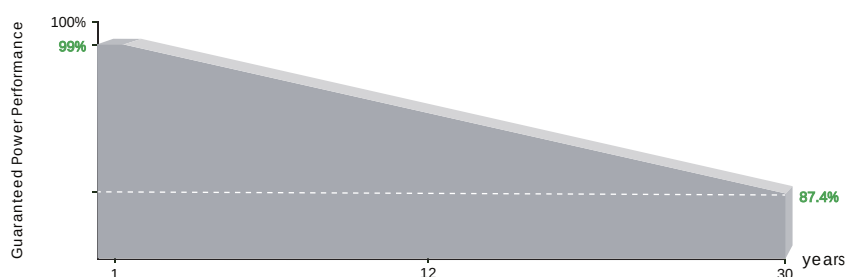
Enhanced Mechanical Load

Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal).



Continuous Quality Assurance

LINEAR PERFORMANCE WARRANTY

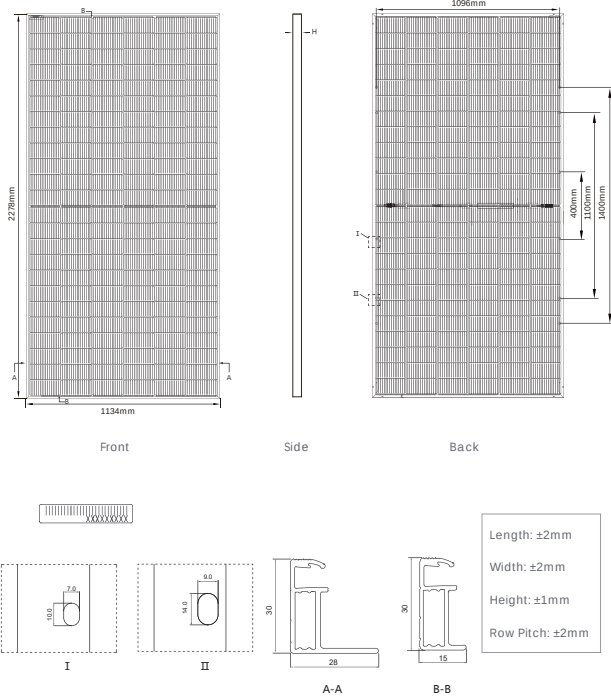


12 Year Product Warranty

30 Year Linear Power Warranty

0.40% Annual Degradation Over 30 years

Engineering Drawings



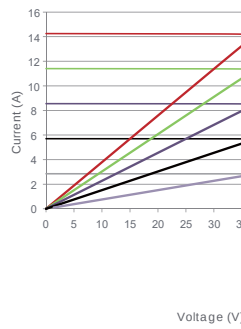
Packaging Configuration

(Two pallets = One stack)

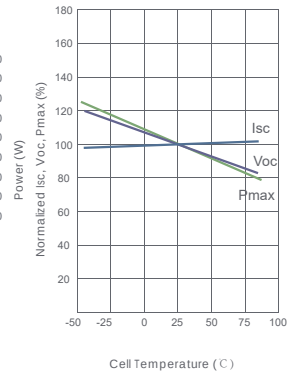
36pcs/pallets, 72pcs/stack, 720pcs/ 40'HQ Container

Electrical Performance & Temperature Dependence

Current-Voltage & Power-Voltage Curves (570W)



Temperature Dependence of Isc, Voc, Pmax



Mechanical Characteristics

Cell Type	N type Mono-crystalline
No. of cells	144 (2×72)
Dimensions	2278×1134×30mm (89.69×44.65×1.18 inch)
Weight	32 kg (70.55 lbs)
Front Glass	2.0mm, Anti-Reflection Coating
Back Glass	2.0mm, Heat Strengthened Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP68 Rated
Output Cables	TUV 1×4.0mm' (+): 400mm , (-): 200mm or Customized Length

SPECIFICATIONS

Module Type	JKM560N-72HL4-BDV		JKM565N-72HL4-BDV		JKM570N-72HL4-BDV		JKM575N-72HL4-BDV		JKM580N-72HL4-BDV	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	560Wp	421Wp	565Wp	425Wp	570Wp	429Wp	575Wp	432Wp	580Wp	436Wp
Maximum Power Voltage (Vmp)	41.95V	39.39V	42.14V	39.52V	42.29V	39.65V	42.44V	39.78V	42.59V	39.87V
Maximum Power Current (Imp)	13.35A	10.69A	13.41A	10.75A	13.48A	10.81A	13.55A	10.87A	13.62A	10.94A
Open-circuit Voltage (Voc)	50.67V	48.13V	50.87V	48.32V	51.07V	48.51V	51.27V	48.70V	51.47V	48.89V
Short-circuit Current (Isc)	14.13A	11.41A	14.19A	11.46A	14.25A	11.50A	14.31A	11.55A	14.37A	11.60A
Module Efficiency STC (%)	21.68%		21.87%		22.07%		22.26%		22.45%	
Operating Temperature(°C)	-40°C~+85°C									
Maximum system voltage	1500VDC (IEC)									
Maximum series fuse rating	30A									
Power tolerance	0~+3%									
Temperature coefficients of Pmax	-0.30%/°C									
Temperature coefficients of Voc	-0.25%/°C									
Temperature coefficients of Isc	0.046%/°C									
Nominal operating cell temperature (NOCT)	45±2°C									
Refer. Bifacial Factor	80±5%									

BIFACIAL OUTPUT-REAR SIDE POWER GAIN

5%	Maximum Power (Pmax)	588Wp	593Wp	599Wp	604Wp	609Wp
	Module Efficiency STC (%)	22.76%	22.97%	23.17%	23.37%	23.57%
15%	Maximum Power (Pmax)	644Wp	650Wp	656Wp	661Wp	667Wp
	Module Efficiency STC (%)	24.93%	25.15%	25.37%	25.60%	25.82%
25%	Maximum Power (Pmax)	700Wp	706Wp	713Wp	719Wp	725Wp
	Module Efficiency STC (%)	27.10%	27.34%	27.58%	27.82%	28.07%

*STC: Irradiance 1000W/m²

Cell Temperature 25°C

AM=1.5

NOCT: Irradiance 800W/m²

Ambient Temperature 20°C

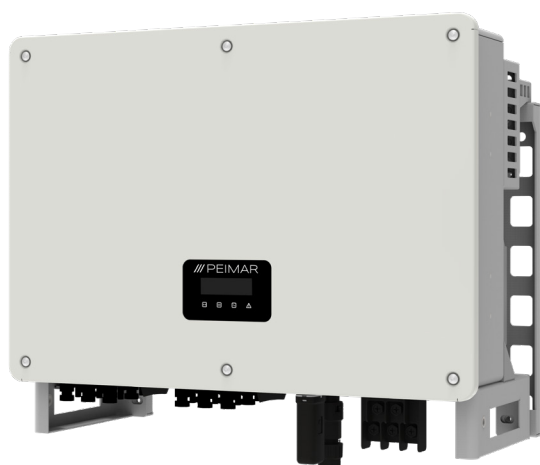
AM=1.5

Wind Speed 1m/s

PSI-X3P40000-TPM | PSI-X3P50000-TPM

PSI-X3P60000-TPM

SERIE PSI-X3P | INVERTER DI RETE TRIFASE



- ✓ DOTATO DI **DISPLAY**
Per una messa in funzione veloce e un controllo diretto
- ✓ **PEIMAR X PORTAL** PER IL MONITORAGGIO
Lettura dei dati e programmazione da remoto
- ✓ SCARICATORI **TIPO II** (CC e CA)
- ✓ 4 | 6 MPPT
- ✓ IP66

Ingresso CC	PSI-X3P40000-TPM	PSI-X3P50000-TPM	PSI-X3P60000-TPM
Potenza massima CC	60000 W (max 16 kW per ogni MPPT)	75000 W (max 16 kW per ogni MPPT)	90000 W (max 15 kW per ogni MPPT)
Tensione massima CC	1100 V		
Range di tensione MPPT	180 - 1000 V		
Tensione nominale CC	600 V		
Tensione di avvio	200 V		
Tensione minima CC	180 V		
Corrente di ingresso massima CC per ogni MPPT	32 A		
Corrente massima di cortocircuito per ogni MPPT	46 A		
Numero di ingressi CC per ogni MPPT	2		
Numero di MPPT	4	5	6
Sezionatore CC (DC-PV2)	Integrato		

Uscita CA	PSI-X3P40000-TPM	PSI-X3P50000-TPM	PSI-X3P60000-TPM
Potenza nominale CA	40000 W	50000 W	60000 W
Potenza massima CA	44000 VA	55000 VA	66000 VA
Corrente nominale CA	60.6 A a 380 V / 58 A a 400 V	75.8 A a 380 V / 72.5 A a 400 V	90.9 A a 380 V / 87 A a 400 V
Corrente massima CA	66.7 A a 380 V / 63.8 A a 400 V	83.3 A a 380 V / 79.7 A a 400 V	100 A a 380 V / 95.7 A a 400 V
Tensione nominale CA / Range	220/380 V, 230/400 V		
Frequenza di rete / Range	50, 60 Hz		
Fattore di potenza [cos φ]	0.8 capacitiva - 0.8 induttiva		
THDi, potenza nominale	< 3 %		
Connessione	Trifase 3L + N + PE / 3L + PE		

Rendimento

Rendimento massimo	98.4%
Rendimento europeo	98.1%
Precisione MPPT	99.9 %

Informazioni Generali

Topologia	Senza trasformatore		
Consumo notturno	< 2 W		
Range di temperatura in funzionamento	Da -25°C a +60°C (derating da +45°C)		
Metodo di raffreddamento	Ventilazione regolata e convezione naturale		
Umidità ambientale	Da 0 a 100% senza condensa		
Altitudine	Fino a 4000 m (derating da 3000 m)		
Rumore	< 67 dB		< 68 dB
Temperatura di stoccaggio	Da -30°C a +65°C		
Categoria di sovratensione	II (ingresso CC), III (uscita CA)		
Grado di protezione	IP66		
Montaggio	Staffa di fissaggio a parete		
Dimensioni (H x L x P)	521 x 630 x 286 mm		
Peso netto	44 kg	44.5 kg	45.5 kg
Garanzia	5 anni		

Interfaccia

Connessione CA	Morsettiera		
Connessione CC	MC4 o connettori compatibili		
LCD	Display LCD retroilluminato		
LED	LED (4 Luci)		
Lingua di visualizzazione	Italiano / Inglese		
Porte di comunicazione	Dongle (porta USB per modulo Wi-Fi/Ethernet) / COM (connettore COMM per comunicazione esterna)		
Modalità di comunicazione	Wi-Fi (modulo PSI-X-H-WIFI-3.0 opzionale) / LAN (modulo PSI-X-H-ETH-3.0 incluso)		

Protezione

Protezione da sovra/sottotensione interna	Integrato
Protezione di isolamento CC	Integrato
Monitoraggio della rete elettrica	Integrato
Monitoraggio DCI	Integrato
Protezione da corrente residua	Integrato
Monitoraggio della corrente di stringa	Integrato
Protezione anti-isola	Integrato
Protezione termica	Integrato
Protezione da sovracorrente	Integrato
Protezione da sovratensione SPD	Tipo 2 integrato (lato CA e CC)

Certificati

Per un elenco completo dei certificati, fare riferimento al sito www.peimar.com