Fecha de Emisión	Página
17-jul-2025	1 de 1

Cliente:	
CAEM	
Nit: Teléfono: Ciudad: E-mail:	Villavicencio

COTIZACIÓN	
Fecha de Elaboración	Cotización No.
17-jul-2025	LM 10167 170725

Descripción	Cantidad	Valor unitario	IVA	Valor total
Panel solar 620w marca Trina	1	$ 404.300	0%	$ 404.300
Conector MC4	1	$ 6.550	19%	$ 6.550
Cable fotovoltaico 4mm	20	$ 5.160	19%	$ 103.200
Controlador solar MPPT 40A 75w	1	$ 585.000	0%	$ 585.000
Cable #6 AWG NR	3	$ 12.563	19%	$ 37.689
Terminal ojo industrial	2	$ 1.420	19%	$ 2.840
Inversor onda pura 1000w 12v	1	$ 1.274.000	0%	$ 1.274.000
Batería 12v 150Ah gel	1	$ 1.066.000	19%	$ 1.066.000
Caja plástica de tacos riel X 4P S/P	1	$ 39.328	19%	$ 39.328
DPS 2P 40KA 600VDC	1	$ 165.100	19%	$ 165.100
Taco breaker YRL7-63 DC 550V 2P 20A YRO	1	$ 87.395	19%	$ 87.395
Varilla copperweld 1.50	1	$ 152.941	19%	$ 152.941
Alambre de cobre #10 x mt 7 hilos	5	$ 5.462	19%	$ 27.310
Riel	1	$ 110.250	19%	$ 110.250
Soporte L	4	$ 7.800	19%	$ 31.200
End clamp	4	$ 6.500	19%	$ 26.000

Subtotal	**$ 4.119.103**
IVA	**$ 352.603**
Retefuente	**$ 102.978**
Total	**$ 4.368.728**

SON: Cuatro millones trescientos sesenta y ocho mil setecientos veintiocho pesos m/cte

Elaboró	Teléfono	E-mail
Claudia Morales	3133414902	lmenergiasolar@gmail.com

NOTAS:

Tiempo de entrega: 5 días hábiles

Lugar de entrega: Villavicencio

No incluye instalación, accesorios, ni materiales no especificados en esta cotización

Validez de la propuesta: 7 días

Forma de pago: 100% anticipado

garantía de 1 año en defectos de fábrica

Durable Battery Choose CSBattery

High Temperature Deep Cycle GEL Battery HTB12-150

The HTB deep cycle gel battery adopts the advanced developed nano gel electrolyte with super-C additive plus heavy duty plates design inside. It has a longer service life even deep cycle discharge use and can provide optimum and reliable service under extreme condition such as high temperature and frequent power failure, thus it is highly suited for tropical area in outdoor applications such as Telecom BTS stations and Off-grid PV system.

12V Voltage | 150Ah Capacity | Gel Technology | Deep Cycle



GENERAL FEATURES

- Able to operate at 40-60°C
- Integrated design to ensure the best uniformity and reliability
- Longer life and higher stability under high temp. environment (no air-con needed)
- Super-C additives: Deep discharge recovery capability, 1600cycles @50%DOD

APPLICATIONS

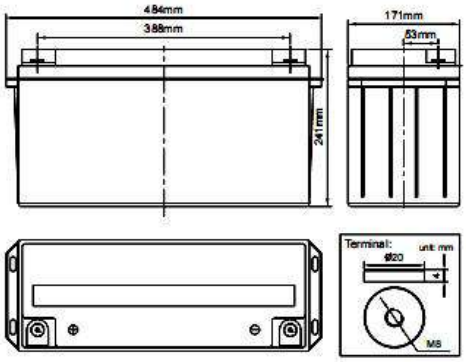
- BTS Stations
- Solar & Wind energy system
- UPS system
- Telecom systems
- Wheel chair, Golf cart

COMPLIED STANDARDS

IEC 60896-21/22 JIS C8704
IEC61427 BS6290 part4
GB/T 19638 CE/ISO

DIMENSIONS & WEIGHT

Length(mm)	484±1
Width(mm)	171±1
Height(mm)	241±1
Total Height(mm)	241±1
Weight(kg)	45.7±3%



TECHNICAL SPECIFICATIONS

Nominal Voltage		12V (6 cells per unit)
Design Floating Life @25℃		20 Years
Nominal Capacity @25℃(20 hour rate@7.5A,10.8V)		150Ah
Capacity @25℃	10hour rate (13.5A,10.8V)	135Ah
	5 hour rate (23.9A,10.5V)	119.5Ah
	1 hour rate (86.6A,9.6V)	86.6Ah
Internal Resistance	Full Charged Battery@25℃	≤4.0mΩ
Ambient Temperature	Discharge	-25℃~60℃
	Charge	-25℃~60℃
	Storage	-25℃~60℃
Max.Discharge Current@25℃		800A(5s)
Capacity affected by Temperature (10 hour)	40℃	108%
	25℃	100%
	0℃	90%
	-15℃	70%
Self-Discharge@25℃ per Month		3%
Charge (Constant Voltage) @25℃	Standby Use	Initial Charging Current Less than 33.75A Voltage 13.6-13.8V
	Cycle Use	Initial Charging Current Less than 33.75A Voltage 14.4-14.9V

BATTERY DISCHARGE TABEL

Discharge Constant Current per Cell (Amperes at 25°C)

F.V/Time	15min	30min	45min	1h	2h	3h	5h	8h	10h	20h	100h
1.60V	234.3	139.4	99.0	86.6	52.9	37.1	25.2	16.7	14.9	8.10	1.80
1.65V	230.0	136.9	97.2	85.1	51.9	36.5	24.8	16.4	14.6	7.95	1.76
1.70V	225.8	134.4	95.4	83.5	51.0	35.8	24.3	16.1	14.3	7.80	1.73
1.75V	221.5	131.8	93.6	81.9	50.0	35.1	23.9	15.8	14.0	7.65	1.70
1.80V	213.0	126.8	90.0	78.8	48.1	33.8	23.0	15.2	13.5	7.50	1.67

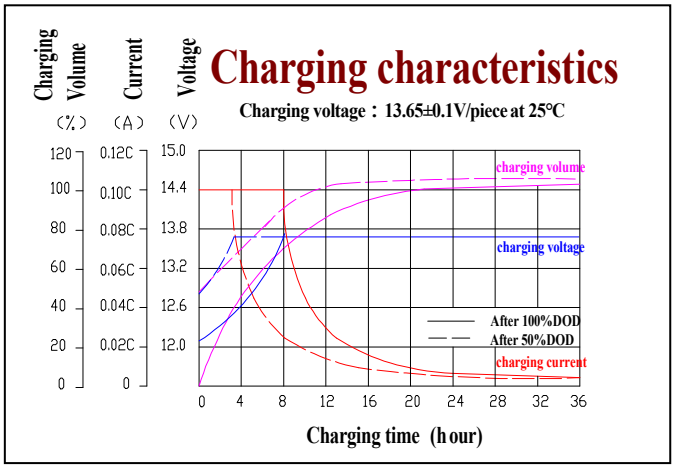
Discharge Constant Power per Cell (Watts at 25°C)

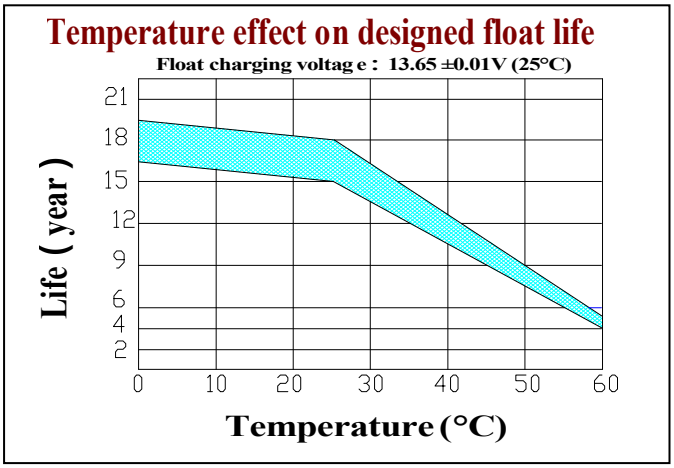
F.V/Time	15min	30min	45min	1h	2h	3h	5h	8h	10h	20h	100h
1.60V	451.0	268.4	190.6	166.8	101.8	71.5	48.6	32.1	28.6	15.6	3.46
1.65V	442.8	263.5	187.1	163.7	99.9	70.2	47.7	31.5	28.1	15.3	3.40
1.70V	434.6	258.6	183.6	160.7	98.1	68.9	46.8	30.9	27.5	15.0	3.33
1.75V	426.4	253.8	180.2	157.7	96.2	67.6	45.9	30.3	27.0	14.7	3.27
1.80V	410.0	244.0	173.3	151.6	92.5	65.0	44.2	29.2	26.0	14.4	3.21

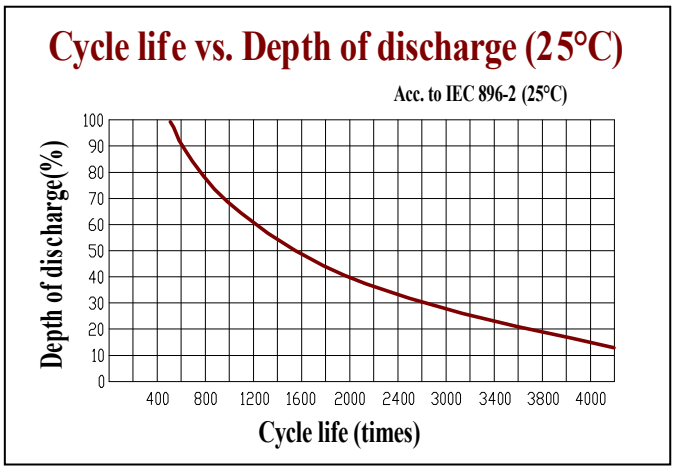
Note The above data are average values, and can be obtained within 3 charge/discharge cycles. These are not minimum values. Cell and battery designs/specifications are subject to modification without notice.

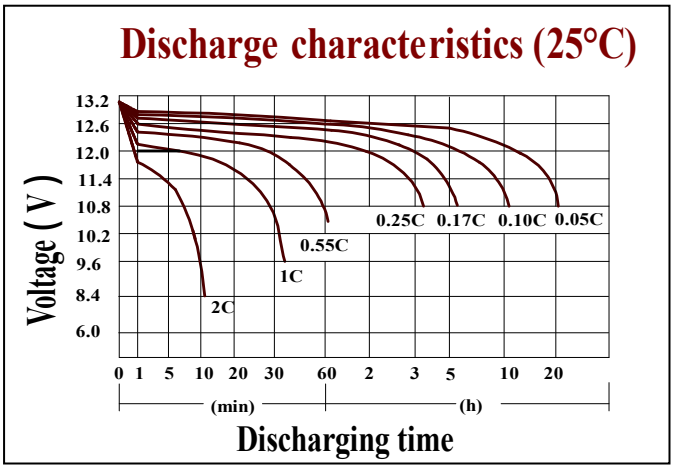
High Temperature Deep Cycle GEL Battery HTB12-150

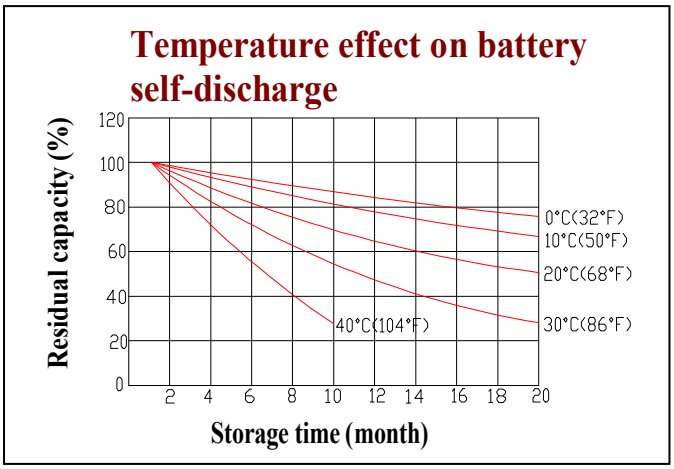
PERFORMANCE CHARACTERISTICS

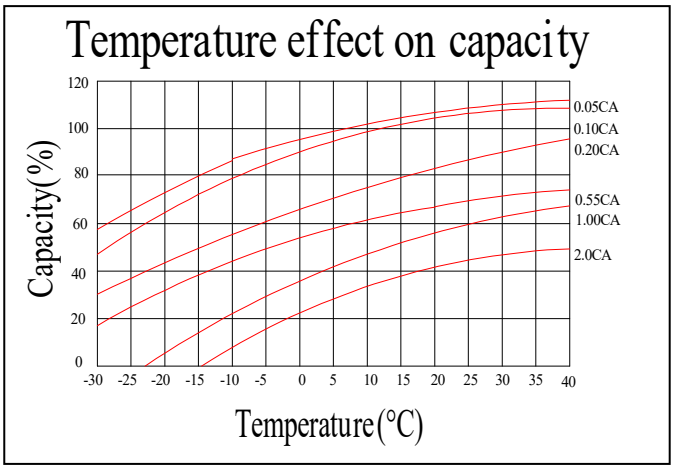












BATTERY CONSTRUCTION

Component	Positive plate	Negative plate	Container &Cover	Safety valve	Terminal	Separator	Electrolyte	Pillar seal
Features	Thick high Sn low Ca grid with special paste	Balanced Pb-Ca grid for improved recombination efficiency	Fire resistance ABS (UL94-V0 optional)	Flame Si-Rubber and aging resistance	Female Copper Insert M8	Advanced PVC /AGM separator for high pressure cell design	Silicon Gel import from Germany	Two layers epoxy resin seal

EPEVER
EPSOLAR TECHNOLOGY

IPower series
Pure Sine Wave Inverter

Overview

IPower series is a kind of pure sine wave inverter which can convert. 12/24/48VDC to 220/230VAC(or 110/120VAC). Industrial design, compared with the civil design, has a wider operating temperature, easy installation and operation. The wide input voltage range is ideal for solar system application. The inverter can be applied in many fields, such as household emergency lighting system, vehicle mounted system and small field power supply etc.





Features

- Safe design with input and output electrical isolation
- Adoption of advanced SPWM technology, pure sine wave output
- Optional output voltage 220/230VAC(or 110/120VAC), choosing by DIP switch
- LED indicators for fault status and working status
- Lower No-load consumption
- Max. efficiency up to 95%(IP2000-22, IP2000-42)①
- Input protection: Over voltage protection, low voltage protection
- Output protection: Over load protection, short circuit protection
- Over temperature protection: Temperature-controlled Fan Ventilation; Inverter turns off automatically when overheating
- Operational USB output 5VDC/1A
- Operational RS485 communication port②

The efficiency is tested at rated input voltage,220V output with resistive load, 25 Ambient temperature,1500W and higher version
1000W and higher version support RS485 communication port optional.



Technical Specifications

Model	IP350-12	IP350-22	IP350-11	IP350-21	IP500-12	IP500-22	IP500-11	IP500-21
Technical Specification								
Rated Input Voltage	12VDC	24VDC	12VDC	24VDC	12VDC	24VDC	12VDC	24VDC
Input Voltage Range	10.8 ~ 16VDC	21.6 ~ 32VDC	10.8 ~ 16VDC	21.6 ~ 32VDC	10.8 ~ 16VDC	21.6 ~ 32VDC	10.8 ~ 16VDC	21.6 ~ 32VDC
Input surge voltage	< 32VDC	< 44VDC	< 32VDC	< 44VDC	< 32VDC	< 44VDC	< 32VDC	< 44VDC
Output Voltage	220VAC (± 5%) 230VAC (-7% ~ + 5%)		110VAC (± 5%) 20VAC (-10% ~ + 5%)		220VAC (± 5%) 230VAC (-10% ~ + 5%)		110VAC (± 5%) 120VAC (-10% ~ + 5%)	
Output Frequency	50/60±0.1Hz							
Output Continuous Power	280W				400W			
Output Power 15 min.	350W				500W			
Surge power	750W				1000W			
Power factor	0.2-1(VA lower than output continuous power)							
Output Wave	Pure sine wave							
Distortion THD	THD≤3%①		THD≤5%①		THD≤3%①		THD≤5%①	
Max. Efficiency	91%	92%	90%	91%	92%		91%	
No-load current	<0.7A	<0.5A	<0.7A	<0.5A	<0.9A	<0.5A	<0.9A	<0.5A
USB Output Port②	5VDC/Max.1A							
Binding post	Φ6mm				Φ6mm			
Overall dimension	214 × 105.5 × 57.7mm				232.2 × 132 × 74.5mm			
Mounting dimension	185.5 × 76.7mm				205 × 102 mm			
Mounting hole size	Φ4.2mm				Φ5.2mm			
Net weight	1.0kg				1.7 kg			

Model	IP1000-12	IP1000-22	IP1000-11	IP1000-21	IP1500-12	IP1500-22	IP1500-11	IP1500-21
Technical Specification								
Rated Input Voltage	12VDC	24VDC	12VDC	24VDC	12VDC	24VDC	12VDC	24VDC
Input Voltage Range	10.8 ~ 16VDC	21.6 ~ 32VDC	10.8 ~ 16VDC	21.6 ~ 32VDC	10.8 ~ 16VDC	21.6 ~ 32VDC	10.8 ~ 16VDC	21.6 ~ 32VDC
Input Surge Voltage	<20VDC	<40VDC	<20VDC	<44VDC	<20VDC	<40VDC	<20VDC	<40VDC
Output Voltage	220VAC / 230VAC (± 5%)		110VAC / 120VAC (± 3%)		220VAC (± 5%) 230VAC (-7% ~ + 5%)		110VAC (± 3%) 120VAC (-7% ~ + 3%)	
Output Frequency	50/60±0.1Hz							
Output Continuous Power	800W				1200W			
Output Power 15 min.	1000W				1500W			
Surge power	1600W				2400W			
Power factor	0.2-1(VA lower than output continuous power)							
Output Wave	Pure sine wave							
Distortion THD	THD≤3%①		THD≤5%①		THD≤3%①		THD≤5%①	
Max. Efficiency	94.5%		92.5%		93%	94%	93%	94%
No-load Current	<0.8A	<0.5A	<0.8A	<0.5A	<1.0A	<0.6A	<1.0A	<0.6A
USB Output Port②	5VDC/Max.1A							
RS485 Com. Port②	5VDC / 200mA							
Binding Post	Φ10mm							
Overall Dimension (mm)	298.3 × 231.5 × 98.5	284.7 × 231.5 × 98.5	298.3 × 231.5 × 98.5	284.7 × 231.5 × 98.5	326,12×231.5 ×98.5	284.7×231.5 ×98.5	326,12×231.5 ×98.5	284.7×231.5 ×98.5
Mounting Dimension	183 × 220 mm	163 × 219.5mm	183 × 220 mm	163 × 219.5mm	208 × 220 mm	163 × 219.5mm	208 × 220 mm	163 × 219.5mm
Mounting Hole Size	Φ5.5mm							
Net Weight	3.9 kg	3.6 kg	3.9 kg	3.6 kg	4.6 kg	3.9 kg	4.6 kg	3.9 kg

Environmental Parameters

Working Temperature	-20 ℃ ~ + 45 ℃
Storage Temperature	-35 ℃ ~ + 70 ℃
Humidity	<95% (NC)
Enclosure	IP20
Altitude	< 5000 m (Derating to operate according to IEC62040 at a height exceeding 1000m)

Model	IP2000-22	IP2000-42	IP2000-21	IP2000-41
Technical Specification				
Rated Input Voltage	24VDC	48VDC	24VDC	48VDC
Input Voltage Range	21.6 ~ 32VDC	43.2 ~ 60 VDC	21.6 ~ 32VDC	43.2 ~ 60 VDC
Input Surge Voltage	<40VDC	<80VDC	<40VDC	<80VDC
Output Voltage	220VAC (± 5%) 230VAC (-10% ~ + 5%)		110VAC (± 5%) 120VAC (-10% ~ + 5%)	
Output Frequency	50/60±0.1Hz			
Output Continuous Power	1600W			
Output Power 15 min.	2000W			
Surge power	3200W			
Power factor	0.2-1(VA lower than output continuous power)			
Output Wave	Pure sine wave			
Distortion THD	THD≤3%①		THD≤5%①	
Max. Efficiency	95%		94%	
No-load Current	<0.6A	<0.4A	<0.6A	<0.4A
USB Output Port②	5VDC/Max.1A			
RS485 Com. Port②	5VDC / 200mA			
Binding Post	Φ10mm			
Overall Dimension	326.12 × 231.5 × 98.5mm			
Mounting Dimension	208 × 219.5mm			
Mounting Hole Size	Φ5.5mm			
Net Weight	4.6 kg			

①Test condition: Rated Input Voltage, Output Continuous Power, Resistive load.
②Conventional products don't have this port; the port is optional.

Others

Dielectric Strength	Between DC input terminals and metal case: Test voltage AC500V, 1 minute Between AC output terminals and metal case: Test voltage AC1500V, 1 minute

No.103, Dongxing Rd, Chenjiang Street, Zhongkai High-tech Zone, Huizhou, China
+86-752-3889706 www.epever.com info@epsolarpv.com

XTRA-N G3 / XTRA-N G3 BLE

Mppt Solar Charge Controller

Overview

The XTRA-N G3 series is a new generation of MPPT solar charge and discharge controllers with an integrated Bluetooth module*. Users can easily read or modify settings parameters through the EPEVER APP. It boasts rapid tracking speed and response for high-power points, ensuring maximal utilization of solar energy. The device features an adaptive three-stage charging mode and a stable function for lithium battery activation, which safeguards battery charging and enhances the overall system performance and lifespan. It also offers a constant voltage output function, which allows the PV to directly supply power to the load in sunlight without a battery, significantly broadening the system's applications. With an IP33 protection and a low self-consumption, along with optimized EMC and comprehensive protection functions, it is suitable for various fields including RVs, residential systems, and field monitoring, meeting a variety of needs.

* Only XTRA-N G3 BLE series has built-in Bluetooth module

Features

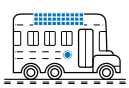
- Constant voltage output
- Rated Charging Power & Current Limitation
- Certain models support Bluetooth for parameter reading and modification via app
- Operates at full load within the working temperature range
- Innovative MPPT technology & ultra-fast tracking speed
- Tracking efficiency is no less than 99.5%
- Compatible with various types of batteries: lithium, gel, sealed, etc
- Wide MPPT voltage range, maximizes the utilization of PV modules
- Automatic temperature compensation for lead-acid batteries and stable self-activation for lithium batteries
- RS485 communication interface with optional 4G or Wi-Fi modules for remote monitoring
- Low self-consumption, lower than 10mA
- IP33 enclosure, Comprehensive electronic protections

Product Certification









Solar Car



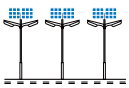
Solar Home



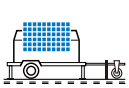
Solar Backpack



Solar Boat



Solar Street Light



Solar Power Generator

Technical Specifications

Item	XTRA1206N G3/G3 BLE	XTRA2206N G3/G3 BLE	XTRA1210N G3/G3 BLE	XTRA2210N G3/G3 BLE	XTRA3210N G3/G3 BLE	XTRA4210N G3/G3 BLE	XTRA3215N G3/G3 BLE	XTRA4215N G3/G3 BLE	XTRA3415N G3/G3 BLE	XTRA4415N G3/G3 BLE
Electrical Parameters										
Battery Rated Voltage	12/24VDC★ Auto								12/24/36/48VDC★Auto	
Rated Charging Current	10A	20A	10A	20A	30A	40A	30A	40A	30A	40A
Rated Discharging Current	10A	20A	10A	20A	30A	40A	30A	40A	30A	40A
Controller Work Voltage Range	8～31V								8～62V	
PV Maximum Open-circuit Voltage	60V(At minimum operating environment temperature) 46V(At 25°C environment		100V(At minimum operating environment temperature) 92V(At 25°C environment temperature)				150V(At minimum operating environment temperature) 138V(At 25°C environment temperature)			
MPPT Voltage Range	temperature) (Battery voltage+2V)～36V		(Battery voltage+2V)～72V				(Battery voltage+2V)～108V			
Rated Charging Power	130W/12V 260W/24V	260W/12V 520W/24V	130W/12V 260W/24V	260W/12V 520W/24V	390W/12V 780W/24V	520W/12V 1040W/24V	390W/12V 780W/24V	520W/12V 1040W/24V	390W/12V 780W/24V 1170W/36V 1560W/48V	520W/12V 1040W/24V 1560W/36V 2080W/48V
Maximum Conversion Efficiency	97.90%	98.30%	98.20%	98.30%	98.60%	98.60%	97.60%	97.90%	98.10%	98.50%
Maximum Load Efficiency	97.00%	96.70%	96.20%	96.40%	96.60%	96.50%	95.10%	95.40%	96.90%	97.20%
Static Losses (Enable the com. port)	⩽10mA(12V) ⩽7mA(24V)	⩽10mA(12V) ⩽7mA(24V)	⩽15mA(12V) ⩽9mA(24V)	⩽15mA(12V) ⩽9mA(24V)	⩽15mA(12V) ⩽9mA(24V)	⩽15mA(12V) ⩽9mA(24V)	⩽15mA(12V) ⩽9mA(24V)	⩽15mA(12V) ⩽9mA(24V)	⩽14mA(12V) ⩽9mA(24V) ⩽8mA(36V) ⩽7mA(48V)	⩽14mA(12V) ⩽9mA(24V) ⩽8mA(36V) ⩽7mA(48V)
Static Losses (Disable the com. port)	⩽8mA(12V) ⩽5mA(24V)	⩽8mA(12V) ⩽5mA(24V)	⩽8mA(12V) ⩽6mA(24V)	⩽8mA(12V) ⩽6mA(24V)	⩽8mA(12V) ⩽5mA(24V)	⩽8mA(12V) ⩽5mA(24V)	⩽8mA(12V) ⩽5mA(24V)	⩽8mA(12V) ⩽5mA(24V)	⩽8mA(12V) ⩽5mA(24V) ⩽5mA(36V) ⩽5mA(48V)	⩽8mA(12V) ⩽5mA(24V) ⩽5mA(36V) ⩽5mA(48V)
Discharge-circuit Voltage Drop	⩽0.23V									
Temperature Compensation	-3mV/°C/2V（Default）									
Grounding Type	Common negative									
RS485 Port	5VDC/200mA(RJ45)									
LCD Backlight Time	Default: 60S, Range: 0~999S(0S: the backlight is ON all the time)									
Mechanical Parameters										
Dimension (L x W x H)	175×143×48 mm	217×158×56.5 mm	175×143×48 mm	217×158×56.5 mm	230×165×63 mm	255×185×67.8 mm	255×185×67.8 mm	255×187×75.7 mm	255×187×75.7 mm	255×189×83.2 mm
Mounting Size (L x W)	120×134mm	160×149mm	120×134mm	160×149mm	173×156mm	200×176mm	200×176mm	200×178mm	200×178mm	200×180mm
Mounting Hole Size	Φ5mm									
Terminal	12AWG($4mm^2$)	6AWG($16mm^2$)	12AWG($4mm^2$)	6AWG($16mm^2$)	6AWG($16mm^2$)	6AWG($16mm^2$)	6AWG($16mm^2$)	6AWG($16mm^2$)	6AWG($16mm^2$)	6AWG($16mm^2$)
Recommended Wire Size	12AWG($4mm^2$)	10AWG($6mm^2$)	12AWG($4mm^2$)	10AWG($6mm^2$)	8AWG($10mm^2$)	6AWG($16mm^2$)	8AWG($10mm^2$)	6AWG($16mm^2$)	8AWG($10mm^2$)	6AWG($16mm^2$)
Net Weight	0.58kg	0.97kg	0.59kg	0.97kg	1.30kg	1.72kg	1.66kg	2.08kg	2.16kg	2.60kg
Work Temperature Range	-25°C～+50°C						-25°C～+45°C			
Storage Temperature Range	-20°C～+70°C									
Relative Humidity	⩽95%, N.C.									
Enclosure	IP33 (3-protection against solid objects: protected against solids objects over 2.5mm. 3-protected against sprays to 60°from the vertical.									
Pollution Degree	PD2									

BEIJING EPSOLAR TECHNOLOGY CO., LTD.
+86-10-82894112

HUIZHOU EPEVER TECHNOLOGY CO., LTD.
+86-752-3889706

BEIJING EPSOLAR TECHNOLOGY CO., LTD. SHENZHEN BRANCH
+86-755-89236750

Vertex N

N-type i-TOPCon BACKSHEET MONOCRYSTALLINE MODULE

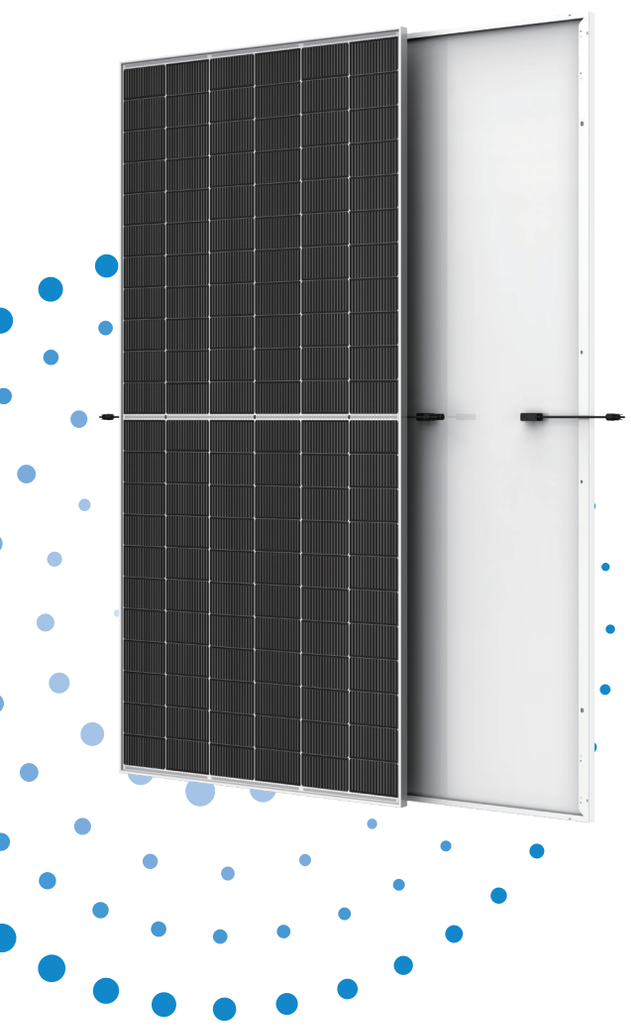
PRODUCT: TSM-NE19R

POWER RANGE: 595-625W

625W
MAXIMUM POWER OUTPUT

0~+5W
POSITIVE POWER TOLERANCE

23.1%
MAXIMUM EFFICIENCY



High customer value

- Standardized module size with flagship module power, 30W higher compared with conventional technology
- Low Voltage design with higher string power, effectively reducing BOS (Balance of System) and LCOE (Levelized Cost of Energy) by 1%~5%
- Suitable for all scenario, especially C&I, residential, and ground applications
- Higher container space utilization effectively reduces the freight cost
- Excellent compatibility with existing mainstream system components

High power up to 625W

- Up to 23.1% module efficiency, on 210 innovative platform
- Patented i-TOPCon technology with continuous efficiency improvement, including contact resistance reduction, rear reflection enhancement and edge quality repairment

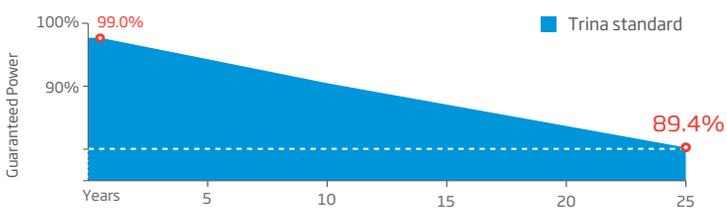
High reliability

- Minimized micro-cracks with innovative non-destructive cutting technology and high-density packaging
- Reduced risks of hot-spot with half-cut technology
- Certified high resistance against salt, ammonia, sand, PID, LID, LeTID
- Sustainable in harsh environments and extreme weather conditions

High energy yield

- Excellent low irradiation performance, validated by 3rd party
- Lower temperature coefficient (-0.29%/°C)

Trina Solar's Backsheet Performance Warranty



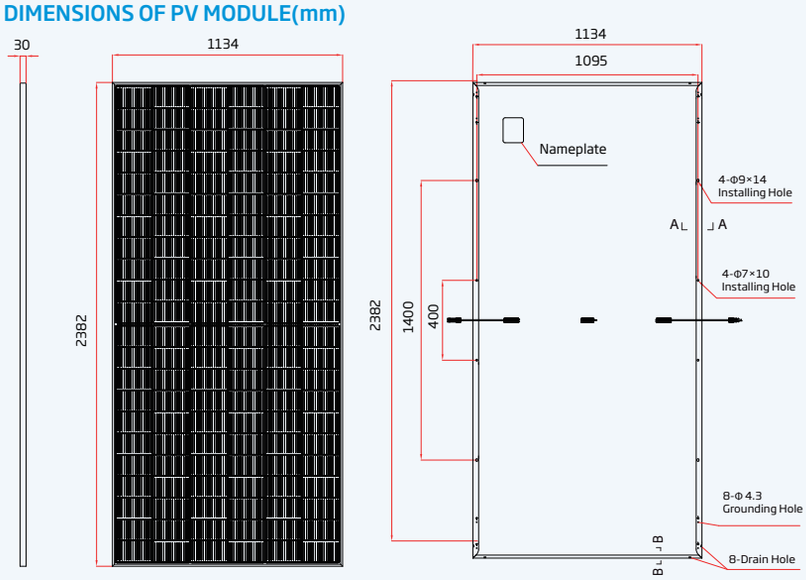
Comprehensive Products and System Certificates

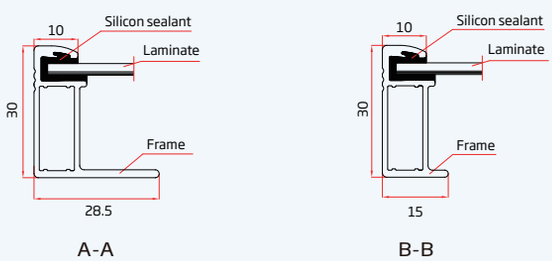
IEC61215/IEC61730/IEC61701/IEC62716/UL61730
ISO 9001: Quality Management System
ISO 14001: Environmental Management System
ISO14064: Greenhouse Gases Emissions Verification
ISO45001: Occupational Health and Safety Management System

Trinasolar

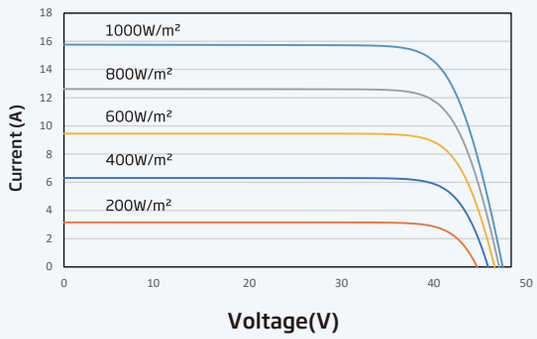
Vertex N-type i-TOPCon backsheet MONOCRYSTALLINE MODULE

DIMENSIONS OF PV MODULE(mm)

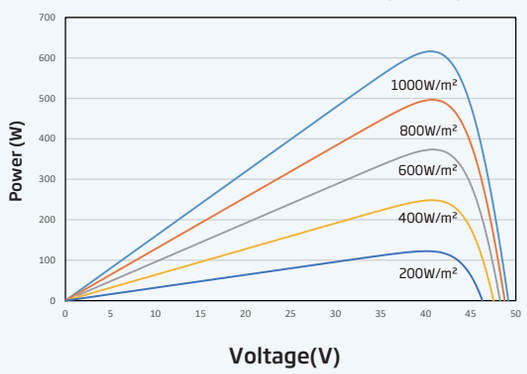




I-V CURVES OF PV MODULE(610W)



P-V CURVES OF PV MODULE(610 W)



ELECTRICAL DATA (STC)

Peak Power Watts-PMAX (Wp)*	595	600	605	610	615	620	625
Power Tolerance-PMAX (W)	0 ~ +5						
Maximum Power Voltage-VMPP (V)	40.0	40.3	40.5	40.8	41.1	41.4	41.6
Maximum Power Current-IMPP (A)	14.89	14.91	14.94	14.96	14.98	14.99	15.00
Open Circuit Voltage-VOC (V)	48.1	48.4	48.7	49.0	49.3	49.6	49.8
Short Circuit Current-ISC (A)	15.76	15.80	15.83	15.86	15.89	15.91	15.93
Module Efficiency η m (%)	22.0	22.2	22.4	22.6	22.8	23.0	23.1

ELECTRICAL DATA (NOCT)

Maximum Power-PMAX (Wp)	454	459	462	466	470	474	477
Maximum Power Voltage-VMPP (V)	37.6	37.9	38.1	38.3	38.6	38.8	39.0
Maximum Power Current-IMPP (A)	12.07	12.11	12.13	12.16	12.19	12.20	12.21
Open Circuit Voltage-VOC (V)	45.7	46.0	46.2	46.5	46.8	47.1	47.3
Short Circuit Current-ISC (A)	12.69	12.73	12.75	12.78	12.80	12.82	12.84

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

MECHANICAL DATA

Solar Cells	N-type i-TOPCon Monocrystalline
No. of cells	132 cells
Module Dimensions	2382×1134×30 mm (93.78×44.65×1.18 inches)
Weight	27.9kg (61.51 lb)
Glass	3.2 mm (0.13 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	POE/EVA
Backsheet	White
Frame	30mm(1.18 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm² (0.006 inches²) Portrait: 350/280 mm(13.78/11.02 inches) Length can be customized
Connector	MC4 EVO2 / TS4 Plus / TS4*

*Please refer to regional datasheet for specified connector.

TEMPERATURE RATINGS

NOCT(Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of PMAX	- 0.29%/°C
Temperature Coefficient of VOC	- 0.24%/°C
Temperature Coefficient of ISC	0.04%/°C

MAXIMUM RATINGS

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

WARRANTY

12 year Product Workmanship Warranty

25 year Power Warranty

1% first year degradation

0.4% Annual Power Attenuation

(Please refer to product warranty for details)

PACKAGING CONFIGURATION

Modules per box: 36 pieces

Modules per 40' container: 720 pieces

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

© 2024 Trina Solar Co.,Ltd. All rights reserved. Specifications included in this datasheet are subject to change without notice.

Version number: TSM_EN_2024_A

www.trinasolar.com