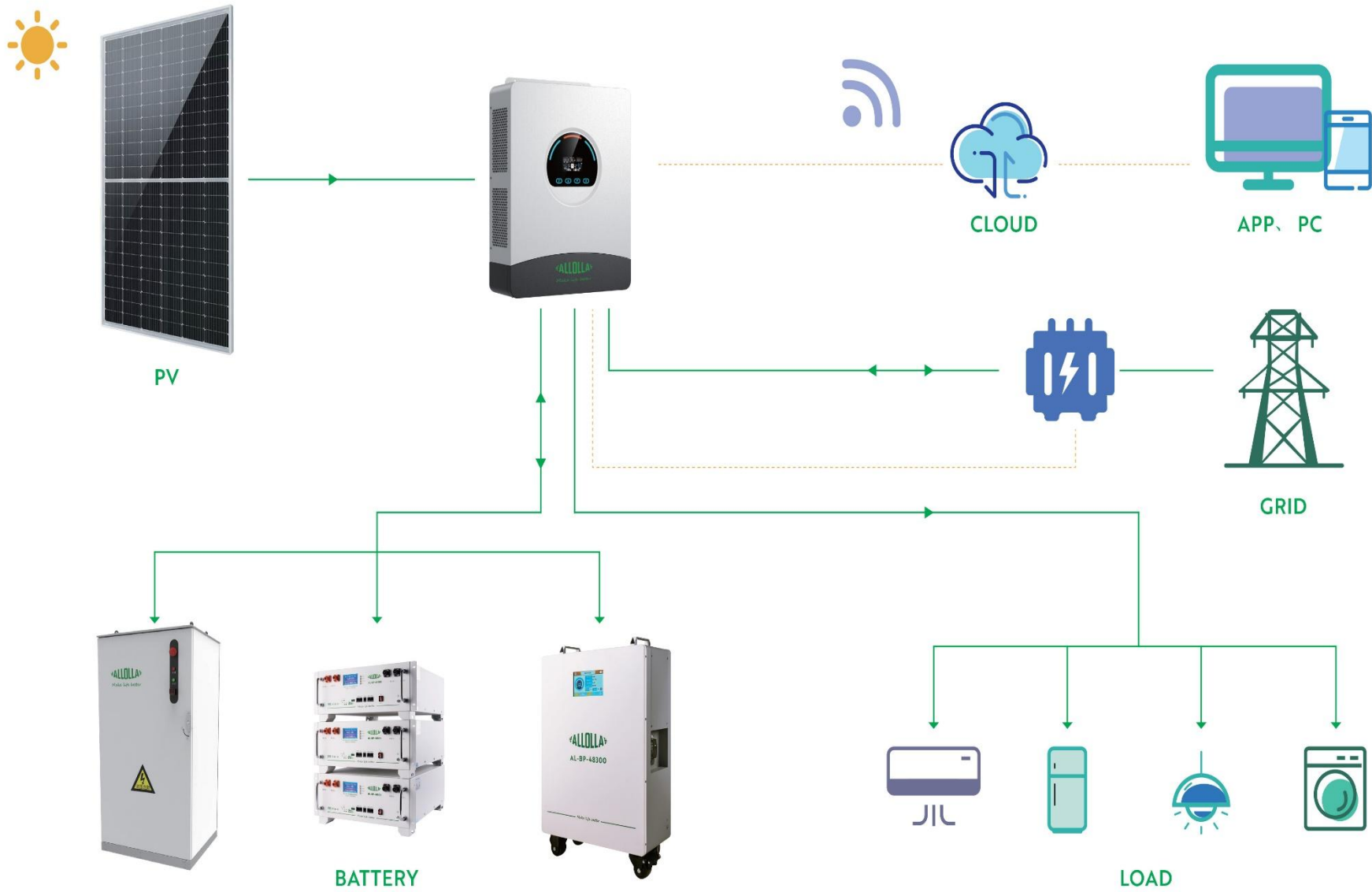




# ALLOLLA ENERGY SOLUTIONS



## INFI Series

# AL-BP-48100S



Grade A  
Most Safety



Long Cycle Life-6000  
Cycles (80%DOD)



Intelligent Battery  
Management System



Quick  
Installation



## SPECIFICATION

Model	AL-BP-48100S
Battery Type	LiFePO4
Rated Energy	5.12KWh
Rated Voltage	51.2V
Range Voltage	43.2V-58.4V
Life Cycles	6000
Suggest Current	50A
Rated Charge/Discharge Current	100A
Max. Charge/Discharge Current	120A (3S)
Charge Temperature	0-50°C
Discharge Temperature	-20-55°C
Storage Temperature	0-45°C
Display	LCD
Operating Humidity (RH)	10%-85%
Max. Elevation	3000m
Protections Grade	IP32
Communication	CAN or RS485
Energy Scalability	30.72KWh
Product Dimensions(W×D×H)mm	490×524×215mm
Carton Dimensions(W×D×H)mm	590×530×278mm
Net Weight	45.88KGS
Gross Weight	48.28KGS
Reference Standards	UL1973
Standards Transportation	UN38.3

## GECO Series

# AL-BP-48100S



Grade A  
Most Safety



Long Cycle Life-6000  
Cycles (80%DOD)



Intelligent Battery  
Management System



Quick  
Installation



## SPECIFICATION

Model	AL-BP-48100S
Battery Type	LiFePO4
Rated Energy	5.12KWh
Rated Voltage	51.2V
Range Voltage	43.2V-58.4V
Life Cycles	6000
Suggest Current	50A
Rated Charge/Discharge Current	100A
Max. Charge/Discharge Current	120A (3S)
Charge Temperature	0-50°C
Discharge Temperature	-20-55°C
Storage Temperature	0-45°C
Display	LCD
Operating Humidity (RH)	10%-85%
Max. Elevation	3000m
Protections Grade	IP32
Communication	CAN or RS485
Energy Scalability	30.72KWh
Product Dimensions(W×D×H)mm	430×148.5×575mm
Carton Dimensions(W×D×H)mm	650×520×248mm
Net Weight	44.2kg
Gross Weight	50kg
Reference Standards	UL1973
Standards Transportation	UN38.3

## GECO Series

# AL-BP-48300W



Most Safety LiFePO<sub>4</sub> as Cathode Material



Long Cycle Life-6000 Cycles (80%DOD)



Intelligent Battery Management System



LFP & Lithium-ion(NCM) Batteries Are Optional Grade A



## SPECIFICATION

Model	AL-BP-48300W
Battery Type	LiFePO <sub>4</sub>
Rated Energy	15KWh
Rated Voltage	51.2V
Range Voltage	43.2V-58.4V
Life Cycles	6000
Suggest Current	100A
Rated Charge/Discharge Current	150A
Max. Charge/Discharge Current	200A (15,25°C)
Charge Temperature	0-50°C
Discharge Temperature	-20-55°C
Storage Temperature	0-45°C
Display	LCD Touch Screen
Operating Humidity (RH)	10%-85%
Max. Elevation	3000m
Protections Grade	IP32
Communication	CAN or RS485
Energy Scalability	120KWh
Product Dimensions(W×D×H)mm	530×235×812.5mm
Carton Dimensions(W×D×H)mm	885×670×425mm
Net Weight	125KGS
Gross Weight	135KGS
Reference Standards	UL1973
Standards Transportation	UN38.3

## Solar Photovoltaic Module

# 580W



Outstanding performance in weak-light conditions



Lower operating temperature



Half-cell and MBB design



Extended wind and snow load tests



Withstanding harsh environment



Use scenario customization



Materials and workmanship warranty



Linear performance warranty

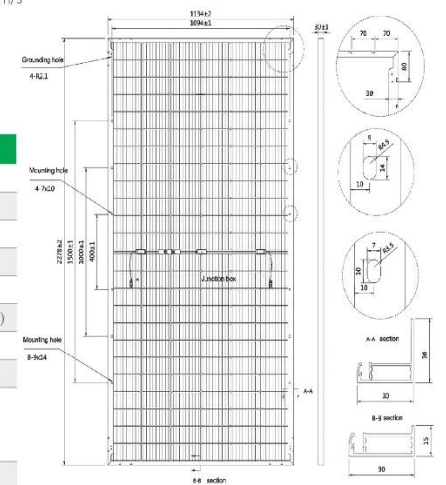


### Electrical characteristics

Model	AL560M10NHB-144		AL565M10NHB-144		AL570M10NHB-144		AL575M10NHB-144		AL580M10NHB-144	
Working Conditions	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Max. Power at STC/NMOT (Pmax)	W	560	418.9	565	422.6	570	426.4	575	430.1	580
Optimum Operating Voltage (Vmp)	V	43.01	40.00	43.19	40.17	43.34	40.31	43.50	40.46	43.68
Optimum Operating Current (Imp)	A	13.02	10.47	13.08	10.52	13.15	10.58	13.22	10.63	13.28
Open Circuit Voltage (Voc)±3%	V	51.12	47.54	51.31	47.72	51.48	47.88	51.66	48.04	51.84
Short Circuit Current (Isc)±3%	A	13.54	11.15	13.61	11.21	13.68	11.27	13.76	11.33	13.83
Module Efficiency	%	21.7		21.9		22.1		22.3		22.5
Max. System Voltage	V	1500 (DC)								
Max. Series Fuse Rating	A	30								
Operating Module Temperature	°C	-40~+85								

Irradiance 1000W/m<sup>2</sup>, cell temperature 25°C, atmospheric quality AM1.5  
 Irradiance 800W/m<sup>2</sup>, ambient temperature 20°C, AM1.5, wind speed 1m/s

Assembly Drawing(mm)



### Mechanical Characteristics

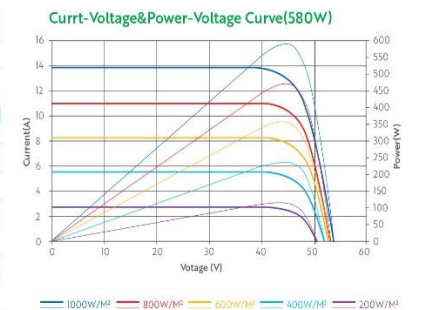
Solar Cell (No.of cells)	(N-Mono)182x182 72 PCS
Dimensions	2278x1134x30 mm
Weight	31.6 kg(±3%)
Front Glass	Low-iron tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68 rated(3 bypass-diodes)
Output Cables	4mm <sup>2</sup> / 2x300mm (Customized length)
Mechanical Load	5400Pa/2400Pa
Safety Rate	Class II (IEC)

### Temperature Characteristics

Temperature Coefficient of Pmax	%/°C	-0.30
Temperature Coefficient of Voc	%/°C	-0.25
Temperature Coefficient of Isc	%/°C	+0.05
Nominal Module Operating	°C	45±2

### Different Backside Power Gain(580W)

Power Gain		5%	15%	25%
Max. Power Pmp	W	598.5	655.5	712.5
Optimum Operating Voltage(Voc)	V	43.34	43.34	43.34
Optimum Operating Current(Imp)	A	13.81	15.12	16.43
Open Circuit Voltage (Voc)	V	51.48	51.48	51.48
Short Circuit Current(Imp)	A	14.37	15.74	17.11



AL-G12NHB/132P

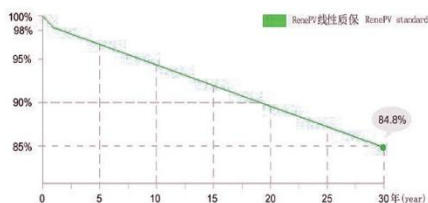
 0~+5W  
680~700W

 N型单晶双面双玻组件  
TOPCon Mono-crystalline Bifacial N


## 产品特性 Key Features

- 优异的弱光性能**  
Outstanding performance in weak-light conditions
- 突出的低温系数**  
Lower operating temperature
- 半片电池和多主栅设计**  
Half-cell and MBB design
- 优异的机械载荷能力**  
Extended wind and snow load tests
- 环境适应性强**  
Withstanding harsh environment
- 使用场景定制化**  
Use scenario customization

## 质量认证 Quality Certification



**12年材料和工艺质保** Materials and workmanship warranty  
**30年线性性能质保** Linear performance warranty

首年功率衰减不超过2% First year power degradation < 2%  
 后续每年功率衰减不超过0.5% Annual degradation < 0.5%

## 产品质保 Product Guarantee

ISO 9001:2015 质量管理体系 Quality management systems  
 ISO 14001:2015 环境管理体系 Environment management systems  
 ISO 45001:2018 职业健康安全管理体系 Occupational health and safety management systems  
 IEC 61215/IEC 61730/IEC 61701/IEC 62716/CE/CQC/INMETRO/BIS/TUV



## 电性能参数 Electrical Characteristics

组件型号 Module Type	AL680G12NHB-132		AL685G12NHB-132		AL690G12NHB-132		AL695G12NHB-132		AL700G12NHB-132		
组件工作条件 Working Conditions	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	
最佳功率 Maximum Power at STC/NMOT (Pmax)	W	680	508.64	685	512.38	690	516.12	695	519.86	700	523.80
最佳工作电压 Optimum Operating Voltage (Vmp)	V	39.97	36.50	40.13	36.65	40.29	36.80	40.45	36.94	40.61	37.09
最佳工作电流 Optimum Operating Current (Imp)	A	17.01	13.93	17.07	13.98	17.13	14.03	17.18	14.07	17.24	14.12
开路电压 Open Circuit Voltage (Voc) ±3%	V	47.88	43.73	48.04	43.88	48.20	44.03	48.37	44.17	48.53	44.32
短路电流 Short Circuit Current (Isc) ±3%	A	17.94	14.69	17.98	14.73	18.02	14.76	18.05	14.78	18.09	14.81
组件发电效率 Module Efficiency	%	21.9		22.1		22.2		22.4		22.5	
组件最大系统电压 Maximum System Voltage	V	1500 (DC)									
最大额定值熔丝电流 Maximum Series Fuse Rating	A	35									
组件工作温度范围 Operating Module Temperature	°C	-40~+85									

STC: 光照1000W/M<sup>2</sup> 组件温度25℃ 大气质量1.5 Irradiance 1000w/m<sup>2</sup>, Cell Temperature 25℃, Atmospheric quality Am1.5  
 NMOT: 光照800W/M<sup>2</sup> 环境温度20℃ 风速1m/s: The irradiance is 800W/m<sup>2</sup>, the ambient temperature is 20 degrees, and the wind speed is 1m/s

## 机械性能 Mechanical Characteristics

电池片类型 Solar Cell (No. of cells)	N型单晶(N-Mono) 210x210 66 PCS
组件尺寸 Dimensions	2384x1303x35 mm
组件重量 Weight	38.4 kg (±3%)
钢化玻璃 Front Glass	2.0mm半钢化玻璃 low-iron tempered glass
边框 Frame	阳极氧化铝合金 anodized aluminum alloy
接线盒 Junction Box	IP68防护(3个二极管) IP68 rated(3bypass-diodes)
光伏线缆 Output Cables	4mm <sup>2</sup> 线长2x350mm或定制化(Customized length)
机械载荷 Connectors	5400Pa / 2400Pa
防火等级 Safety Rate	Class II (IEC)

## 温度特性 Temperature Characteristics

最佳功率 (Pmax) 温度系数 Temperature Coefficient of Pmax	%/°C	-0.35
开路电压 (Voc) 温度系数 Temperature Coefficient of Voc	%/°C	-0.28
短路电流 (Isc) 温度系数 Temperature Coefficient of Isc	%/°C	+0.045
额定电池工作温度(NMOT) Nominal Module Operating Temperature	°C	44±2

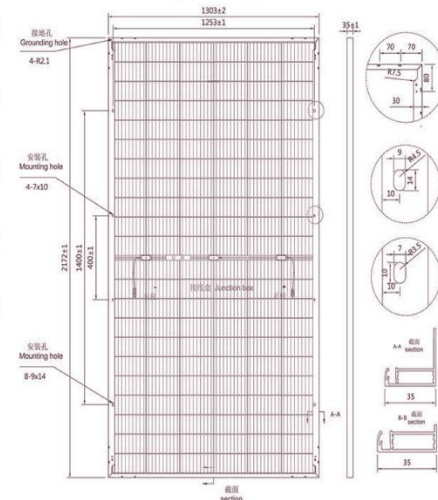
## 不同背面功率增益 Different backside power gain (700W)

功率增益 Power gain	5% 15% 25%			
最大功率 Maximum Power Pmp	W	735	805	875
最佳工作电压 Optimum Operating Voltage(Voc)	V	40.62	40.62	40.62
最佳工作电流 Optimum Operating Current (Imp)	A	18.09	19.82	21.54
开路电压 Open Circuit Voltage (Voc)	V	48.78	48.78	48.78
短路电流 Short Circuit Current (Isc)	A	18.84	20.57	22.29

## 包装标准 Packing Configuration

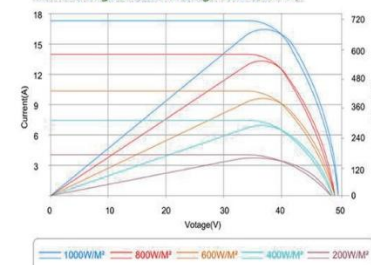
货柜(出口) Container 40' HQ	31PCS/pallet	18pallet/40' HQ	558 PCS/40' HQ
17.5米 装车数量	35边柜	31pcs/托-24托/车	744pcs/车

## 装配图纸 Assembly Drawing (mm)



## 曲线图 (700W)

电流-电压 & 功率-电压曲线图 (700W)  
 Curr-Voltage & Power-Voltage Curve (700W)





# N-type i-TOPCon

BIFACIAL DUAL GLASS MONOCRYSTALLINE MODULE

TSM-NEG21C.20 700-725W

**725W** / MAXIMUM POWER OUTPUT

**23.3%** / MAXIMUM EFFICIENCY



## High customer value

- Standardized module size with flagship module power, 35W 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 2%~6%
- Higher container space utilization effectively reduces the freight cost
- Certified Low-Carbon Footprint
- The Star of LCOE



## High power up to 725W

- Up to 23.3% module efficiency, on 210 innovation platform
- Patented i-TOPCon technology with continuous efficiency improvement, including contact resistance reduction, rear reflection enhancement and edge quality repairment



## High reliability

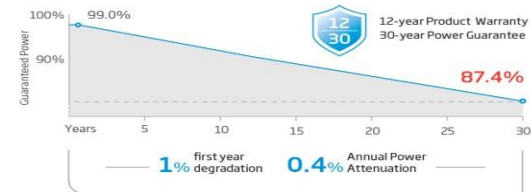
- Minimized micro-cracks with innovative non-destructive cutting technology and high-density packaging
- Reduced risks of hot-spot with half-cut technology
- Certified high resistance against salt, ammonia, sand, PID, LID, LeTID
- Sustainable in harsh environments and extreme weather conditions



## High energy yield

- Excellent low irradiation performance, validated by 3rd party
- Lower temperature coefficient (-0.29%/°C)
- Higher bifaciality, with up to 10%~20% additional power gain from back side depending on albedo
- Reliable dual-glass structure with 30-year power guarantee

## Performance Warranty



\* Please refer to product warranty for details

## Comprehensive Products and System Certificates

IEC61215/IEC61730/IEC61701/IEC62716

ISO 9001: Quality Management System

ISO 14001: Environmental Management System

ISO14064: Greenhouse Gases Emissions Verification

ISO45001: Occupational Health and Safety Management System

ISO14067: Product Carbon Footprint Limited Assurance



**ELECTRICAL DATA (STC)**

Peak Power Watts-P <sub>MAX</sub> (Wp)*	695	700	705	710	715	720
Power Selection (W)**	0 ~ +5					
Maximum Power Voltage-V <sub>MPP</sub> (V)	40.3	40.5	40.7	40.9	41.1	41.3
Maximum Power Current-I <sub>MPP</sub> (A)	17.25	17.29	17.33	17.36	17.40	17.44
Open Circuit Voltage-V <sub>oc</sub> (V)	48.3	48.6	48.8	49.0	49.2	49.4
Short Circuit Current-I <sub>sc</sub> (A)	18.28	18.32	18.36	18.40	18.44	18.48
Module Efficiency $\eta_m$ (%)	22.4	22.5	22.7	22.9	23.0	23.2

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5. \*Measuring tolerance: ±3%. \*\*Power selection up to: +3%.

**ELECTRICAL DATA (NOCT)**

Peak Power Watts-P <sub>MAX</sub> (Wp)	531	534	540	543	547	551
Maximum Power Voltage-V <sub>MPP</sub> (V)	37.9	38.0	38.3	38.5	38.7	38.8
Maximum Power Current-I <sub>MPP</sub> (A)	14.00	14.04	14.08	14.12	14.14	14.18
Open Circuit Voltage-V <sub>oc</sub> (V)	45.9	46.1	46.3	46.5	46.7	46.9
Short Circuit Current-I <sub>sc</sub> (A)	14.72	14.76	14.80	14.83	14.86	14.89

NOCT: Irradiance at 800W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1m/s.

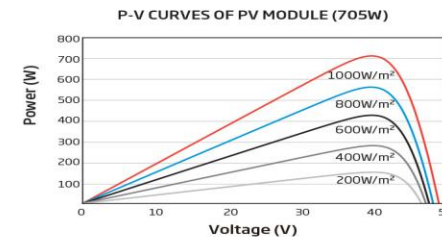
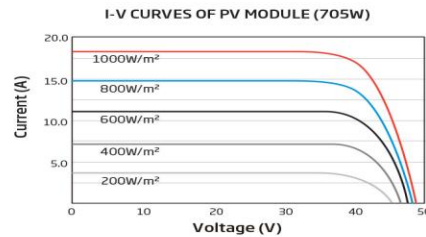
**TEMPERATURE RATINGS**

NOCT(Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of P <sub>MAX</sub>	- 0.29% /°C
Temperature Coefficient of Voc	- 0.24% /°C
Temperature Coefficient of Isc	0.04% /°C

Due to different testing methods, the actual performances might differ from the declared specifications.

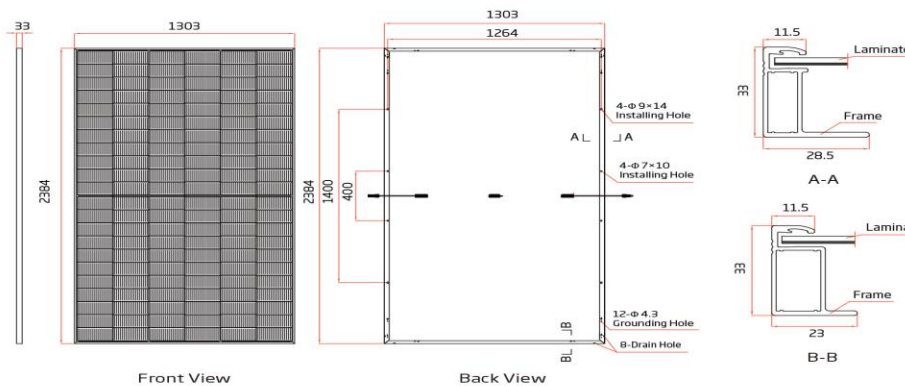
**MAXIMUM RATINGS**

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

**CURVES OF PV MODULE**

**MECHANICAL DATA**

Solar Cells	N-type i-TOPCon Monocrystalline
No. of cells	132 cells
Module Dimensions	2384×1303×33mm (93.86×51.30×1.30 inches)
Weight	32.9 kg (72.5 lb)
Front Glass	3.2mm (0.13inches), AR Coating Tempered Glass
Backsheet	White
Frame	33mm(1.30 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm <sup>2</sup> (0.006 inches <sup>2</sup> ) Portrait: 350/280 mm(13.78/11.02 inches) Length can be customized
Connector	MC4 EVO2 / TS4 Plus / TS4*
Packaging	Modules per box: 33pieces Modules per 40' container: 594 pieces

\*Please refer to regional datasheet for specified connector.



www.trinasolar.com

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.  
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Version number: TSM\_EN\_2024\_A

# ALLOLLA

*Make life better*

## ALLOLLA GENERAL POWER

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