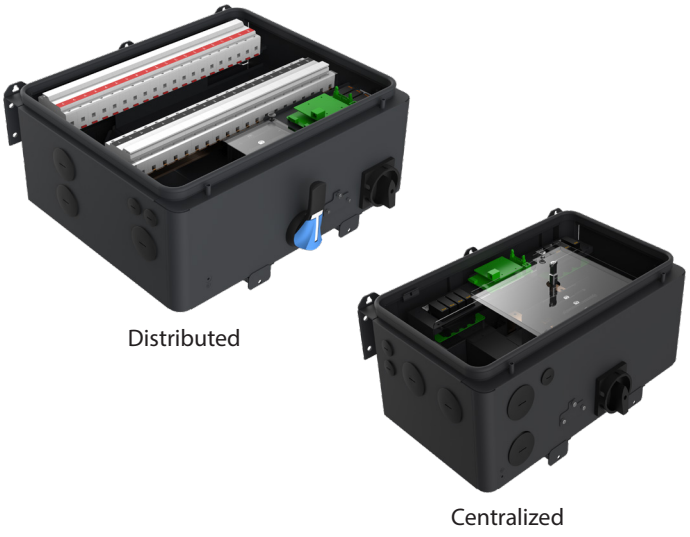
100/125 kW, 1500 Vdc String Inverters for North America

CPS SCH100/125KTL-DO/US-600

The 100 and 125 kW high power CPS three-phase string inverters are designed for ground mount applications. The units are high performance, advanced, and reliable inverters designed specifically for the North American environment and grid. High efficiency at 99.1% peak and 98.5% CEC, wide operating voltages, broad temperature ranges, and a NEMA Type 4X enclosure enable this inverter platform to operate at high performance across many applications. The CPS 100/125 kW products ship with the Distributed or Centralized Wire Box, each fully integrated and separable with AC and DC disconnect switches. Enhanced DC Wire Boxes are available to allow DC disconnection under short circuit conditions. The CPS FlexOM Gateway enables communication, controls, and remote product upgrades.

Key Features

- NFPA 70 and NEC compliant
- Touch-safe DC Fuse holders add convenience and safety
- CPS FlexOM Gateway enables remote firmware upgrades
- Integrated AC and DC disconnect switches
- 1 MPPT with 20 fused inputs for maximum flexibility
- Copper- and aluminum-compatible AC connections
- NEMA Type 4X outdoor rated enclosure
- Advanced Smart-Grid features (CA Rule 21 certified)
- kVA headroom yields 100 kW @ 0.9 PF and 125 kW @ 0.95 PF
- Generous 1.87 (100 kW) and 1.5 (125 kW) DC/AC inverter load ratios
- Separable wire box design for fast service
- Enhanced DC wire boxes available



Distributed

Centralized

Standard Wire Boxes

Distributed

Centralized

Enhanced DC Wire Boxes

This device complies with part 15 of the FCC Rules

Chint Power Systems America
1380 Presidential Drive, Suite 100, Richardson, TX 75081
Tel: 855-584-7168 Mail: AmericaSales@chintpower.com Web: www.chintpowersystems.com

Model Name	CPS SCH100KTL-DO/US-600	CPS SCH125KTL-DO/US-600
DC Input		
Max. PV power	187.5 kW	
Max. DC input voltage	1500 V	
Operating DC input voltage range	860-1450 Vdc	
Start-up DC input voltage / power	900 V / 250 W	
Number of MPP trackers	1	
MPPT voltage range[1]	870-1300 Vdc	
Max. PV input current (Isc ×1.25)	275 A	
Number of DC inputs	Distributed Wire Box: 20 PV source circuits, positive and negative fused Centralized Wire Box: 1 input circuit, 1-2 terminations per pole, non-fused	
DC disconnection type	Load-rated DC switch	
DC surge protection	Type II MOV (with indicator/remote signaling)	
AC Output		
Rated AC output power[2]	100 kW	125 kW
Max. AC apparent power (selectable)	100 kVA (111 kVA @ PF > 0.9)	125 kVA (132 kVA @ PF > 0.95)
Rated output voltage	600 Vac	
Output voltage range[3]	528-660 Vac	
Grid connection type[4]	3Φ / PE / N (neutral optional)	
Max. AC output current @ 600 Vac	96.2 / 106.8 A	120.3 / 127.0 A
Rated output frequency	60 Hz	
Output frequency range[3]	57-63 Hz	
Power factor	>0.99 (±0.8 adjustable)	
Current THD	< 3%	
Max. fault current contribution (1 cycle RMS)	41.47 A	
Max. OCPD rating	200 A	
AC disconnection type	Load-rated AC switch	
AC surge protection	Type II MOV (with indicator/remote signaling)	
System		
Topology	Transformerless	
Max. efficiency	99.1%	
CEC efficiency	98.5%	
Standby / night consumption	< 4 W	
Environment		
Enclosure protection degree	NEMA Type 4X	
Cooling method	Variable speed cooling fans	
Operating temperature range[2]	-22°F to 140°F / -30°C to 60°C	
Non-operating temperature range[5]	-40°F to 158°F / -40°C to 70°C	
Operating humidity	0-100%	
Operating altitude	8202 ft / 2500 m (no derating)	
Audible noise	< 65 dBA @ 1 m and 77°F (25°C)	
Display and Communication		
User interface and display	LED indicators, Wi-Fi and app	
Inverter monitoring	Modbus RS485	
Site-level monitoring	CPS FlexOM Gateway (1 per 32 inverters)	
Modbus data mapping	SunSpec / CPS	
Remote diagnostics / firmware upgrade functions	Standard / (with FlexOM Gateway)	
Mechanical		
Dimensions (W × H × D)	Distributed Wire Box: 45.28 × 24.25 × 9.84 in (1150 × 616 × 250 mm) Centralized Wire Box: 39.37 × 24.25 × 9.84 in (1000 × 616 × 250 mm)	
Weight	Inverter: 121 lbs (55 kg) Distributed Wire Box: 55 lbs (25 kg) Centralized Wire Box: 33 lbs (15 kg)	
Mounting / installation angle	15-90 degrees from horizontal (vertical or angled)	
AC termination	M10 stud type terminal [3Φ] (wire range: 1/0 AWG-500 kcmil CU/AL; lugs not supplied) Screw clamp terminal block [N] (#12-1/0 AWG CU/AL)	
DC termination	Distributed Wire Box: Screw clamp fuse holder (wire range: #12-#6 AWG CU) Centralized Wire Box: Busbar, M10 bolts (wire range: #1 AWG-500 kcmil CU/AL [1 termination per pole], #1 AWG-300 kcmil CU/AL [2 terminations per pole]; lugs not supplied)	
Fused string inputs	Standard/Distributed Wire Boxes: 25 A fuses provided (fuse values up to 30 A acceptable) Enhanced DC Wire Boxes: 20 A fuses provided (fuse values up to 30 A acceptable)	
Safety		
Certifications and standards	UL 1741-SA/SB Ed. 3, CSA-C22.2 NO.107.1-01, IEEE 1547-2018, FCC PART15	
Selectable grid standard	IEEE 1547a-2014, IEEE 1547-2018[6], CA Rule 21, ISO-NE	
Smart-grid features	Volt-RideThru, Freq-RideThru, Ramp-Rate, Specified-PF, Volt-VAR, Freq-Watt, Vol-Watt	
Warranty		
Standard	5 years	
Extended terms	10, 15, and 20 years	

1) See user manual for further information regarding MPPT voltage range when operating at non-unity PF.
2) 100 kW active power derating begins at 113°F (45°C) when MPPT ≥ Vmin; 125 kW active power derating begins at 107.6°F (42°C) when PF = ±0.95 and MPPT ≥ Vmin, and at 113°F (45°C) when PF=1 and MPPT ≥ Vmin.
3) The "output voltage range" and "output frequency range" may differ according to the specific grid standard.
4) Delta configurations must not be corner-grounded.
5) See user manual for further requirements regarding non-operating conditions.
6) Firmware version 12.0 or later required.

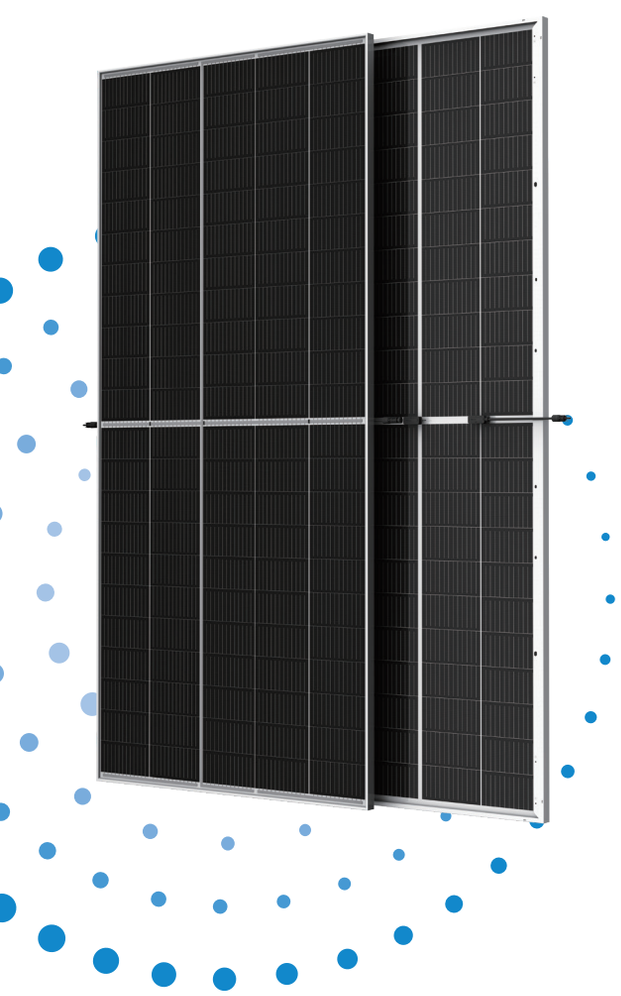
Vertex

BIFACIAL DUAL GLASS MONOCRYSTALLINE MODULE

PRODUCT: TSM-DEG19C.20

PRODUCT RANGE: 535-555W

555W	0~+5W	21.2%
MAXIMUM POWER OUTPUT	POSITIVE POWER TOLERANCE	MAXIMUM EFFICIENCY



High customer value

- Lower LCOE (Levelized Cost Of Energy), reduced BOS (Balance of System) cost, shorter payback time
- Lowest guaranteed first year and annual degradation;
- Designed for compatibility with existing mainstream system components
- Higher return on Investment

High power up to 555W

- Up to 21.2% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection

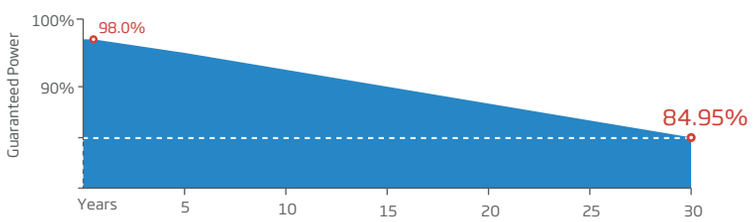
High reliability

- 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

High energy yield

- Excellent IAM (Incident Angle Modifier) and low irradiation performance, validated by 3rd party certifications
- The unique design provides optimized energy production under inter-row shading conditions
- Lower temperature coefficient (-0.34%) and operating temperature
- Up to 25% additional power gain from back side depending on albedo

Trina Solar's Vertex Bifacial Dual Glass Performance Warranty



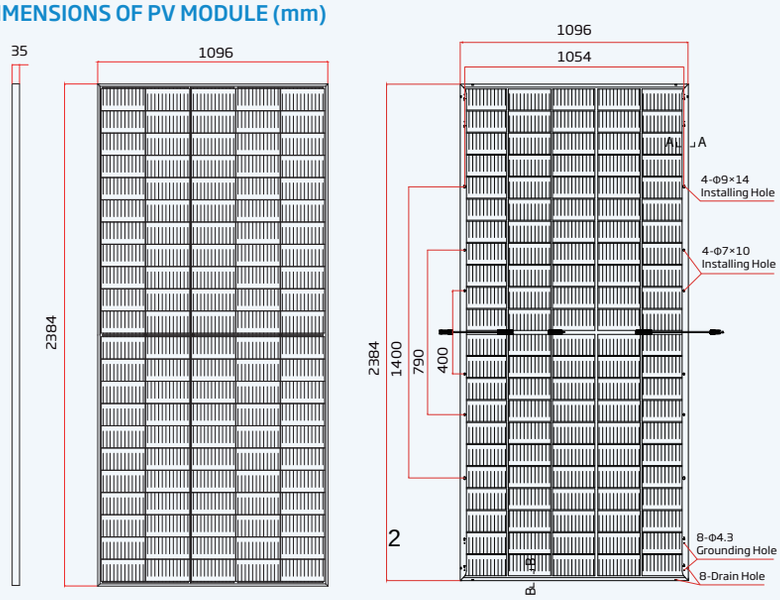
Comprehensive Products and System Certificates

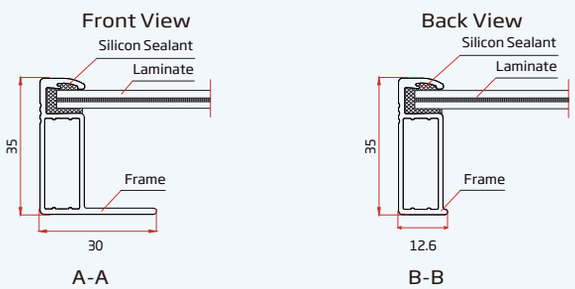
IEC61215/IEC61730/IEC61701/IEC62716/UL61730
ISO 9001: Quality Management System
ISO 14001: Environmental Management System
ISO14064: Greenhouse Gases Emissions Verification
ISO45001: Occupational Health and Safety Management System

Trinasolar

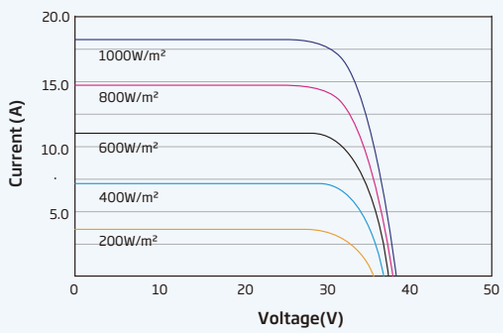
Vertex BIFACIAL DUAL GLASS MONOCRYSTALLINE MODULE

DIMENSIONS OF PV MODULE (mm)

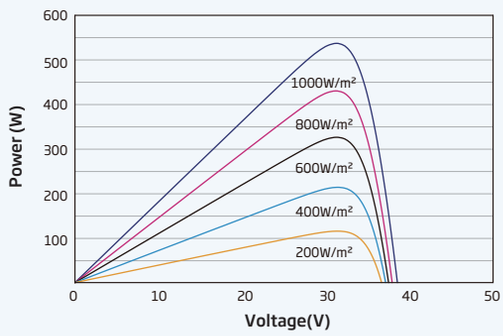




I-V CURVES OF PV MODULE (540W)



P-V CURVES OF PV MODULE (540W)



ELECTRICAL DATA (STC)

Peak Power Watts-PMAX (Wp)*	535	540	545	550	555
Power Tolerance-PMAX (W)			0 ~ +5		
Maximum Power Voltage-VMPP (V)	31.2	31.4	31.6	31.8	32.0
Maximum Power Current-IMPP (A)	17.16	17.21	17.24	17.29	17.35
Open Circuit Voltage-VOC (V)	37.5	37.7	37.9	38.1	38.3
Short Circuit Current-ISC (A)	18.24	18.30	18.35	18.39	18.43
Module Efficiency η m (%)	20.5	20.7	20.9	21.0	21.2

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

Electrical characteristics with different power bin (reference to 10% Irradiance ratio)

Total Equivalent power -PMAX (Wp)	573	578	583	589	594
Maximum Power Voltage-VMPP (V)	31.2	31.4	31.6	31.8	32.0
Maximum Power Current-IMPP (A)	18.36	18.41	18.45	18.50	18.56
Open Circuit Voltage-VOC (V)	37.5	37.7	37.9	38.1	38.3
Short Circuit Current-ISC (A)	19.52	19.58	19.63	19.68	19.72
Irradiance ratio (rear/front)			10%		

Power Bifaciality:70±5%.

ELECTRICAL DATA (NOCT)

Maximum Power-PMAX (Wp)	405	409	413	416	420
Maximum Power Voltage-VMPP (V)	29.0	29.2	29.4	29.5	29.7
Maximum Power Current-IMPP (A)	13.97	14.02	14.08	14.10	14.14
Open Circuit Voltage-VOC (V)	35.3	35.5	35.7	35.9	36.1
Short Circuit Current-ISC (A)	14.70	14.75	14.79	14.82	14.85

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

MECHANICAL DATA

Solar Cells	Monocrystalline 210mm PERC
No. of cells	110 cells
Module Dimensions	2384×1096×35 mm (93.86×43.15×1.38 in)
Weight	32.3 kg (71.2 lb)
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	35mm (1.38 in) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm² (0.006 in²) Portrait: 350/280 mm (13.78/11.02 in)* Landscape: 1400/1400 mm (55.1/55.1 in)*
Connector	MC4 EVO2 / TS4

*Lengths can be customized.

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of PMAX	- 0.34%/°C
Temperature Coefficient of VOC	- 0.25%/°C
Temperature Coefficient of ISC	0.04%/°C

*Recommended.

MAXIMUMRATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC (IEC)
	1500V DC (UL)
Max Series Fuse Rating	35A*

WARRANTY

12 year Product Workmanship Warranty

30 year Power Warranty

2% first year degradation

0.45% Annual Power Attenuation

(Please refer to product warranty for details)

PACKAGING CONFIGUREATION

Modules per box: 31 pieces

Modules per 40' container: 527 pieces

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

Version number: TSM_DEG19C.20_NA_EN_2022_C

www.trinasolar.com

MSDS REPORT

MATERIAL SAFETY DATA SHEET

SECTION 1- PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ***Crystalline silicon PV module***

Company Identification: ***Trina Solar Energy Co ., Ltd.***

Address: No.2 Trina Road, Trina PV Park, New District, Changzhou, Jiangsu, P.R.China213031

Postal Code: 213002

Telephone: ***+86-0519-85176910***

Emergency Telephone number : +86-0519-85176110

Mail address: mail.trinasolar.com

SECTION2- COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENTS CONTENT:

Material Item	Chemical Name of Composition	CAS NO.	Concentration % （w/w）
Metal Frame	***Aluminum***	***7429-90-5***	***0~10***
	Magnesium	***7439-95-4***	***0~0.1***
	Silicon	***7440-21-3***	***0~0.1***
	Iron	***7439-89-6***	***0~0.05***
Plastic Frame	***Fiberglass***	***65997-17-3***	***0~10***
	Polyurethane	***51852-81-4***	***0~3***
Cell	Silicon	***7440-21-3***	***1.5~3***
	Argentum	***7440-22-4***	***0.01~0.05***
	Aluminum	***7429-90-5***	***0~0.1***
Junction-Box	Polyphenylene oxide (PPO)	***31533-76-3***	***0.05~0.2***

	Tin	7440-31-5	<0.01
	Plumbum	7439-92-1	<0.01
	Copper	7440-50-8	0.05~1
	Polyethylene (PE)	9002-88-4	0.05~0.5
	Polycarbonate (PC)	25037-45-0	<0.01
	Polyamide (PA)	63428-83-1	<0.01
Glass	Silicon dioxide	7631-86-9	30~60
	Sodium oxide	1313-59-3	6~12
	Magnesium oxide	1309-48-4	1.5~3.5
	Calcium oxide	1305-78-8	4~9
Silica gel	Polydimethylsiloxane	70131-67-8	0.25~0.75
	Calcium carbonate	471-34-1	0.25~0.75
	Aluminium hydroxide	21645-51-2	0.01~0.05
	Silicon dioxide	7631-86-9	0.01~0.05
Bus bar	Copper	7440-50-8	1~5
	Tin	7440-31-5	0.1~0.5
	Plumbum	7439-92-1	0.1~0.5
Back sheet	Polyvinylidene fluoride (PVDF)	24937-79-9	0~0.4
	Polyethylene terephthalate (PET)	25038-59-9	0~4
	Fluorocarbon resin (FEVE)	9010-75-7	0~0.4
Encapsulating material	Ethylene-vinyl acetate copolymer (EVA)	24937-78-8	0~15
	Ethylene-octene copolymer (POE)	6221-73-8	0~15
	Titanium dioxide	12065-65-5	0~2
Nameplate	Polyethylene terephthalate (PET)	25038-59-9	<0.01

SECTION3- HAZARDS IDENTIFICATION

Emergency Overview: warning, non-demolition, not exposed to flame or fire. There is the risk of explosion and burn under fire conditions.

Do not short-circuit, squeezing, burning, or removing the module.

Potential health hazards

Risk Categories: None

Invasive Ways: None

Environmental Hazards: None

Health Hazards: None

Explosion Hazard: Tempered glass has a 1/10000 explosion risk.

The inverter device does not meet the provision, the flaws on system design, the quality problem of the junction box, the hot spot effect will be the reason of spontaneous combustion of this product.

SECTION4- FIRST AID MEASURES

Eye contact: No damage found on eye contact, no special provisions.

Skin contact: No skin contact injury found. It is proposed to wash hands before and after touch back sheet. If molten polymer contacts skin, immediately cool it with cold water, and do not directly peel them from the skin, go to hospital for treatment by burns drugs.

Ingestion: No damage found, no special provisions.

Inhalation: No damage found, no special provisions. If you have overheating or fire hazard, be away from heat. Go to hospital if any discomfort.

SECTION5- FIRE FIGHTING MEASURES

In general: during normal operation, this product is not prone to burning.

Hazardous Combustion Products: CO, HF.

Extinguishing Media: The hydrogen produced under the using of water may be mixed with air to form an explosive mixture if the module is burning. For small fires, carbon dioxide, dry powder or foam extinguishing agent are preferred medium. But they may not work to the burning module until the combustion module will be completely burned out. LITH-X (powdered graphite) or copper powder extinguisher, sand, dried, pulverized dolomite or soda ash can also be used, and these materials can be used as a smothering agent.

Extinguishing Note: transfer people to a safe area in the upwind air, wear respirators, protective gloves and fire fighting clothing. If large amounts are inhaled, give emergency medical treatment.

SECTION6- ACCIDENTAL RELEASE MEASURES

Emergency treatment: solid normally, NA.

SECTION7- HANDLING AND STORAGE

Handling Precautions:

Outline

1, In strict accordance with the requirements of the user manual to install modules, and are not free to install, maintain. 2, Do not strongly illuminate module artificially(artificial sunlight is unavailable)

3, The system DC voltage exceeds 100V, operation must be done by specialized electrician.

4, It is potentially dangerous to contact a voltage of 30V or above.

5, Junction boxes, cables, brackets, etc should be matched with modules during installation of electrical systems.

6, Installation of all accessories must follow safe working practices (other accessories must also comply with the security provisions of operation)

7, The installation should be in accordance with local, national and international standards.

8, Module installation should be operated by professionals.

Safe handling

1, Properly packed before installation of modules.

2, Do not directly holding the junction box to handle the modules

3, Not drop modules or obstacles fall on it.

4, Handle it gently, especially angular point.

5, Do not disassemble the modules and move any part of the modules or label after installation.

6, Do spray paint or stick other items on the back of the modules.

7, Do not drill on the glass and module border.

8, Do not place the module without bracket or not an unsafe place

9, The module cannot be used after glass is broken.

10, To operate with dry tool in the clean environment.

Install security

1, Do not allow the children to close during installation.

2, Module cannot be installed in high winds.

3, Appropriate Installation methods and safety equipment should be used in the installation site to prevent the falling of modules.

4， To avoid current generation during installation, the components should be completely covered

5, Do not touch the wire or connection port when the installation of the modules or the modules are exposed to the sunlight.

6, Do not wear metal jewelry during the installation.

7, Do not disconnect the line or unplug the connection plug when circuit is working.

Fire safety

1, Roof structures and installations that may affect the fire safety of the entire building, unreasonable installation will aggravate to the severity of the fire.

2, The modules should be installed on the fire isolation layer, in order to improve security

3, Module installation on the rooftop and ground should be the same, with insurance device and circuit fuse.

4, Do not install the modules near the storage equipment and place of flammable gas.

Electrical Installation

1, Avoid the risk of electric shock during installation, wiring, module operating.

2, The module of different specifications cannot used in the same array.

3, The open circuit voltage of module is less than the maximum voltage of standard system.

4, All of the modules no matter how much voltage should be grounding.

5, The cable is to be placed where the children and animals cannot touch.

6, Cables and junction boxes may overheat at high current.

7, Make sure junction box and wire can go through the short-circuit current.

8, Make sure the positive and negative polarity of the cable and terminal during connection.

9, Grounding line is provided.

Mechanical Installation

1, Fix the modules with the installation tools and special bracket to support modules

2, Make sure the module can still work carrying a certain load, which is not affected by the impact of the snow load or thermal expansion and contraction

3, Make sure that the modules can still work in the ambient temperature within the variable range of -40 to +80 ℃/ -40 to176 ℉

4, Off-grid power generation system installed in large areas of snow, require module position lower and bracket narrower

5, Providing install mounting holes for frame modules which can withstand a certain degree of mechanical strength. 6, All four position holes on the module are used for installation.

7, Be well-ventilated behind the module. (5 cm / 2 inch gap)

8, Be away from the other items behind the modules.

Storage:

Use wooden boxes (carton) packaging and store it in a cool, well-ventilated place, be away from heat and fire sources.

SECTION8-EXPOSURE CONTROLS/PERSONAL PROTECTION EQUIPMENT

Engineering Controls: NA

Eye protection: NA

Skin contact: NA under normal conditions, if the module is damaged, please wear appropriate protective gloves.

Clothing: NA under normal conditions, if the module is on fire and burst, please wear appropriate protective clothing.

Respirator: NA under normal conditions.

SECTION9- PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid

Odor: None

Voltage: different specifications, different voltage

Weight: ***15~45 kg***

Solubility in water: insoluble in water

SECTION10- STABILITY AND REACTIVITY

Stability: Stable under normal storage and operating conditions.

Conditions to avoid: fire, high temperature, high humidity, salt spray

Substances to be avoided: strong oxidizing agents.

Hazardous decomposition products: fire conditions may produce hazardous decomposition products.

Hazardous Polymerization: No information available.

SECTION11- TOXICOLOGICAL INFORMATION

Acute poisoning: under normal conditions, the product will not cause any abnormal emergency injury.

Irritation: None

SECTION12- ECOLOGICAL INFORMATION

Ecological toxicity: the proper use and disposal of the module will not cause harm to the environment. Disposal of waste modules, be away from the water, rain and snow.

SECTION13- DISPOSAL

Disposal: Should refer to national and local laws and regulations before disposal.

SECTION14- TRANSPORT INFORMATION

Dangerous Goods Code: No information

UN Number: information

Packing mark: no information

Packaging category: Z01

Packing method: No information available.

Transportation Note: Package should be complete before transportation, and loading should be safe. To ensure that the container does not leak, not fall, not damaged during transportation. Do not be together with oxidizing agents, alkalis, food chemicals. Goods should be anti-exposure, rain, anti-high temperature during transportation.

SECTION15- REGULATORY INFORMATION

Regulatory Information: Refer to local, domestic, EU / international regulations

SECTION16-OTHER INFORMATION

MSDS Preparation date: ***April 23, 2023***

The information of this MSDS is just based on our current related information, which have been prepared only for the description of the goods health, safety and environmental requirements, to enable all interested parties to better understand and trust this product. This information is only available to you for consideration, study and confirmation. Some description of hazard prevention measures is not unique. Without any implied guarantees, description or expression to use this information, ***Trina Solar Energy Co ., Ltd.*** does not assume any liability of this MSDS. So this MSDS cannot guarantee any particular purpose of this product. The users have the responsibility to complete this product security and other aspects of the test in advance, to judge whether it meets your intended use.