



深圳市联立太阳能有限公司
Shenzhen Lianli Solar Energy Co.,Ltd

Add:Floor 3, Building B, 154 Guanping Road, Guanlan Street, Longhua New District,
Shenzhen, Guangdong Province,China

Web: www.llsolar.com

Attn: Zoey

Tel/Wechat: +86 13699825781

Email: sales3@llsolar.com

Customer:

Product Name: 105W ETFE Integrated Solar Panel with one handle

Product Model: LL-YT100W

Using Surroundings: Outdoor

Date: 17th,Dec,2022

Draft:Mr Zeng

Auditor: Mr Zhao

Confirmation: Mr Wen

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Shenzhen, Guangdong Province,China

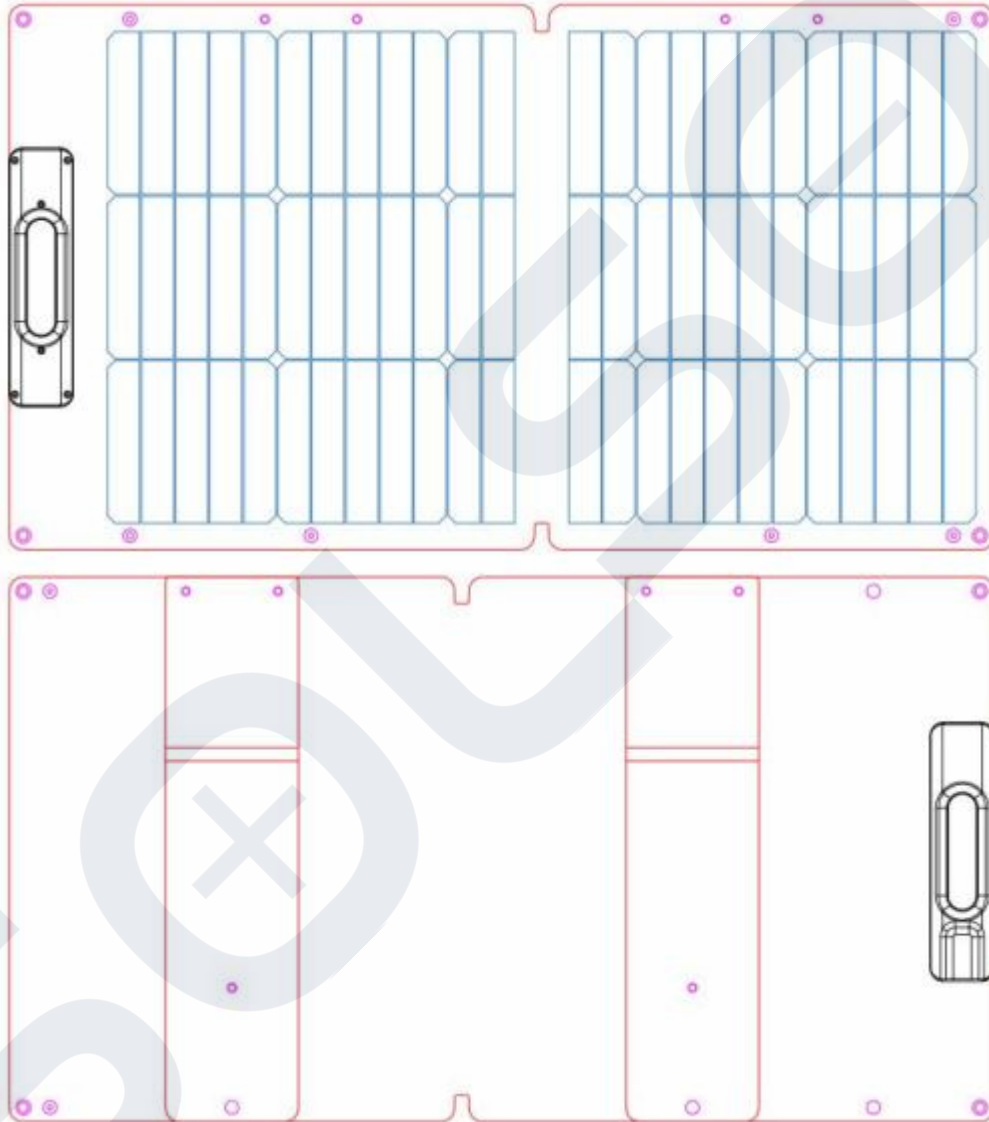
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1. The front and back side of solar panel effect pictue(Drawing Show)



2. Solar Panel Working Way:(Drawing Show)

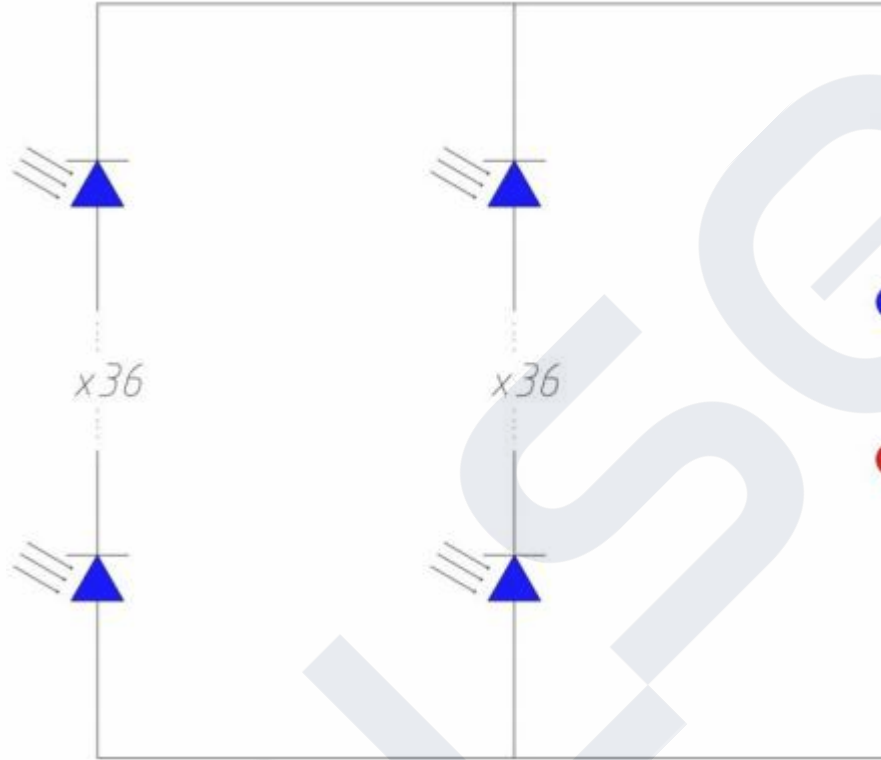
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3. Solar Panel Output Electrical performance:

1) Nude Solar Panel Electrical Performance:

Output Power (@STC)	105.0 W ±5%
Open Voltage (@STC)	24.48V ±5%
Standard Voltage (@STC)	19.44V ±5%
Standard Current (@STC)	5.40A ±5%
Short Circuit (@STC)	5.94A ±5%

2) The Electrical Performance of output port:

	ITEMS	Standard	Remark/Condition
Output Ports of control box--USB-A and USB-C with	USB-A/5V(Voc)	5V +5%	
	USB-A/5V(Vmp)	5V +5%	USB-A(3.0A)
	USB-A/9V(Voc)	9V +5%	
	USB-A/9V(Vmp)	9V +5%	USB-A(2.5A)
	USB-A/12V (Voc)	12V +5%	
	USB-A/12V(Vmp)	12V +5%	USB-A(2.0A)
	USB-Total/A	4A (Max)	



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PD45W	Type-C/5V (Voc)	5V +5%	
	Type-C/5V (Vmp)	5V +5%	Type-C(3.0A)
	Type-C/9V (Voc)	9V +5%	
	Type-C/9V (Vmp)	9V +5%	Type-C(3.0A)
	Type-C/12V (Voc)	12V +5%	
	Type-C(Vmp)	12V +5%	Type-C(2.0A)
	DC5521 Output	19.44V(120W Max)	

Note: STC: Standard Tested Condition: AM=1.5 , 25°C , 1000W/m²

4. Solar Panel Basic Specification:

Unfolded Size	110*61CM/43.31*24.02inch
Folded Size	61*59.7*3.1CM/24.02*23.50*1.22inch
Net Weight	2.8KG/6.16lbs

Size Specification (Drawing)

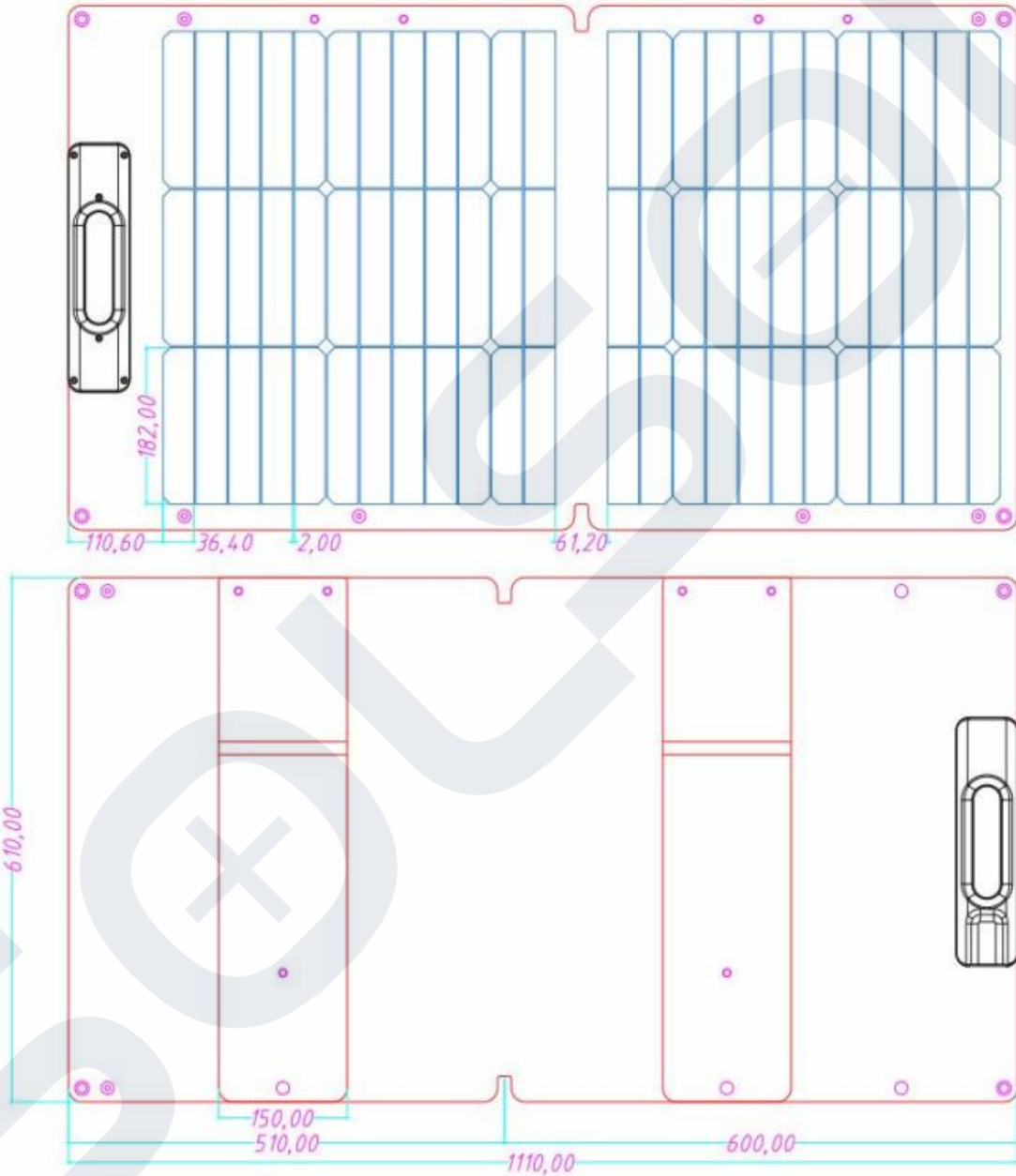
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5. Solar Panel Component and Material Specification:

Compound Material	Newest Fiber Material
PV welding strip	0.6*0.18mm
Braided copper tape	10×13MM/0.05
Solar cells	0.18mm , 182-10BB solar cell
EVA	0.45mm



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ETFE	0.02mm,Dull Polish surface
Fabric between solar cells and EVA	0.3mm
Fabric backside	0.4mm
Gun black eyelets	Inner-Diameter:10mm,Outer diameter:16.5mm
Gun black screw buckle	Diameter-of-axle-5mm,axial length-3mm,Cap diameter-9.5mm
Black gun button	Surface buckle diameter 15mm matching
Handle shell	29x7.2x3.1CM
Controller	USB+TYPE-C+DC5521 with waterproof cover
Bottom board of support	1.6mm
Elastic band	Length:350mm±10mm,Two ends of nylon cloth binding
Accessories	MC4 cable,MC4 to 6PCS of conversion connectors(option)

6. Lamintated method and surface effect:

- 1) Lamination:multiple layers material by hot pressing;
- 2) Surface effect of solar panel: front- matt ETFE, back-waterproof cloth;
- 3) Silicone inside the wiring board.

7. Warranty:

1 Year.

8. Standard method of electrical performance and using environment

- 1) Working power tested after lamination;
- 2) Solar radiation intensity: 1000W/m² or customer sample;
- 3) Temperature: 25 °C;
- 4) Humidity: 10~90%;
- 5) Air quality: AM1.5

9. Working Power Test

- 1) Adjust the light strength to the customer's signature of sample;
- 2) Tested by IV tester;
- 3) Correct the light intensity every 2 hours

10.Environmental conditions for use and storage



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- 1) Storage conditions: normal temperature, humidity not more than 60%;
- 2) Ensure the solar panel located outdoor environment without shelter in the sun;
- 3) Working ambient temperature: - 20 °C~60 °C;
- 4) Temperature of soldering iron: 360 ± 10 °C;
- 5) The time of spot welding shall not exceed 3 seconds, and the interval time between multiple spot welding shall not be less than 30 seconds.

11. Appearance inspection requirements:

Note: During appearance inspection, the hand-held product is parallel to the line of sight, with a sight distance of 30cm, a tilt of 45 degrees, a left and right deflection of 15 degrees, and no obvious defects can be found within 5 seconds

Code description: L: length W: width H: height D: distance N: quantity ∅: diameter

- 1) Single panel, no obvious color difference under indoor lighting;
 - 2) The silicon wafers are arranged neatly;
 - 3) Silicon chip edge collapse and missing corner: $L \leq 3.5\text{mm}$ $W \leq 3.5\text{mm}$ $N \leq 8$;
 - 4) Silicon chip surface stain: $\emptyset \leq 4\text{mm}$ $N \leq 8$;
 - 5) Scratch: $L \leq 10\text{mm}$;
 - 6) No obvious bright spot: $W \leq 1.5\text{mm}$ $N \leq 6$;
 - 7) There is dirty between Solar cells, and the spot area: $\emptyset \leq 0.8\text{mm}$ $N \leq 8$;
 - 8) Tin slag, bubbles and foreign matters in the glue: $\emptyset \leq 2.5\text{mm}$ $N \leq 6$;
 - 9) For laser cutting process, the tolerance range of length and width is $\pm 0.25\text{mm}$;
- In case of any dispute over the above standards, the limit sample confirmed by both parties

12. Package Details:

4PCS/CTN	Unit Product	Unit Product with inner box	Unit Carton
Weight	2.8KG/6.1 6lbs	3.45KG/7.59lbs	14.6KG/32. 12KG
Size	61*59.7*3. 1CM/24.0 2*23.50*1. 22Inch	65.8*63.8*6.3CM/ 25.91*25.12*2.48i nch	67.5*66*28 CM/26.57*2 5.98*11.02i nch