



SHINGLED SOLAR PANEL USER MANUAL

SH120SG-FIX / SH200SG-FIX

Please read this manual carefully before operation and maintenance,
follow all provided instructions, and keep it for future reference.

V1.0

ABOUT US

Founded in 2018, the San Hima brand stands for passion and enthusiasm for exploring the spectacular nature of the great outdoors. Since its inception, the trusted solutions and proven designs that San Hima offers to the market have made adventure and travelling flexible and enjoyable!

Headquartered in Australia, San Hima proudly offers an extensive range of overland solutions. Our diverse offerings include cargo systems, towing solutions, caravan and trailer parts as well as car camping equipment. Designed to accompany you on your journeys and enhance your performance when conquering the peaks, our products are crafted for those with a passion for exploration.

At San Hima, we have wild souls and we are committed to providing products that are tough enough to take on any adventures and at the same time, making them safe and easy to use. These values in our conviction are what drive us to make innovations. Because pursuing your passion should never be complicated.

Live the Peak, Conquer the Everest, San Hima is your brand of choice!

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IMPORTANT WARNING AND SAFETY INSTRUCTIONS

- Before operating the San Hima solar panels, it is imperative that you thoroughly read and comprehend this manual. The installation should strictly adhere to the provided instructions. San Hima recommends that the panel be installed by a suitably qualified person.
- Exercise caution and do not disassemble, bend, hit, or step on the solar panel. Handle and install the solar panel with care to prevent damage to cells and wiring, which could lead to short circuits, overheating, and a decrease in efficiency. Under no circumstances should you operate the unit if it has been smashed, pierced, or otherwise damaged.
- Avoid directly connecting the solar panel to a battery. Always use a solar charge controller between the solar panel and the battery to ensure safe operation.
- Only use the solar panel for charging Lead Acid, Gel, Calcium, AGM, or Lithium Iron Phosphate 12V batteries, employing a suitable solar charge controller based on the battery's chemistry. This solar panel is not intended for charging non-rechargeable batteries, as it may result in user injuries or damage to the panel and the controller.
- To minimize the risk of sparks, connect or disconnect the solar panels to the charge regulator before exposing them to sunlight. The solar panels may generate voltage up to the rated open circuit value at the connection leads while unconnected.
- When exposed to light, unconnected panels may generate voltages on their leads. During installation, connecting, or disconnecting, completely cover all panels with an opaque material to reduce the chance of electrical sparks.
- When mounted on vehicles, including 4x4 vehicles, RVs, caravans, etc., the solar panels are subjected to high wind and vibration forces during driving. Ensure secure attachment to the vehicle following all local and national safety standards.
- Do not use mirrors or other devices to artificially concentrate sunlight on the panel. Partially shaded or partially obscured solar panels will have reduced output, and can potentially damage the solar panel.
- Keep the solar panel away from liquids and chemical solvents. Do not immerse the solar panel in water or wet it.
- Ensure that nothing sharp or heavy could potentially break or damage the solar panel during transport or storage. Never place the solar panel near fire or flammable materials.

- Clean the unit as necessary using a wet sponge or cloth. A mild, non-abrasive cleaning agent can be used to remove grime and dirt.
- Note that the solar panel is not designed for use in series or parallel configurations, and this unit is not intended for commercial use.

PERSONAL SAFETY PRECAUTIONS

- This solar panel is not intended for use by individuals, including children, with reduced physical, sensory, or mental capabilities, or those lacking experience and knowledge unless supervised or instructed on how to use the appliance by a person responsible for their safety. Children should be supervised to prevent any playful interaction with the appliance.
- Ensure complete eye and clothing protection while operating the solar panel. Avoid touching your eyes when working near a battery.
- In case battery acid comes into contact with your skin or clothing, promptly remove the affected clothing and wash the impacted skin area with soap and water. If battery acid enters your eye, immediately flush the eye with running cold water for a minimum of 10 minutes and seek medical assistance without delay.

MAINTENANCE GUIDELINES

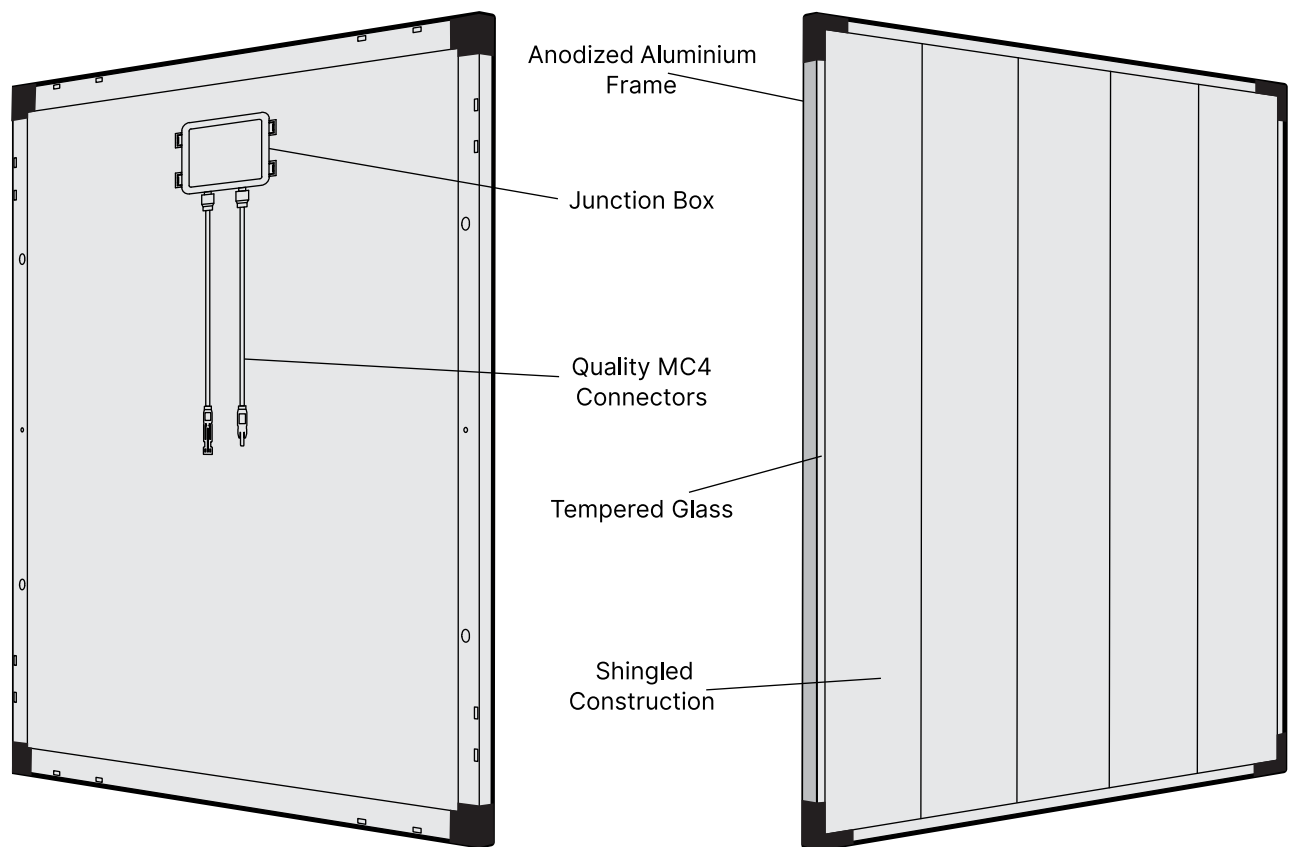
- To ensure optimal performance and longevity of your solar panels, please adhere to the following maintenance recommendations:
 1. **Regular Inspection:** Conduct routine inspections of your solar panels to ensure their surface is free from dust, dirt, and other debris.
 2. **Cleaning:** If necessary, clean the solar panel surface using a wet cloth or an appropriate glass cleaner to remove any accumulated dirt or residue.
 3. **Structural Components and Electrical Connections:** Verify that all structural components and electrical connections are securely in place and free from any contaminants. Regularly cleaning these components is advisable to maintain efficiency.
- By consistently following these maintenance recommendations, you can optimize the performance of your solar panels and contribute to their overall durability.

WHAT'S IN THE KIT

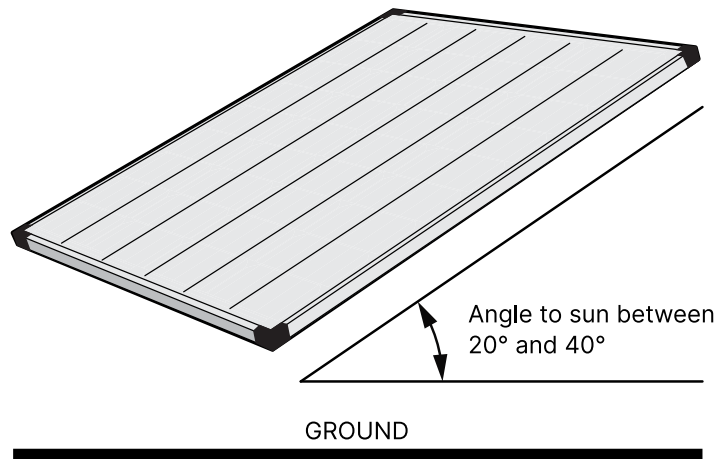
1 PC(s) San Hima Shingled Solar Panel

1 PC(s) User Manual

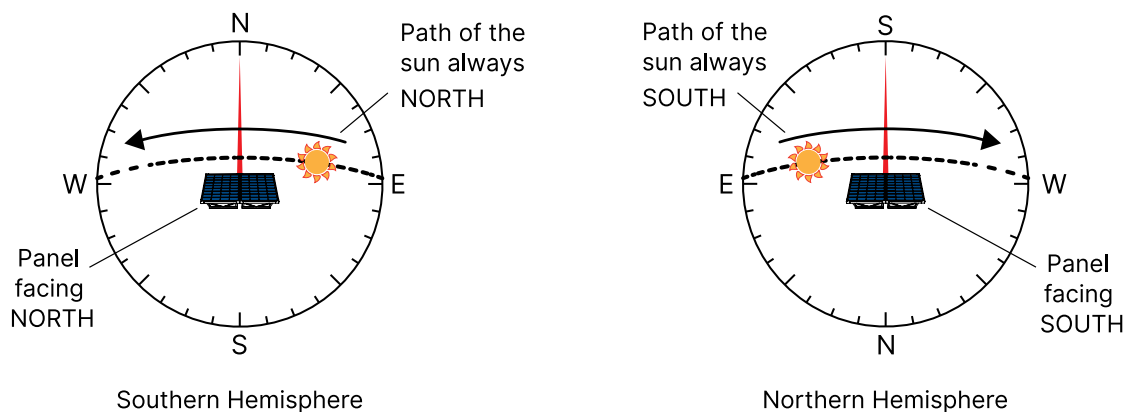
KNOW YOUR SOLAR PANEL



SOLAR OPTIMIZATION

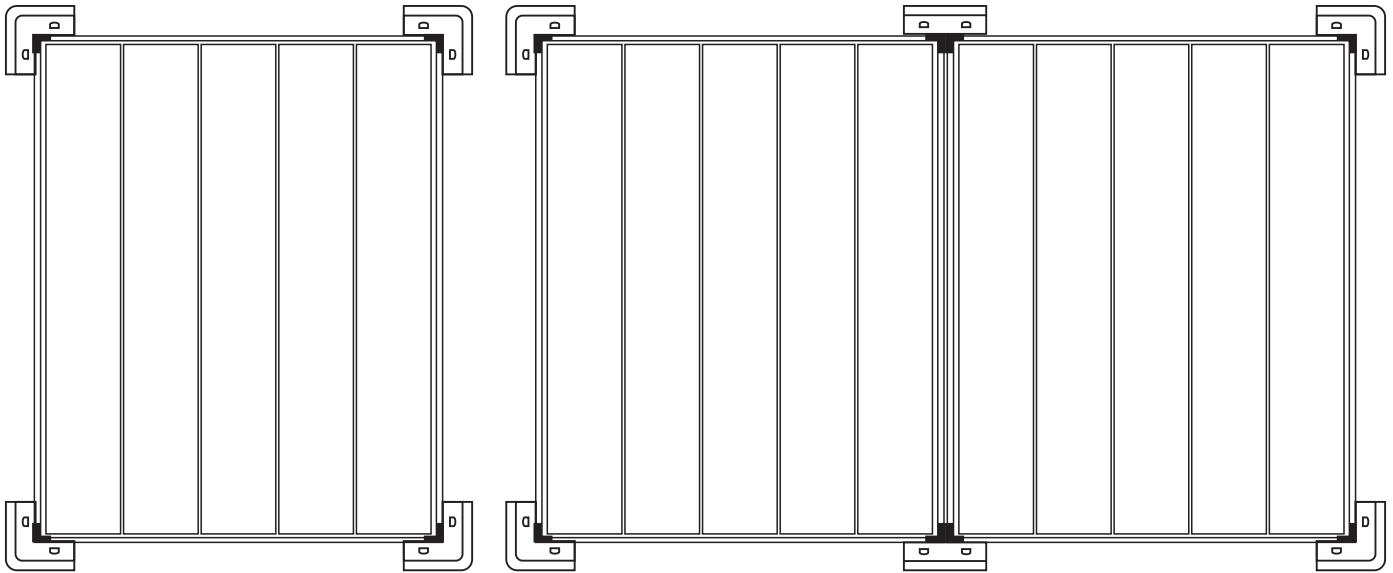


To optimize the performance of San Hima solar panels, it is ideal to position the panel face directly towards the sun. However, in practice it is not possible to achieve this orientation at all times. San Hima recommends adjusting your panels to an angle between 20° and 40° from the ground. This range ensures optimal total output throughout the day, irrespective of the season.

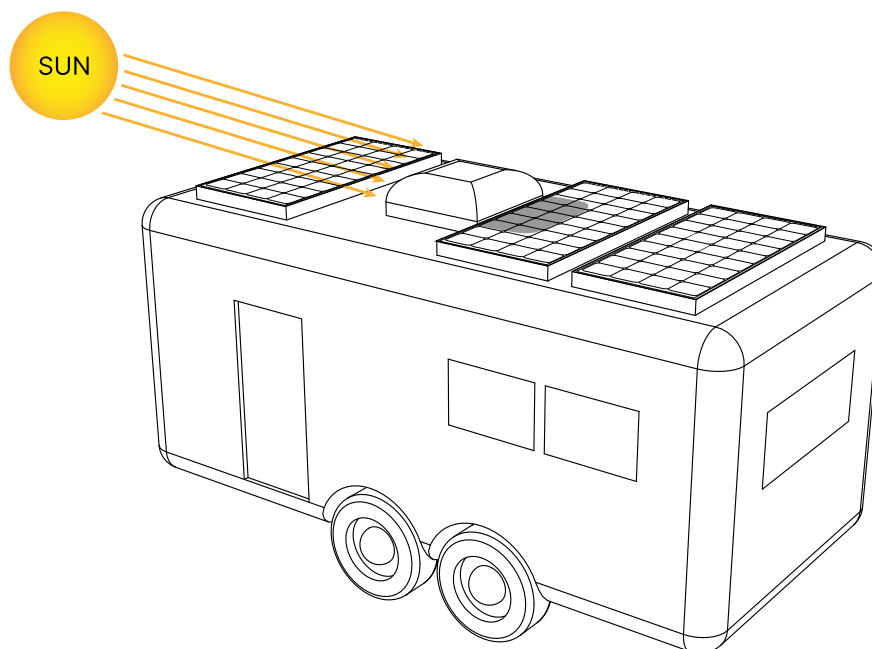


In the southern hemisphere, where the sun consistently resides in the northern half of the sky, positioning your panel to face north guarantees the best angle for solar exposure throughout the day. Conversely, in the northern hemisphere, where the sun remains in the southern half of the sky, facing your panel south ensures the most advantageous angle to capture sunlight effectively throughout the day.

INSTALLATION RECOMMENDATIONS



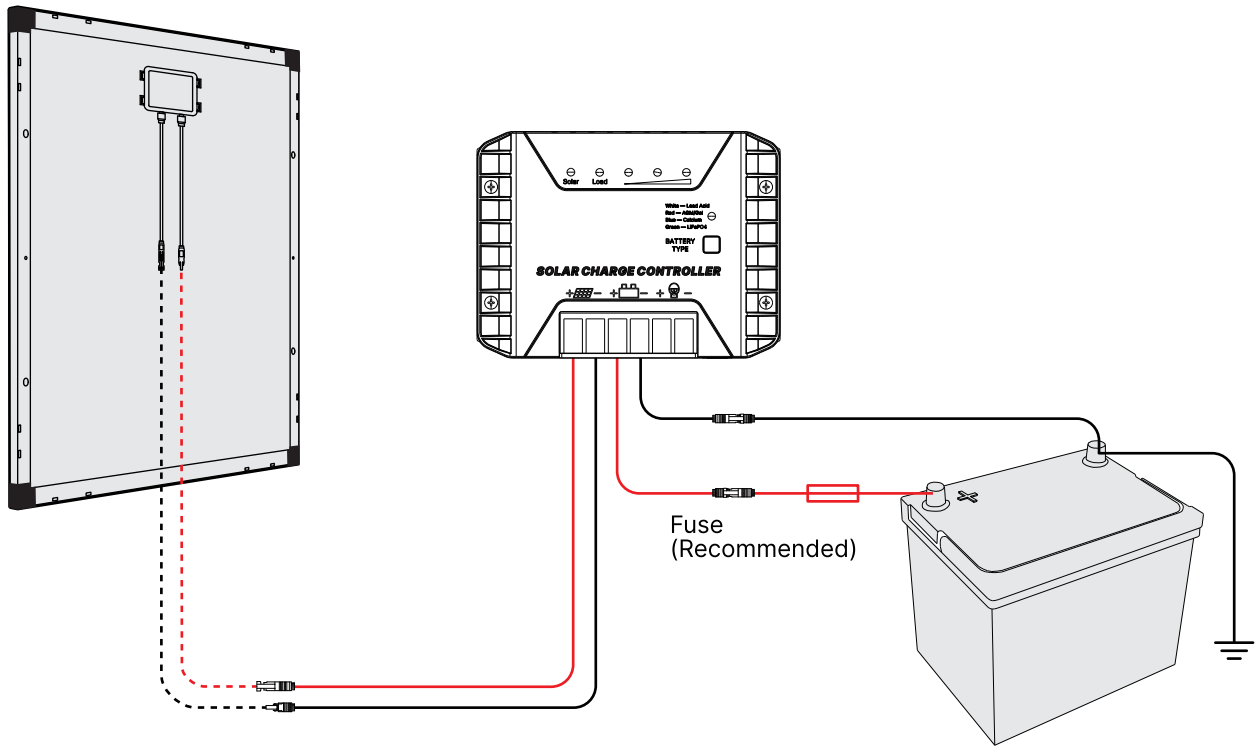
Note: the plastic mounts are not included.




Be mindful of potential shading caused by roof-mounted accessories on your caravan or motor home, as shaded sections of your solar panels can significantly reduce their performance.

Exercise caution to prevent shading in the final installation position. During the installation process, take care to cover the panels with an opaque material to mitigate the risk of inadvertently generating potentially dangerous voltages.

SYSTEM WIRING



TECHNICAL SPECIFICATIONS

MODEL NO.:	SH120SG-FIX	SH200SG-FIX
Wire Size:	2.5mm ² ; 0.9m Long	
Cell Type:	Shingled Module Grade A Monocrystalline Cell	
Max. Power(PM):	120W	200W
Open-Circuit Voltage(VOC):	24.8V	
Short-Circuit Current(ISC):	6.48A	10.8A
Max. Power Voltage(VMP):	19.8V	
Max. Power Current(IMP):	6.07A	10.1A
Max. System Voltage:	1000V	
Max. Series Fuse Rating:	15A	
Power Tolerance:	±5%	
Operating Temperature Range:	-40°C ~ 85°C	
Waterproof Rating:	IP68	
Connector Type:	MC 4	
Certifications:		

TROUBLESHOOTING:

PROBLEM	CAUSE	SOLUTION
Solar panel doesn't work despite sufficient sunlight	Loose connection	Reconnect
	Bad soldering of wires inside the junction box	Contact us
Low power output	Loose connection	Reconnect
	Wrong tilt angle	Adjust the angle to capture direct sunlight.
	Shadow	Remove any shadow covering the panel
	Accumulation of dust	Clean, best on a regular basis
	High operating temperature	Ensure sufficient air circulation beneath the panel

WARRANTY

San Hima ("Manufacturer") hereby provides a warranty to the original purchaser ("User") that its solar panel, when purchased from the manufacturer, an authorized distributor, or dealer, shall be free from defects in material and/or workmanship during normal usage. This warranty is applicable from the date of sale and remains in effect for a duration of 5 YEARS (the "Warranty Period"). It is important to note that this warranty exclusively extends to the original purchaser and is specific to the San Hima solar panel.

San Hima, at its discretion, will either replace the product or issue a refund, provided that the fault is found to have been caused by a design or manufacturing defect that results in the solar panel's failure to perform as described. This limited warranty stands as the sole warranty applicable to this product, setting forth all the responsibilities assumed by San Hima in this regard.

Exclusion:

It is strongly advised that the installation of the solar panel be carried out by adequately qualified technicians; failure to do so will result in the warranty being voided. Additionally, for enhanced clarity, this warranty expressly excludes coverage for defects, failures, and damages arising from the following:

- normal wear and tear.
- inadequate ventilation and insufficient maintenance.
- improper installation and storage.
- incorrect handling and transportation.
- unauthorized repair or modifications.
- intentional or accidental misuse, abuse, and neglect.
- contamination with hazardous substances, radiation, and water (unless explicitly stated otherwise by the Manufacturer to be waterproof).
- exposure to extreme hot or cold temperatures.
- force majeure events, including but not limited to fires, floods, earthquakes, hurricanes, severe weather conditions, wars, and acts of terrorism.
- usage on permanent sites or in commercial displays.

CLAIMS:

If a San Hima product is suspected of being defective, you'll need to provide proof of purchase (e.g. a screenshot of the order) and a picture and a video of the damaged goods in their entirety to sales@sanhima.com. If the product is found to be defective and covered by this limited warranty, the remedy is replacement or refund, at San Hima's option. No charges will be accepted for external labour or materials.