

# How to Test a Solar Panel for Warranty Claim: *Victron BlueSolar and Sunman Panels*

Date: 17 October 2025  
Author: Ariq Syed  
Version: V1

## Equipment required

1. Multimeter: Measure open-circuit voltage.
2. Micro-fibre Cloth: Clean the solar panel surface without scratching, removing dust and dirt before testing.
3. Protective Gloves (optional): Recommended for safety to prevent contact with electrical connections.
4. Peak Sunlight (10am-2pm): Test panels at midday under full sun with no shading and a tilt of 30°-45° for accurate results.
5. Clamp meter: Measures DC current safely by clamping around cables.
6. Notebook: Records Voc and Isc values for comparison to datasheet.



## How to measure Voc from a solar panel with a multimeter

1. Disconnect the Solar panel, leaving two MC4 connectors.
2. Perform testing between 10 AM–2 PM for optimal results. Ensure the panel is fully sunlit with no shading, preferably in clear weather.
3. Position the panel at a 30°–45° tilt, or check online for your region's ideal angle.
4. Clean the surface with a microfibre cloth to ensure accuracy.
5. Connect the red lead to the multimeter's V slot and the black to COM and Set the multimeter to DC Voltage mode.
6. Measure the open-circuit voltage across the positive and negative MC4 connectors. Record the voltage displayed, ensuring the multimeter is on DCV and the reading stabilises within 5–10 seconds.



7. Compare the reading to the panel's datasheet Voc. Values between 90–110% of the datasheet value indicate good condition. If outside this range under peak sunlight, file a warranty claim with the initial check form completed.



## How to measure Isc from a solar panel with a clamp meter

1. Disconnect the Solar panel and locate its positive and negative MC4 connectors.
2. Perform testing between 10 AM–2 PM for optimal results. Ensure the panel is fully sunlit with no shading, preferably in clear weather.
3. Position the panel at a 30°–45° tilt, or check online for your region's ideal angle.
4. Clean the surface with a microfibre cloth to ensure accuracy.
5. Set the clamp meter to DC Amps; zero the reading before measurement
6. Short the MC4 connectors—positive to negative. Clamp around either the positive or negative wire to measure current at peak sunlight conditions.
7. Record the reading after 5–10 seconds, ensuring the meter is in DC mode.
8. Compare the measured current to the datasheet's Isc; values should be 80–105% of the theoretical Isc.
9. If measurement falls outside this range, initiate a warranty claim after completing the initial check form.



## General Product Information

Model Number		Serial Number	
Date of Installation		Date of failure	

Does the unit show any signs of mechanical damage?	<input type="checkbox"/> Yes (No warranty) <input type="checkbox"/> No	
Does the unit have burn marks or melting marks?	<input type="checkbox"/> Yes (No warranty) <input type="checkbox"/> No	
Did the unit suffer mechanical and/or electrical damage due to a lightning shock?	<input type="checkbox"/> Yes (No warranty) <input type="checkbox"/> No	
Did the unit suffer from a reverse polarity connection at the terminals (i.e. were the positive and negative wires accidentally reversed)?	<input type="checkbox"/> Yes (No warranty) <input type="checkbox"/> No	
Has the unit been exposed to excessive dust or dirt buildup?	<input type="checkbox"/> Yes (No warranty) <input type="checkbox"/> No	
Has the unit been damaged due to a high-humidity environment (e.g. coastal area, tropical climate, underwater marine environments)?	<input type="checkbox"/> Yes (No warranty) <input type="checkbox"/> No	
Has the unit suffered from biological infestation (e.g., birds, insects, rodents, mold, or plant growth)?	<input type="checkbox"/> Yes (No warranty) <input type="checkbox"/> No	
Has the unit been dropped, mishandled, or exposed to physical damage during unpacking, handling or installation?	<input type="checkbox"/> Yes (No warranty) <input type="checkbox"/> No	
Is there more than one panel in the system?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are the other panels functioning?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Please provide the rated Voc / Isc results (found on label or product datasheet) verse the tested Voc / Isc results	Rated Voc measured value (V)	
	Rated Isc measured value (A)	
	Tested Voc measured value (V)	
	Tested Isc measured value (A)	

Provide additional fault information or add issues that is not already covered in this RMA form.


RMA lodgement (MI Technical Staff Use Only)

RMA type	<input type="checkbox"/> Warranty claim <input type="checkbox"/> Non-warranty repair or replacement request
RMA lodgement date	
Victron Energy/Sunman RMA Number	
Customer Reference Number	