Recent Changes to Test Methods and Requirements for Solar Energy Kits in IEC TS 62257-9-5 and -9-8

January 2026

The following revisions are being made to the test methods and quality standard for solar energy kits: IEC TS 62257-9-5 and IEC TS 62257-9-8. Thanks to all who provided input that informed these revisions. The changes will simplify solar energy kit testing and certification, which we anticipate will reduce overall costs of testing and certification. Contact VeraSol at testing@verasol.org for more information about the changes.

Timeline

- **December 2024 - January 2025**: IEC published revised test methods and requirements documents (IEC TS 62257-9-5 ed. 5 and IEC TS 62257-9-8 ed. 2).
- **January 2025**: Companies could begin signing VeraSol service orders to prepare for testing to the new test methods.
- **July 2025**: VeraSol began requiring labs to test according to the new methods, and tested products must comply with the revised requirements in IEC TS 62257-9-8.

Major changes

- **Lengthened certification validity**: VeraSol product certificates will be valid for a period of 3 years (previously 2 years)
- **Reduced sample size**: Number of product samples evaluated per test reduced to 2 for certification (QTM) testing. All types of tests (certification, renewal, market surveillance) require the same sample size of n=2.
- **Minimum product stock requirement**: Product samples used for testing are randomly selected from a stock of at least 150 units, regardless of the testing type (certification, renewal, market surveillance) This will allow companies to plan ahead when preparing stock for testing.

Changes to requirements / quality standards (IEC TS 62257-9-8)

- Clarified the distinction between pico-products and SHS kits, so kits with modules rated less than 10.5 W are pico-products, and greater than or equal to 10.5 W are SHS kits. Additional guidance is included for special cases such as kits with multiple small modules.
- Truth-in-advertising tolerance reduced from 15% to 10% for all metrics except light output, which will still be assessed with a 15% tolerance.
- Consumer information requirements are more flexible in terms of how the information is presented for light output and solar run time:
    - For pico-solar products (<10.5 W), the light output and solar run time on the packaging may be presented for either the main lighting or the combination of the main lighting and auxiliary lights. The light output may be presented for each light individually, the main lighting as a unit, or all lights in combination, but would need to align with the presented solar run time.

    - For SHS kits, the solar run time profile requirement may either be presented as:
        - a single combination of all lights on high and the highest power non-lighting appliance (advertised or included; other appliances may be included if desired), or
        - two separate runtimes: one for a combination of all lights on high and separately the individual run time of the highest power non-lighting appliance.

      In either case, for appliances with batteries (such as phones, radios, and torches), the highest power appliance is determined based on the charging power of the appliance.
- The term "manufacturer" is replaced with "company" to avoid ambiguous language and match updated usage in the VeraSol program
- Appliance and PV module labeling requirements reduced where certain specifications aren't valuable to consumers. *Ratings no longer required on user manual/packaging*: power rating and nominal voltage of each light and appliance and the PV module Voc and Isc. *Items no longer required on the PV label*: serial number, date and place of manufacture, maximum system voltage (note: Voc and Isc are still required on the PV label).
- Added a requirement that if runtimes are advertised for appliances that are not included with the kit, the assumed power (or, if run time is specified in terms of full charges, the battery capacity) of the advertised appliances shall be presented and shall be representative of actual appliances that can be found in the market (these could be generic appliances or appliances that the company sells).
- Added a requirement that all PAYG-enabled products include instructions for PAYG system.
- Ports requirements adjusted to make them easier to understand and enforce. The maximum current (or power) and nominal voltage (or voltage range) must now be stated for every output port in the user manual, on the packaging, or on the product.
- Clarified that pack-level safety testing is not required for products with a single-cell lithium battery; cell-level testing is sufficient. Components with two to four single-cell batteries have options for how to meet the pack-level safety testing requirement.
- For lumen maintenance testing, the requirement may be met via the LM-80 method or by being tested to 1000 hours for QTM, AVM, or renewal testing. An extension of the test to 2000 hours may be requested, but is no longer an option to meet the requirements.

Test method simplification and revision (IEC TS 62257-9-5)

- Visual screening procedure no longer includes measurements and recorded information that aren't useful for stakeholders.
- Two tests are now optional: light distribution and charging efficiency. These can be performed upon request. If the charging efficiency test is not performed, default values will be used for the assumed charging efficiency of any appliances that charge from other batteries in the system (such as a radio charging from the main battery).
- Five tests were removed or have reduced applicability: removed PV marking durability (for all products), PV breakage/impact (for all products), PV overvoltage test (for most products), and the screw connections test (for most products), and made PV module partial shading test only applicable to modules greater than 100 W
- Changed the temperature for lithium battery storage tests from 60 °C ± 5 K to 55 °C ± 5 K. In many cases, this can allow the test to be performed without exceeding the battery manufacturer's rated storage temperature.
- Added test procedures and requirements for products advertising "fast-charging" capabilities
- Added a test method for assessing the power consumption of computers and clarified that the power consumption of peripherals (mice, keyboards, etc.) with negligible power requirements does not need to be measured
- Added an additional failure criterion for the strain relief test: "Exposed cores of cables (e.g. due to the cable sheath pulling out of a cord anchorage)."

- Changed test conditions for TVs to better assess the expected power. The brightness will be set to halfway between the maximum brightness and the factory default and the audio will be set to 50% of the maximum setting.
- Updated power consumption and energy capacity values for generic appliances including mobile devices and televisions and added new generic appliance categories. (The increase in the assumed value for energy capacity of a generic smartphone (15 Wh) will impact the combination run times of many products).
- Corrected an issue in the energy service calculations that gave inaccurate results for products designed to step down to a lower setting when the battery is low.
- Added an optional maximum solar operation efficiency measurement to the solar charge test to more accurately estimate the daily energy service (Wh/day) for products that do not fully utilize the PV module generation capacity unless additional loads are plugged in during solar charging.
- Added a step prior to the full battery run time test to ensure the battery has not discharged substantially due to standby loss prior to the start of the test.
- Updated the calculation for *energy removed from the battery until the DUT reaches a low-voltage disconnect* to exclude energy discharged after all appliances, lights, and ports have turned off. This change may slightly reduce the calculated run times and Wh/day values of some products.
- The new test report template will only present findings from IEC TS 62257-9-5. A separate report will be generated by VeraSol to demonstrate compliance with IEC TS 62257-9-8 as part of the certification process.

About VeraSol

An evolution of Lighting Global Quality Assurance, the VeraSol program supports high-performing, durable off-grid products that expand access to modern energy services.

Please visit VeraSol.org for more information.