



VeraSol Product Testing and Laboratory Eligibility Policy

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This document explains how manufacturers can obtain valid solar energy kit test results for use by VeraSol from a qualified test lab, as well as how a test laboratory can become approved to produce test results for solar energy kits that will be accepted by the VeraSol Quality Assurance program.

Product Testing Process

- 1) **Random Sampling (Quality Test Method - QTM¹ testing only):** Samples of the product are selected from warehouses and other locations according to the guidelines described in the latest version of VeraSol's product sampling policy². ***This process will continue to be coordinated through VeraSol with our network of sampling agents.*** VeraSol will pay for the random sampling, but the manufacturer is responsible for shipping the product samples to the test laboratory (this responsibility includes all costs associated with the shipping process, including any import duties, taxes, and other fees).

Note: Random sampling is not a requirement for Initial Screening Method (ISM) testing.

- 2) **Laboratory Testing:** Products are tested according to the latest version of IEC/TS 62257-9-5. (Additional PV tests according to IEC/TS 62257-9-8 are required starting Jan. 1, 2021.) To coordinate laboratory testing, the manufacturer will first contact VeraSol personnel to coordinate the sampling and confirm the required test plan. Prior to the start of testing, the manufacturer will also contract with VeraSol to pay fees to cover product sampling, reporting and support services.

Note: For ISM testing, if a manufacturer prefers to have VeraSol personnel review the test report and issue a cover letter explaining the results, then the test plan must be confirmed with VeraSol and the manufacturer must pay VeraSol fees to cover the cost of reporting and support services. Otherwise, if a manufacturer does not want these additional services and only needs

¹ VeraSol utilizes four different test methods to evaluate products. These include the Quality Test Method (QTM), the Accelerated Verification Method (AVM), the Initial Screening Method (ISM), and the Market Check Test Method (MCM). All four test methods are included in IEC Technical Specification 62257-9-5. The QTM is used to determine whether products meet the program's quality standards. For eligible manufacturers with a history of producing good quality products, the AVM may be used in place of the QTM; the AVM pathway allows manufacturers to complete initial evaluations of products using pre-production samples, thereby enabling products to be launched with quality verification in place. The ISM is used to generate rapid feedback for manufacturers, but is for informative purposes only. For a product to meet the Lighting Global Quality Standards or IEC/TS 62257-9-8 and receive program support, it must undergo the more rigorous QTM or AVM testing. The MCM is used to determine whether the manufacturer of a product that has met the Lighting Global Quality Standards or IEC/TS 62257-9-8 continues to maintain the same level of quality and performance for the units that it delivers to market over time.

² VeraSol's product sampling policy is available for download at <https://verasol.org/publications/product-sampling-policy>

the ISM test results, they may coordinate directly with the test labs for ISM testing without involving VeraSol personnel.

Following initial engagement, if needed, VeraSol will provide the manufacturer with contact information for one or more appropriate test labs to conduct the testing. Manufacturers are welcome to coordinate with a test lab of their choosing, though the lab and test plan must be approved by VeraSol prior to testing commencing. The manufacturer will contract directly with the test lab, including negotiating the price of testing. Additionally, both the manufacturer and the test laboratory need to sign documents confirming that no conflicts of interest (financial or otherwise) or the appearance thereof exist between the manufacturer and the test laboratory.

Approved test labs are listed on the VeraSol Lab Network webpage as approved for conducting tests according to the required test method. If a test lab is interested in conducting testing for VeraSol, they must meet the requirements in Table 1 and apply for approval. Test results will only be approved after the laboratory has completed the Test Laboratory application process, and the VeraSol Quality Assurance team has confirmed that the lab meets the requirements to conduct tests that will be accepted by the VeraSol Quality Assurance Program.

3) **Feedback and Support from VeraSol:** At the completion of testing, to qualify for feedback and/or support from VeraSol and its affiliate programs, the test laboratory must submit the test results to VeraSol (test reports provided directly by the manufacturer will not be considered valid). Based on the test results, VeraSol offers feedback and support to clients ranging from aid in interpreting test reports to issuing Standardized Specifications Sheets.

Table 1. Criteria for test labs to produce valid test results for use by VeraSol.

	Requirements to Conduct: Initial Screening Method (ISM), and / or Market Check Method (MCM)- Primary Check Test [IEC/TS 62257-9-5 and IEC/TS 62257-9-8]	Requirements to Conduct: Quality Test Method (QTM), Accelerated Verification Method (AVM), and/or Market Check Method (MCM)- Secondary Check Tests [IEC/TS 62257-9-5 and IEC/TS 62257-9-8]
Laboratory accreditation requirements	<ul style="list-style-type: none"> Laboratory is currently participating in the VeraSol round robin testing framework and producing accurate results Laboratory implements a knowledge transfer plan to ensure all staff consistently follow testing procedures accurately; lab must keep appropriate documentation specifying how knowledge is transferred to new staff, e.g. a training log and standard operating procedures (SOPs) 	<ul style="list-style-type: none"> Laboratory meets all requirements listed to the left ISO 17025 accreditation to conduct tests according to the latest edition of IEC/TS 62257-9-5 As of January 1, 2021, ISO 17025 accreditation to conduct tests according to the latest edition of IEC/TS 62257-9-8
Laboratory ongoing practice	<ul style="list-style-type: none"> Laboratory is consistently exercising its testing skills; no more than 1 year can pass without testing products, else additional training <i>may</i> be required at the lab’s expense Laboratory notifies VeraSol in the case of key staff turnover; additional training <i>may</i> be required at the lab’s expense 	<ul style="list-style-type: none"> Laboratory meets all requirements listed to the left Minimum capacity recommendation: Laboratory has equipment and personnel to complete the tests in a timely manner, e.g. equipment can test at least six samples in parallel for pico-PV tests and four samples in parallel for SHS kit tests. For certain long-term tests, such as lumen maintenance and battery durability, additional capacity is recommended to allow simultaneous testing of multiple products. The equipment and personnel capacity required by labs will vary with the expected testing volume.
Sampling requirements	<ul style="list-style-type: none"> No requirement for ISM testing Products are randomly sampled from the market by VeraSol personnel or affiliates for MCM testing. 	Random sampling must be conducted by an agent of VeraSol. The sampling procedure is described in the latest version of VeraSol’s product sampling policy. To coordinate sampling events, please contact VeraSol quality assurance at testing@verasol.org .

Laboratory prerequisites upon joining VeraSol Test Lab Network	<ul style="list-style-type: none">• Laboratory obtains training from the VeraSol Quality Assurance team and demonstrates competence with the test methods specified in IEC/TS 62257-9-5 and IEC/TS 62257-9-8; laboratory is to determine funding source for training if not already established• Laboratory successfully completes at least two practice market-check tests within six months of initial training, at laboratory's expense• Laboratory provides accurate results for all tests within the round robin testing framework• Laboratory begins providing results for paid tests within six months of completing practice and round robin tests; an extension can be requested with good reason
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For Test Laboratories: How to Qualify to Produce Results for VeraSol

With the QTM, AVM, MCM and ISM test procedures published in IEC/TS 62257-9-5, qualified test laboratories now have the ability to produce valid test results for use by VeraSol. However, whether or not a particular test laboratory qualifies to produce valid test results for VeraSol according to the procedures in the latest edition of IEC/TS 62257-9-5 is dependent on the criteria listed in Table 1.

Test laboratories that are interested to perform QTM, AVM, or MCM testing (possibly in addition to ISM testing) must contact the VeraSol team (testing@verasol.org) to obtain the VeraSol Test Laboratory application. This application will require the interested test laboratory to submit the following, at a minimum, for consideration:

- **Curricula vitae for all laboratory personnel** that will be involved in testing, as well as a description of the particular tests each person will be involved in;
- A **list of all equipment** that will be used in testing, and the associated specifications sheets for each unique piece of equipment; *and*
- Documentation proving the lab holds the **appropriate accreditation(s)** to conduct the tests (see Table 1).

Once the application is submitted, the VeraSol team will review the application materials and determine if the test laboratory (i.e., applicant) is eligible to conduct tests according to the latest edition of IEC/TS 62257-9-5 for use by the VeraSol program. Laboratories will be required to have key personnel participate in training and/or to otherwise demonstrate competence with the test methods specified in IEC/TS 62257-9-5. If the test laboratory is approved, VeraSol will expect the test laboratory to:

- Sign a memorandum of agreement (MOA) with the VeraSol program that specifies the terms of the relationship between the laboratory and the VeraSol program and includes a requirement to disclose any conflicts of interest;
- Submit the product test result(s) to the VeraSol team in the format specified by VeraSol after testing is completed (in cases where manufacturers want their product's test results to be considered by the VeraSol Quality Assurance program). Test reports must be professionally written in English and be of consistently high quality, requiring at most only minor revisions by the VeraSol team;

VeraSol Product Testing and Laboratory Eligibility Policy

- Answer any questions related to the test report for the product and provide supporting raw test data to the VeraSol team, as necessary;
- Participate in the VeraSol round robin testing framework (the laboratory will not need to conduct more than nine (9) individual round robin tests in a calendar year); *and*
- Submit updated materials related to laboratory qualifications on request on a periodic basis (e.g. every two years).

If it is determined that the laboratory does not meet the necessary requirements, the lab will receive a letter that includes an explanation of the decision and a summary of the deficiencies that need to be addressed if the lab wishes to achieve approved status. Labs would be free to reapply once they have addressed any issues raised in the response letter.

Test laboratories that intend to conduct ISM only for off-grid lighting manufacturers must meet the specified qualifications (see Table 1). Test laboratories that do not hold a current ISO 17025 accreditation but are hoping to participate in the VeraSol round robin testing framework should send inquiries to the VeraSol QA team.

For All Test Laboratories: How to Maintain Status in the VeraSol Test Lab Network

After initial qualification, continued provision of high quality, timely test reports is required to remain in the VeraSol Test Lab Network. A laboratory may be removed from the VeraSol Test Lab Network if they demonstrate the following:

- A year lapses without testing and without an acceptable reason;
- Significant repeated mistakes;
- Repeatedly delivering sub-standard services,
- Repeatedly providing delayed results with no acceptable reason; *or*
- Other issue identified as means to be removed from the VeraSol Test Lab Network within the MOA between the laboratory and VeraSol.

A warning shall be issued by VeraSol in writing prior to removing a laboratory from the network. The laboratory may be able to take action addressing the identified issue(s) to avoid removal from the Test Lab Network. If helpful, it is possible that a laboratory could obtain additional training at their own expense to address the issue (at VeraSol's discretion).

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. VeraSol builds upon the strong foundation for quality assurance laid by the World Bank Group and expands its services to encompass off-grid appliances, productive use equipment, and component-based solar home systems. Like Lighting Global Quality Assurance, the VeraSol program is managed by CLASP in collaboration with the Schatz Energy Research Center at Humboldt State University. Foundational support is provided by the World Bank Group's Lighting Global program, UKaid, IKEA Foundation, Good Energies Foundation, and others.

Please visit VeraSol.org for more information.