



VeraSolSM

AC Charger Safety Approval

Version 1.0
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Background

The applicable Quality Standards¹ include safety requirements for AC chargers that are included with off-grid solar products. The language in the applicable Quality Standards is as follows:

“Any *included* AC-DC charger carries approval from a recognized consumer electronics safety certification organization.”

“Approved marks: UL, CE TÜV Rheinland, CCC, or similar, with accompanying valid documentation of testing by an accredited test laboratory.”

The purpose of this policy document is to provide information about safety requirements for AC chargers and how products with AC chargers may comply with the Quality Standards.

UL and CE markings are the most common electronic safety regulator approval markings found on AC chargers relevant to off-grid lighting products. The UL and CE markings on these AC chargers indicate compliance with the UL 1310 and EN/IEC 60950-1 or EN 62368-1:2014 safety standards, respectively. Less commonly seen safety approval markings, such as China Compulsory Certificate (CCC) and TÜV Rheinland, are also found on AC chargers relevant to off-grid lighting products. CCC and TÜV Rheinland markings on these AC chargers indicate compliance with the GB4943 and EN/IEC 60950-1 safety standards, respectively.

VeraSol Policy

Products meet the applicable Quality Standards if their included AC charger has a current UL, CE, CCC, or TÜV Rheinland safety approval, and the veracity of the approval can be verified. Safety approvals from other similar recognized consumer electronics safety regulators may be acceptable and will be considered on a case-by-case basis. Manufacturers must provide a test certificate and/or test report showing that their included AC charger has been tested against the appropriate safety standards and that the test results are current and valid. VeraSol verifies the veracity of AC charger safety approvals as per the procedures outlined in Appendix A, below.

¹ VeraSol began referencing *IEC TS 62257-9-8: Integrated systems – Requirements for stand-alone renewable energy products with power ratings less than or equal to 350 W* in place of the Lighting Global Quality Standards in 2020. See <https://verasol.org/updates/transition-to-iec-ts-62257-9-8> for detailed transition information. See the [Change Log for Quality Standards](#) for details on new requirements and the differences between the Standards.

Appendix A – Procedures for Verification of AC Chargers

UL

The UL certification status will be verified by checking the charger’s UL File Number details in the UL Online Certification Directory (<http://database.ul.com/>).

CE

1. The charger’s test certificate must show the standard tested against as EN 60950-1:2006, IEC 60950-1:2005 or EN 62368-1:2014.
2. The test certificate must be current and the manufacturer and model number on the charger must match those listed on the test certificate.
3. The test certificate must be able to be authenticated through the test lab’s website system or by querying the test lab.
4. The test lab must have a valid ISO/IEC 17025 accreditation certificate that includes the relevant test methods within its scope at the time that the tests are conducted. This must be verifiable through an ILAC affiliated ISO/IEC 17025 accrediting body.
5. The test lab’s ISO/IEC 17025 accreditation must list that it is accredited to perform testing to EN/IEC 60950-1 or EN 62368-1:2014.

CCC

The CCC certification status will be verified by checking the test certificate details in the Chinese government’s China Quality Certification Centre (<https://www.cqc.com.cn/www/english/>).

TÜV Rheinland

The TÜV Rheinland certification status will be verified by checking the test certificate ID number and details in TÜV Rheinland’s Certipedia website (<http://www.certipedia.com/>).

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.