

TECHNICAL SPECIFICATION

**Recommendations for renewable energy and hybrid systems for rural
electrification –
Part 12-1: Laboratory evaluation of lamps and lighting appliances for off-grid
electricity systems**





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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**RECOMMENDATIONS FOR RENEWABLE ENERGY
AND HYBRID SYSTEMS FOR RURAL ELECTRIFICATION –****Part 12-1: Laboratory evaluation of lamps and
lighting appliances for off-grid electricity systems**

FOREWORD

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- the required support cannot be obtained for the publication of an International Standard, despite repeated efforts, or
- the subject is still under technical development or where, for any other reason, there is the future but no immediate possibility of an agreement on an International Standard.

Technical Specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC 62257-12-1, which is a Technical Specification, has been prepared by IEC technical committee 82: Solar photovoltaic energy systems.

This third edition cancels and replaces the second edition published in 2015. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition.

Title modified.

- Annex A and Annex B were combined into a single Annex A to eliminate duplicate tables and simplify the document. Annex A in this third edition now covers recommendations and requirements for both market support programmes and bulk procurement programs. Annex A provides specific examples for quality standards, warranty requirements, and performance criteria for off-grid lighting products.

This Technical Specification is to be used in conjunction with other parts of the IEC 62257 series.

The text of this Technical Specification is based on the following documents:

Enquiry draft	Report on voting
82/1617/DTS	82/1642A/RVDTS

Full information on the voting for the approval of this Technical Specification can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 62257 series, under the general title *Recommendations for renewable energy and hybrid systems for rural electrification*, can be found on the IEC website.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- transformed into an International Standard,
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

The IEC 62257 series provides support and strategies for organizations and institutions involved in rural electrification projects. It documents technical approaches for designing, building, testing, and maintaining off-grid renewable energy and hybrid systems with AC nominal voltage below 1 000 V, and DC nominal voltage below 1 500 V.

These documents are recommendations:

- to support buyers who want to connect with good quality options in the market,
- to choose the right system for the right place,
- to design the system,
- to operate and maintain the system.

These documents are focused only on technical aspects of rural off-grid electrification concentrating on but not specific to developing countries. They are not all inclusive to rural electrification. The documents do not describe a range of factors that can determine project or product success: environmental, social, economic, service capabilities, and others. Further developments in this field could be introduced in future steps.

This consistent set of documents is best considered as a whole with different parts corresponding to items for safety, sustainability of systems, and affordable costs. The main objectives are to support the capabilities of households and communities that use small renewable energy and hybrid off-grid systems and inform organizations and institutions in the off-grid power market.

The purpose of this document is to specify laboratory test methods for evaluating the quality assurance of lamps and lighting appliances for off-grid electricity systems, including product specifications and tests. In addition to supporting the selection of products by project developers and implementers, quality assurance can help market support organizations, manufacturers, and governments achieve the goals they have for lighting appliances in off-grid applications.

This part of IEC 62257 presents a quality assurance framework that includes product specifications (a framework for interpreting test results) and test methods.

The intended users of this document are:

- Market support programmes that support the off-grid lighting market with financing, consumer education, awareness, and other services;
- Manufacturers and distributors that need to verify the quality and performance of products;
- Bulk procurement programmes that facilitate or place large orders of products; and,
- Trade regulators such as government policymakers and officials who craft and implement trade and tax policy.

The tests and inspections are designed to be widely applicable across different markets, countries, and regions.