



EEDC 5 (4719) P3
IEC TS 62257-9-5:2016

DRAFT TANZANIA STANDARD

(Draft for Stakeholders' comments only)

Recommendations for renewable energy and hybrid systems for rural electrification –

Part 9-5: Integrated systems - Selection of stand-alone lighting kits for rural electrification

TANZANIA BUREAU OF STANDARDS

National Foreword

1. Introduction

This draft Tanzania Standard is being prepared by the Solar Power System Technical Committee (EEDC 5), under the supervision of the Electrical Engineering Divisional Standards Committee (EEDC)

This draft Tanzania Standard is the identical adoption of IEC TS 62257-9-5:2016 (Ed.3.0) *Recommendations for renewable energy and hybrid systems for rural electrification – Part 9-5: Integrated systems - Selection of stand-alone lighting kits for rural electrification* prepared by TC 82 - Solar photovoltaic energy systems and published by the International Electrotechnical Commission.

2. Preamble

EEDC 5 (4719)P3/IEC TS 62257-9-5:2016 applies to stand-alone rechargeable electric lighting appliances or kits that can be installed by a typical user without employing a technician. It presents a quality assurance framework that includes product specifications, test methods, and standardized specification sheets. This edition includes the following significant technical changes with respect to the previous edition:

- battery test methods updated to harmonize with existing IEC standards, sequence of testing changed to allow the battery to be charged using the product's charge controller prior to the full-battery run time test;
- limits on total series resistance of the test apparatus added to test procedures.

3. Terminology and conversion

Some terminologies and certain conventions are not identical with those used in Tanzania standards; attention is drawn especially to the following: -

- 1) The comma has been used as a decimal marker for metric dimensions. In Tanzania Standards, it is current practice to use “full point” on the baseline as the decimal marker.
- 2) Where the words “International Standard(s)” appear, referring to this standard they should read “Tanzania Standard(s)”.

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TECHNICAL SPECIFICATION



**Recommendations for renewable energy and hybrid systems for rural electrification –
Part 9-5: Integrated systems – Selection of stand-alone lighting kits for rural electrification**



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IEC TS 62257-9-5:2016-06(en)

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INTRODUCTION

IEC 62257 (all parts) provides support and strategies for 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 500 V, DC nominal voltage below 750 V and nominal power below 100 kVA.

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, and
- 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 considered as 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 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 part of IEC 62257 is to specify quality assurance strategies for stand-alone lighting kits, including product specifications, tests, and a standardized specification sheet format. 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 off-grid lighting projects.

The intended users of this part of IEC 62257 are listed below. In some clauses and subclauses of this part of IEC 62257, a description of the application of the subclause contents is offered to help provide context for each type of user.

- a) Market support programmes are programmes that support the off-grid lighting market with financing, consumer education, awareness, and other services. Market support programmes often use quality assurance to qualify for access to services such as:
 - greenhouse gas reduction certifications or other incentives,
 - access to financing (trade or consumer finance),
 - use of a buyer seal and certification (government or non-governmental institutional backing, consumer or "business to business" seals),
 - participation in a public product information database (e.g. standardized specification sheets),
 - access to a business network or trade group,
 - business support and development services,
 - access to market intelligence, and
 - participation in consumer awareness campaigns.
- b) Manufacturers and distributors need to verify the quality and performance of products from different batches and potential business partners. Manufacturers and distributors often use quality assurance plans or requirements to:

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RECOMMENDATIONS FOR RENEWABLE ENERGY AND HYBRID SYSTEMS FOR RURAL ELECTRIFICATION –

Part 9-5: Integrated systems – Selection of stand-alone lighting kits for rural electrification

1 Scope

This part of IEC 62257, which is a Technical Specification, applies to stand-alone rechargeable electric lighting appliances or kits that can be installed by a typical user without employing a technician.

This part of IEC 62257 presents a quality assurance framework that includes product specifications (a framework for interpreting test results), test methods, and standardized specification sheets (templates for communicating test results).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 60891:2009, *Photovoltaic devices – Procedures for temperature and irradiance corrections to measured I-V characteristics*

IEC 60904-1:2006, *Photovoltaic devices – Part 1: Measurement of photovoltaic current-voltage characteristics*

IEC 61056-1:2012, *General purpose lead-acid batteries (valve-regulated types) – Part 1: General requirements, functional characteristics – Methods of test*

IEC 61215 (all parts), *Terrestrial photovoltaic (PV) modules – Design qualification and type approval*

IEC 61427-1:2013, *Secondary cells and batteries for renewable energy storage – General requirements and methods of test – Part 1: Photovoltaic off-grid application*

IEC 61672-1, *Electroacoustics – Sound level meters – Part 1: Specifications*

IEC 61951-2:2011, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Portable sealed rechargeable single cells – Part 2: Nickel-metal hydride*

IEC 61960:2011, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Secondary lithium cells and batteries for portable applications*

IEC 62087-1:2015, *Audio, video, and related equipment – Determination of power consumption – Part 1: General*

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