IEC Quality Assessment System for Electronic Components (IECQ System)

Rules of Procedure –
Part 8: IECQ Scheme for LED Lighting
IECQ PUBLICATION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

Rules of Procedure –
Part 8: IECQ Scheme for LED Component Products

FOREWORD

This publication has been prepared by the IECQ Management Committee (MC) of the IEC Quality Assessment System for Electronic Components (IECQ).

This publication is directly related to the IECQ System management Basic Rules contained in publications (IEC CA 01 + IECQ 01-S), IEC Harmonised Basic Rules (IEC CA 01) plus the IECQ Supplement (IECQ 01-S).

This editorial edition 2.1 of IECQ 03-8 replaces the 2.0 edition IECQ 03-8. Main changes to this edition include:

- Inclusion into the testing facilities provision for CBs with their own Testing Laboratory
- Inclusion of technical capability for assessment teams
- Clarification of application and inclusion of automotive sector
- Clarification on application process
- Align with the newly introduced IEC CA 01, IEC Harmonised Basic Rules Edition 2.0.
- Update all references to the former IECQ 01 document which is now replaced by combined documents known as IECQ System management Basic Rules (IEC CA 01 + IECQ 01-S), IEC Harmonised Basic Rules (IEC CA 01) plus the IECQ Supplement (IECQ 01-S).
- Update Normative references with IEC policy.

Demand for use of solid state, in particular, LED (Light Emitting Diode) technology for general and specific lighting applications continues to grow. Along with demand are the concerns over quality and reliability of electronic components, parts and assemblies. While international standards exist that address safety requirements, including interoperability, along with approval and certification schemes that aim to provide assurance that these standards are met, manufacturers of components and assemblies need to address issues that are much broader than those covered by standards when controlling their supply chain manufacturing processes.

The IECQ Scheme for LED Component Products is part of the generic IECQ Approved Component Scheme and provides a valuable supply chain tool that gives assurance that performance requirements of declared Standards and Specifications for components, assemblies and modules used in the manufacture and supply of Solid-State Lighting systems (with focus on LED technology) complies with Component and Process Specifications that embody requirements of:

- safety and interoperability Standards;
- specific performance criteria associated with the component;
- environmental criteria;
- manufacturing and process controls;
- material and supply chain controls;
- design change control;
- material and component traceability;
• sample selections during 3rd party factory audits. (Ensuring that test samples are selected by CB Auditor and not selected by the manufacturer itself);
• test samples being taken from mass production and not from the small/pilot production or hand-made samples; and
• others.

In line with the approved scope of the IECQ System, the IECQ Approved Component Scheme IECQ LED Lighting Certification can be used to certify manufacturers and suppliers of electronic components and assemblies used in the production of LED lamps, luminaires and associated LED ballasts/drivers.

As with all IECQ Approved Components, a Component specification is to be prepared according to the Annex E of IECQ 03-3.

Therefore in noting the existence of many international standards, including IEC International Standards, these form but a small portion of the overall specification for electronic components and assemblies associated with LED lamps and luminaires.

In noting that various aspects of LED components and associated LED electronic ballasts/drivers may be covered by testing regimes beyond IECQ, for example under the IECEE CB Scheme, such CB Test Certificates and Reports provide valuable evidence of compliance with those attributes addressed by the relevant IEC International Standard as such form an integral part of the manufacturer's compliance dossier for which the IECQ Certification Body will use and recognize when conducting assessments and audits of the manufacturer.

The text of this publication is based on the following documents:

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Full information on the approval by the IECQ MC of this publication can be found in the report indicated in the above table.

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INTRODUCTION

Taking into account the object of the International Electrotechnical Commission (IEC) as given in Article 2 of the Statutes, the particular object of the IECQ System, operated in conformity with the Statutes and under the authority of the IEC, is to facilitate international trade in electronic components of assessed quality, by providing a global framework for independent assessment and certification.

The object is achieved by the implementation of quality assessment procedures in such a manner that organizations, processes, and components certified as conforming to the requirements of an applicable standard or specification, are acceptable to all participants.

The IECQ Schemes provide organizations with a “Supply chain verification tool” for seeking assurance that electronic components, assemblies, processes and related materials conform to declared technical standards and specifications.

IECQ Approved Components Certification may be applied to electronic Components Products, related materials and assemblies for which a technical standard or specification exists or a client specification accepted for use in the IECQ System. For example this may cover but not be limited to; silicon wafer slabs, integrated and discrete electronic components, connectors, printed wiring boards, components/products/materials that assist in the construction, installation and use of electronic components. E.g. ceramic insulators, heat sinks etc.

Organizations that are holding IECQ Approved Components Certification demonstrate to the international market place that their organization and facilities through testing and other verification criteria comply with the requirements of the IECQ System and the relevant declared technical standards and specifications for their scope of activity. Components products, related materials and assemblies produced within the defined scope of activity of the IECQ Approved Components Certification are recognized as IECQ certified and can be released with a Declaration of Conformity and confidence that the components are produced using manufacturing processes that have been successfully assessed and under constant surveillance by an independent, internationally accepted IECQ Certification Body.
1 Scope

This publication contains the Rules of Procedure for the IECQ Scheme for LED Component Products Certification, which also includes other Solid-State Lighting (SSL) technologies.

While this document refers to the IECQ Scheme for LED Component Products, it is intended that it includes other types of SSL technologies, including LED and OLED, from here on throughout the document referred to as LED lighting.

NOTE LED is a technology and OLED is another. Perhaps in the future “PLED” may be common, i.e. a plastic or “printed LED”.

The IECQ Scheme for LED Component Products covers electronic components, associated materials and assemblies (including modules) for use within SSL application.

These IECQ Scheme for LED Component Products Rules of Procedure are to be used in conjunction with applicable IECQ System management Basic Rules (IEC CA 01, IECQ 01-S), General Rules of Procedure (IECQ 03-1).

This publication is based on the general Rules of Procedures for the Approved Component Scheme (IECQ 03-3) and includes changes or additions that relate specifically to the LED lighting industry, as such this publication takes precedence over IECQ 03-3.

This publication may also be supplemented by IECQ Operational Documents (OD) as approved for use by the IECQ Management Committee, see www.iecq.org for latest publications.

2 Application

The IECQ Scheme for LED Component Products is intended for use as a means of 3rd party verification of claims of compliance with safety and performance requirements of components, component parts, assemblies and modules associated with Solid-State Lighting (SSL) applications, principally LED lighting.

LED lighting covered by the IECQ Scheme for LED Component Products includes but is not limited to applications involving:

- Household and domestic lighting
- Commercial and industrial
- Road-way street lighting
- Hospital and medical
- Automotive
- Others

Purchasers of components or services associated with the manufacturing and assembly of LED lighting assemblies may use this IECQ Scheme for LED Component Products as assurance that characteristics covering safety and performance, reliability and quality of products purchased are in compliance with the stated technical specification(s) and applicable quality standard(s) thru the evaluation and certification of manufacturers of electronic components, assemblies and modules for LED lighting.