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Environmental aspects for lighting - Literature review on lighting products and systems

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IEC TR 63645 has been prepared by IEC Technical Committee 34: Lighting. It is a Technical Report.

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

Draft	Report on voting
34/1421/DTR	34/1438/RVDTR

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this Technical Report is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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

– reconfirmed,
– withdrawn, or
– revised.

INTRODUCTION

Increasingly, there is a focus on preserving the natural environment for the good of future generations. For this to be achieved, efficient use of energy and materials throughout the life cycle of every product and process is essential to conserve the world's finite natural resources. In addition, release of substances and materials that might be harmful for the environment or induce climatic changes must be avoided or minimized. From conception to the end of life of a product, the environmental impact of all the relevant processes should be considered, including how materials are disposed of or recovered for future use.

To contribute to conserving natural resources, manufacturers and suppliers of lighting products are implementing environmentally conscious design involving:

– efficient use of energy and materials in the manufacture of products;

– phasing-out or minimizing use of hazardous substances or materials;

– at the end of product life, sorting and recycling materials for future use.

Environmental product declarations and environmentally conscious design are being increasingly required, and in some instances mandated. These can take several forms, for example, Type II (self-declaration) or Type III (third-party declaration) environmental declarations, or material declarations.

Green Public Procurement is a process defined by the European Commission, which can be applicable and/or environmentally conscious design as part of ISO 14001 certification. Some countries and regions are actively striving for environmental conservation, for example, the European Union through its Ecodesign Directive and China through Ecodesign Initiative. Systematic demands for environmentally conscious design will be required by most, if not all, lighting product customers, in the medium term.

The literature review in this document covers environmental aspects related to lighting products and is intended to provide a focused inventory of references that will assist with access to relevant documents on standardized environmental strategies, techniques, and reporting.

The information available can help to facilitate improved product environmental performance, foster effective communication using common references and terminology for environmental information throughout the supply chain, and help identifying future standardization needs related to environmental aspects.

1 Scope

This document provides a comprehensive range of environment related information sources to assist with understanding, assessing, and advancing the environmental performance of lighting products.

2 Normative references

There are no normative references in this document.

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

– IEC Electropedia: available at https://www.electropedia.org/
– ISO Online browsing platform: available at https://www.iso.org/obp

3.2 Abbreviated terms

3.2.1 Abbreviated terms - Technical

CE	circular economy
CFP	carbon footprint of a product
CRM	critical raw material
EEE	electrical and electronic equipment
ECD	environmentally conscious design
EOL	end of life
EPD	environmental product declaration
ERP	energy related product
EUP	energy using product
GPP	green public procurement
GWP	global warming potential
LCA	life cycle assessment
LCI	life cycle inventory
LCIA	life cycle impact assessment
MD	material declaration
ME	material efficiency
PCR	product category rules
PEP	product environmental profile
PSR	product specific rules
RSL	reference service life