



Engineering Standard

Mandatory

E&M Systems - Lighting

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1 Purpose

- 1.1 The purpose of this standard is to detail the functional requirements for DLR lighting assets and assist in continually improving the sustainability & performance of its assets
- 1.2 DLR is currently operating in an environment of increasing costs due to increases in energy prices and declining natural resources. In addition, DLRL faces the challenge to meet environmental targets set by emerging legislation in the UK and EU. In order to maximise resource utilisation within the business, it is becoming increasingly important to minimise the consumption of energy.
- 1.3 This standard details the requirements that are either specific to DLR, or not covered in British, European, International or other recognised Standards and code of practice.

2 Scope and Application

- 2.1 This standard applies to all lighting equipment and associated controls, including emergency lighting, at all DLR premises.
- 2.2 This standard includes within section 4.7 the minimum acceptable requirements for RAMS, asset life and asset specific documentation.
- 2.3 This standard applies to all new assets and all modifications to existing assets from the issue date.
- 2.4 The requirements of LU Standard 1-066 shall be used when undertaking lighting works on DLR operated LU managed premises.
- 2.5 Retrospective application of this standard is allowed, unless otherwise directed by the DLRL Technical Content Manager.
- 2.6 The requirements of this standard shall be adhered to by all those involved in specifying, designing, manufacturing, constructing, installing, testing and commissioning assets within the scope of this standard.
- 2.7 The requirements of this standard shall cover the asset lifecycle, up to and including decommissioning and disposal.
- 2.8 When a modification to an existing asset is minor and compliance with this standard would be prohibitively expensive, a derogation shall be applied for in accordance with BCP-09 Management of DLR Standards.



- 2.9 In the event that any clause of this standard is considered ambiguous, then clarification shall be sought from the DLRL Technical Content Manager in accordance with BCP-09 Management of DLR Standards.
- 2.10 Luminaire manufacturers and suppliers for use on DLR will in future be controlled under a PAN-TfL framework and any resulting requirements shall be complied with.
- 2.11 In the event that any clause of this standard conflict with another DLR standard, British, European, International or other recognised Standard, then clarification shall be sought from the DLRL Head of Engineering in accordance with BCP-09 Management of DLR Standards.
- 2.12 In the event that any clause of this standard conflicts with a contract requirement, then clarification shall be sought from the DLRL Head of Engineering in accordance with BCP-09 Management of DLR Standards.
- 2.13 Any Written Notice attached to this standard either supplements the contents of this standard or clarifies an existing clause.
- 2.14 References to particular EC Directives and Regulations, Acts of Parliament, Statutory Instruments or Common Law are made only if the subject demands them.
- 2.15 Users of this standard are bound by all the relevant requirements of the law, regardless of whether or not there is any reference to them in this document.

3 Responsibilities

- 3.1 Users of the DLR Engineering Standards are responsible for compliance with the requirements of the DLR Engineering Standards. In the event that compliance cannot be achieved, users of the DLR Engineering Standards are responsible for applying for a derogation from the requirement(s) in accordance with BCP-09. Users of the DLR Engineering Standards are also responsible for compliance with the requirements of the relevant British, European, International or other recognised Standards.
- 3.2 The DLRL Head of Engineering is the custodian of this standard. Clarification to users on any clause that is considered ambiguous should be sought from the Technical Content Manager
- 3.3 The Technical Content Manager is responsible for ensuring that the standard is periodically reviewed and revised as necessary. The periodic review shall include any related new or revised British, European, International or other recognised Standards and code of practice.



4 Requirements

4.1 Applicable British and other recognised Standards

4.1.1 References in this standard are made to latest editions unless specific editions are cited.

4.1.2 The list of references below and the references quoted in this standard are included for informational purposes only and should not be regarded as an exhaustive list.

4.1.3 Where any conflicts arise between published standards and this Engineering Standard, compliance with this document shall take precedence except where a breach of law would arise. Any conflicts are to be raised with DLRL Head of Engineering via the Project Manager and cleared before work commences, with this as the basis of any agreement.

Health and Safety at Work Etc Act 1974

Climate Change Act 2008

Equality Act 2013

The Clean Neighbourhoods and Environment Act 2005

Sustainable & Secure Buildings Act 2004

Energy Act 2013

Construction (Design and Management) Regulations 2007

The Construction Product Regulations 2013

The Building Regulations Approved Document 7 (Materials and Workmanship) 2013

The Building Regulations Approved Document L (Conservation of fuel and power) 2013

Regulatory Reform (Fire Safety) order 2005

Energy Performance Directive (2002)

Artificial Optical Radiation Directive 2010

DLR-ENG-STD-ES-601 Electrical Power Supplies

DLR-ENG-STD-ES-602 Building and Other Services

DLR-ENG-STD-ES-603 Tunnel Systems

BS 5266-1:2011 Emergency lighting. Code of practice for the emergency escape lighting of premises



BS 5266-2:1998 Emergency lighting. Code of practice for electrical low mounted way guidance systems for emergency use.

BS 5489:2013 Code of Practice for the design of road lighting – lighting of roads and public amenity areas

BS EN 60598 - Luminaires. Particular requirements. Recessed luminaires

BS EN 60598-2-22 - Luminaires. Particular Requirements – Luminaires for Emergency Lighting

BS EN 81 Safety Rules for the construction and installation of lifts

BS EN 60598-1:2008 Luminaires – General requirements and tests

CIBSE/SLL Code for Lighting, 2012

CIBSE Lighting Guide 03 The Visual Environment for Display Screen Use

CIBSE Lighting Guide 06 The Outdoor Environment

CIBSE Lighting Guide 07 Office Lighting

CIBSE Lighting Guide 12 Emergency Lighting Design Guide

CIBSE guide M Maintenance Engineering and Management

Institute of Lighting Professionals guidance notes

DLR Station Design Guide – Stage 2 Report (September 2009, Revision 05), Weston-Williamson/GIA Equation

LUL 1-066 A3 - Lighting of London Underground Assets

LUL G-073 A1 – Electrical Guidance Document

BS EN 12464-1:2011 Light and Lighting - Lighting of work places - Part 1: Indoor work places

BS EN 12464-2:2007 Lighting of work places - Part 2: Outdoor work places

RIS-7700-INS - Rail Industry Standard for Station Infrastructure

RIS-7702-INS - Lighting at Stations

GIRT7019 – Requirements for lighting in railway tunnels

A guide to the specification of LED lighting products 2012 - published by the Lighting Industry Liaison group



4.2 Minimum criteria required for products procurement

- 4.2.1 Before procuring any form of lighting asset for use on DLR the following criteria must be considered.
- 4.2.2 All lighting products purchased should where practicable meet the criteria set out in the Energy Technology Criteria List to ensure they qualify for the Enhanced Capital Allowance (ECA) as set out in the ECA scheme administered by the Department of Energy & Climate Change. ...
- 4.2.3 The European Union's CE mark and relevant directives are being undermined by non-complaint 'CE marked' imports. As such the relevant checks must be made before procuring.
- 4.2.4 It is recommended that any lighting product procured for use on DLR should observe the notes set below and as such the product manufacturer should be able to provide evidence as necessary.

Responsible Sourcing

Responsible Sourcing of Construction Products provides a holistic approach to managing a product from the point at which a material is mined or harvested in its raw state through manufacture and processing, through use, re-use and recycling, until its final disposal as waste with no further value. Preference would be given to products for which evidence of traceability, reliability, post sales service and a low carbon footprint of manufacture and delivery can be provided.

Embodied Carbon

Embodied carbon also known as embodied energy, refers to the quantity of carbon (and other greenhouse gases) produced by all of the activities associated with a production process including extraction, transportation and disposal. Preference would be given to products with the lowest value of embodied carbon.

Construction Product Regulations 2013 (CPR)

Preference would be given to lighting products that best comply with the seven basic requirements as laid out in the CPR 2013, in relation to:::

- mechanical resistance and stability
- safety in case of fire
- hygiene, health and the environment
- safety and accessibility in use
- protection against noise