

TECHNICAL SPECIFICATION



AMENDMENT 1

Lighting systems – General requirements

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LIGHTING SYSTEMS – GENERAL REQUIREMENTS

AMENDMENT 1

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Amendment 1 to IEC TS 63116:2021 has been prepared by IEC technical committee 34: Lighting.

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

Draft	Report on voting
34/1010/DTS	34/1050/RVDTS

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 Amendment 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/.

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4 General

Replace, in the last paragraph "Clause 5 to Clause 10" with "Clause 5 to Clause 11".

9 Performance and functionality

9.1 General

Add, at the end of the paragraph, the following new text:

Reporting of such characteristics shall comply with the requirements of Annex A.

9.2 Adaptive characteristics

Replace, in the second bullet list item "(e.g. dimming (flux variation), changing colour and timing)" with "(e.g. adjustment of light output level (dimming and brightening), adjustment of light spectrum (colour or correlated colour temperature (CCT) tuning or both) and timing)".

10 Instructions for use

Add, at the end of the first paragraph, the following new paragraph:

All available types and methods of user interfaces to control the lighting systems shall be provided in the instructions for use.

Add, at the end of Clause 10, the following new Clause 11:

11 Classification of lighting systems

11.1 General

According to the system structure, lighting systems can be classified into three categories, as follows:

- lighting systems consisting of standalone luminaire(s);
- autonomous lighting systems;
- centrally controllable lighting systems.

See 11.2 to 11.4 for the description of the different categories.

See 11.5 for the typical capacities of lighting systems in different categories.

11.2 Lighting system consisting of standalone luminaire(s)

A lighting system consisting of a standalone luminaire is a luminaire that does not communicate with other luminaires or a central controller for setting light properties (e.g. on/off, dimming) or for the exchange of information. It can have the capability to communicate with other devices for setting configuration parameters or setting light properties (e.g. on/off, dimming) or exchange of information. An example of a lighting system consisting of one standalone luminaire is shown in Figure 2.

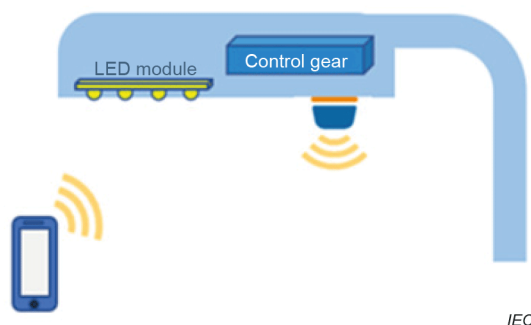


Figure 2 – Example of lighting system consisting of a standalone luminaire

11.3 Autonomous lighting system

The autonomous lighting system consists of two or more luminaires that can communicate with each other for the purpose of adjusting the light properties of the luminaires. This network of luminaires is characterized by having no central control possibilities.

These luminaires have at least one communication network that is intended to exchange information between luminaires to control the light properties. These luminaires can also have the communication capabilities of a standalone luminaire. An example of autonomous lighting system is shown in Figure 3.



Figure 3 – Example of autonomous lighting system

11.4 Centrally controllable lighting system

The centrally controllable lighting system consists of one or more luminaires that can communicate with a central controller and in the case of multiple luminaires, can have the ability to communicate between luminaires directly like in an autonomous lighting system and can have the communication capabilities of a standalone luminaire. An example of centrally controllable lighting system is shown in Figure 4.



Figure 4 – Example of centrally controllable lighting system

11.5 Typical capacities of lighting systems in different categories

The implementations of adaptive lighting controls and functionalities on lighting systems are specified according to the purpose and environmental conditions of the application. Table 1 gives examples of such functionalities and characteristics for each category of lighting system.

Table 1 – Examples of functionalities and characteristics for each category of lighting system

	Lighting system with standalone luminaire	Autonomous lighting system	Centrally controllable lighting system
Timer-based light control	X	X	X
Sensor-based light control	X	X	X
Group-based light control		X	X
Centrally controllable light control			X
Systems configurable in field	X	X	X
Data exchange on local request	X	X	X
Automatic data exchange with central controller			X
Data exchange with external system			X (optional)

Add, at the end of Clause 11, the following new Annex A:

Annex A
(normative)

Lighting systems – Reporting of lighting system performance parameters and functionalities

A.1 General

The characteristics of products used in lighting systems related to functionality, connectivity and capability shall be presented in the lighting system technical documentation.

A.2 Adaptive characteristics

A.2.1 Sensors

The supported types of sensors for lighting products in the lighting system shall be reported. Such characteristics can include but are not limited to:

- purpose of the sensor(s);
- type of sensor(s);
- sensor technology(ies).

A.2.2 Adjustment of light output level

If applicable, the dimming methods and dimming range of lighting products in the lighting system shall be reported. Such dimming characteristics can include but are not limited to:

- continuous dimming;
- stepped dimming;
- scene selection;
- dimming curve;
- dimming range.

A.2.3 Adjustment of light spectrum

If applicable, the full colour changing or white CCT tuning range of lighting products in the lighting system shall be reported. Such characteristics can include but are not limited to:

- colour tuning;
- white CCT tuning;
- colour shift dimming (e.g. dim-to-warm);
- default setting;
- tuning range or setting;
- colour tuning protocol.

A.2.4 Lighting control functionality

If applicable, the lighting control of lighting products in the lighting system shall be reported. Such characteristics can include but are not limited to:

- individual control (device addressability);
- group control (device addressability);
- daylight harvesting;
- scene control;
- scheduling.

A.3 Diagnostics

If applicable, the functions related to diagnostics of lighting products shall be reported. Such characteristics can include but are not limited to:

- fault detection;
- device status monitoring;
- light level detection;
- light degradation compensation;
- remote monitoring;
- occupancy monitoring;
- energy consumption monitoring and reporting.

A.4 Communication protocol

The supported types of communication protocol for lighting products in the lighting system shall be reported. Such characteristics can include but are not limited to:

- supported communication protocol and version;
- type of networks.

A.5 User interface

If applicable, the types of user interface for lighting products in the lighting system shall be reported. Such characteristics can include but are not limited to:

- software application;
- wall panel;
- switch;
- other input devices.