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BIM Properties for Lighting - Luminaires and Sensing devices

BIM Merkmale für die Beleuchtung - Leuchten und Sensoren

BIM Propriétés pour l'éclairage - luminaires et capteurs

WD stage

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](https://www.iso.org/directives-and-policies.html)).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](https://www.iso.org/foreword-supplementary-information.html).

This document was prepared by Technical Committee ISO/TC 274, Light and Lighting, the secretariat of which is held by DIN.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](https://www.iso.org/members.html).

Introduction

Building Information Modelling (BIM) is a concurrent process that gives engineering and construction professionals the tools to more efficiently plan, construct, and manage buildings and infrastructure.

Within standardisation committees much work is being performed to define the fundamental principles of BIM that will allow this to happen in an effective and consistent manner.

For lighting applications, it is essential that this work is monitored and where required input is made to ensure that the requirements for lighting applications are considered.

The International Organization for Standardization (ISO) draw[s] attention to the fact that it is claimed that compliance with this document may involve the use of a patent.

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BIM Properties for Lighting - Luminaires and Sensing devices

# Scope

This technical specification identifies and clarifies lighting properties for digital building design and maintenance.

This document provides all the needed properties to design and to describe luminaires and sensing devices. These properties are intended to be used as mapping properties for property providers and requesters. The mapping of the identifiers enables the exchange of luminaire and sensing device data within different databases.

The unambiguous mapping and description of properties improves the data quality, reduces misinterpretations and the processing time in digital environments. Therefore, the properties listed in this document establishes the essential description of luminaires and sensing devices in BIM systems and databases.

The listed properties in this document are used to structure the product data sheet which is complemented with real product information.

# Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 23386, Building information modelling and other digital processes used in construction — Methodology to describe, author and maintain properties in interconnected dictionaries

CIE DIS 017, ILV: International Lighting Vocabulary

ISO 80000-7, Quantities and units — Part 7: Light

ISO 16739, Industry Foundation Classes (IFC) for data sharing in the construction and facility management industries

# Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <http://www.electropedia.org/>

## Building information modelling (BIM)

Use of a shared digital representation of a built object (including buildings, bridges, roads, process plants, etc.) to facilitate design, construction and operation processes to form a reliable basis for decisions.

[ISO 29481‑1:2016, 3.2]

## Data dictionary

Information resource dictionary. Database that contains metadata.

[ISO/IEC 2382:2015, 2121501]

## Attribute

Data element for the computer-sensible description of a property, group of properties, etc.

Note 1 to entry: An attribute describes only one single detail of a property or a group of properties.

EXAMPLE The ID of a property, the name of a property

[ISO 23386:2020, 3.4]

## Property

Inherent or acquired feature of an item.

[ISO/DIS  6707-1, 3.7.1.3]

EXAMPLE thermal efficiency, diameter, luminous flux

# Principle structure

## General

The properties for luminaires and sensing devices have been organized in eight tables listed in clause 5 according to different disciplines. This sub-division is indicative only and not to be taken as exclusive.

* Mechanical properties – ID 01 (Table 01)
* Electrical properties – ID 02 (Table 02)
* Emergency lighting properties - ID 03 (Table 03)
* Photometric properties – ID 04 (Table 04)
* Sensing device properties – ID 05 (Table 05)
* Mounting & Accessory properties – ID 06 (Table 06)
* Marketing properties – ID 07 (Table 07)
* Operations & Maintenance properties – ID 08 (Table 08)

## Detailed description of set of attributes

### General

The structure of the attributes is according to ISO 23386:2020 and enhanced by the property ID.

The properties have no mandatory or optional aspect. All properties are equal in importance and hierarchy. The use case and the application provide structure and mandatory to the properties.

### GUID

In ISO 23386:2020 named “Globally unique identifier” (PA001).

Identifier given to a product that guarantees its uniqueness throughout its entire life.

[ISO 6707-2:2017, 3.2.46]

This attribute identifies the property unambiguously. A Globally Unique identifier GUID is generated using an algorithm. This machine-readable code will allow matching across databases, lists and data template.

In IFC and ISO 12006-3 the compressed version of GUID is used. It can be uncompressed to the standard GUID with open tools.

### ID

This attribute identifies the property unambiguously. It is human-readable and corresponds to the globally unique identifier.

Note: The ID always starts with the table number from 4.1 followed by a dash and an individual serial number with four digits.

### Name

In ISO 23386:2020 named “Names in language en-EN” (PA016).

The name of the property.

### Description

In ISO 23386:2020 named “Descriptions in language en-EN” (PA018).

This attribute is used to provide a plain language description of the property.

For some descriptions the name is enough. To avoid the repeating of the name, just “*identical with name.*” is entered.

### Symbol

In ISO 23386:2020 named “Symbols of the property in a given property group” (PA022).

Symbol of a property if existing. Character or combination of characters denoting a property [ISO/IEC 80000, ISO 31, and IEC 60027].

### Format, Unit

In ISO 23386:2020 named “Digital format” (PA037).

Precision is the maximum number of significant digits that can be represented in a format, or the number of digits that a result is rounded to [ISO/IEC/IEEE 60559:2011].

In ISO 23386:2020 named “Units” (PA033).

Concept type representing a scale that enables a value to be measured. Properties that do not have a unit are be designated as not applicable (n.a.).

### Value set

In ISO 23386:2020 named “List of possible values in language en-EN” (PA039).

Collection of acceptable values for a property. Values outside the value set are not permitted. Multiple values may be possible for some properties.

### Examples

In ISO 23386:2020 named “Examples in language en-EN” (PA019).

A sample for a value of the specific property.

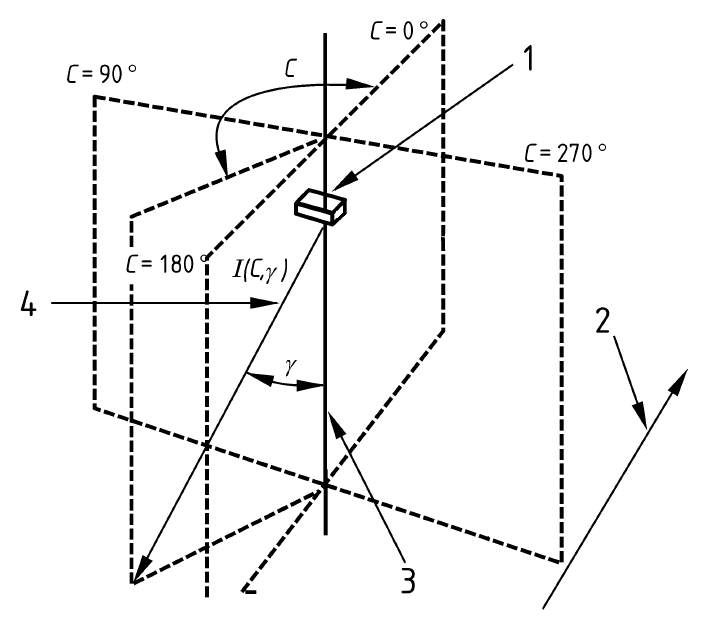
## Further IT-related attributes

Where potential attributes are not specified in 4.2, they may be defined separately within a data-dictionary. These attributes may be found in ISO 23386:2020:

* **Definitions in language en-EN (PA017):** A description of the attribute in order to define it unambiguously.
* **Method of measurement (PA029):** Evaluation of construction products to ensure their suitability according to requirements in harmonised technical specifications.
* **Name of the defining values (PA034):** In a table of values, this attribute provides the name of the column headers.
* **Data type (PA030):** Format for expressing the value of the property. This can be understood as the storage type from a software perspective. ([ISO/CEI 11404](http://sagaweb.afnor.org/fr-FR/splus/consultation/notice/1375465?recordfromsearch=True) subclause 8.1) Examples: String, Float, Integer
* **Status (PA002):** Status of the property during its life cycle. Example: Active
* **Date of creation (PA003):** Date of validation of the property creation request. All dates in accordance with ISO 8601. Format=YYYY-MM-DDThh:mm:ssTZD. Example: 2014-04-30T10:39:53Z
* **Date of activation (PA004):** Date after when the property can be used.
* **Date of last change (PA005):** Date of validation of the last change request.
* **Date of revision (PA006)**
* **Date of version (PA007)**
* **Date of deactivation (PA008):** Date when property becomes obsolete. The property is maintained in the dictionary.
* **Version number (PA009):** Enables tracking of major changes.
* **Revision number (PA010):** Enables tracking of minor changes. If the version number changes, the revision number starts again at 1. Examples: new translation, changes of typos.
* **List of replaced properties (PA011):** Identifier of the replaced property (or properties). List of GUIDs.
* **List of replacing properties (PA012):** Identifier of the replacing property (or properties). List of GUIDs.
* **Deprecation explaination (PA013):** Reason of deprecation. Deprecated may indicate the property will be removed in the future. This explaination has to be written in international English (EN).

# **Properties for Luminaires and Sensing devices**

## Table 01 – Mechanical properties



90° H

0° H

x

y

z

O

**Key**

1 Luminaire

2 Length

3 Photometric z-axis

4 Intensity direction

**Picture 1 – Orientation of a luminaire in C plane and gamma angel coordination system**

| **GUID** | **ID** | **Name** | **Description** | **Symbol** | **Format, Unit** | **Value set** | **Examples** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2GZ1YB8enFVhDHOKgLc$BU | 01-0001 | overall diameter | Overall Diameter of the housing of the round luminaire or sensing device. **CHECK** |  | 1E0, mm | n.a. | 200 |
| 2F38RxmOf3ow0715JRf5OO | 01-0053 | overall radius | Overall Radius of the housing of the luminaire or sensing device. *Suitable for round or sections. Not suitable for ellipsoid forms. Here more values are needed.* **CHECK** |  | 1E0, mm | n.a. | 100 |
| 19Z9XKYDT4p8HR0ZbD$wO\_ | 01-0002 | Height | Height of the housing of the luminaire or sensing device. Corresponds to z-axis, gamma angle 180° and 180° vertical of the Light Distribution Curve. This definition is regardless of orientation of luminaires. |  | 1E0, mm | n.a. | 100 |
| 1uJglYpRnFpQ4tStHaR2Pf | 01-0003 | Length | Length of the housing of the luminaire or sensing device. Length is set parallel to the C90-C270 plane. Corresponds to y-axis and with 90° horizontal of the Light Distribution Curve. This definition is regardless of orientation of luminaires. |  | 1E0, mm | n.a. | 1500 |
| 1dPvrZN3vEIB0n0vwYvDcX | 01-0004 | Width | Width of the housing of the luminaire or sensing device. Width is set parallel to the C0-C180 plane. Corresponds to the x-axis and with 0° horizontal of the Light Distribution Curve. This definition is regardless of orientation of luminaires. |  | 1E0, mm | n.a. | 200 |
| 1RPyGAgMf4hRTZ0DogLFnU | 01-0005 | Weight | Weight of the luminaire or sensing device. |  | 1E-2, kg | n.a. |  |
| 2A6xVlUTj9QP1G$qb4FiWv | 01-0006 | cut-out diameter | Diameter of the cut-out hole (for recessed or flush mount). |  | 1E0, mm | n.a. |  |
| 1RIsLltoX1whNaYkaCoHXJ | 01-0007 | recessed required depth | Required minimum installation depth, height of the invisible / hidden mounting part of the luminaire (for recessed or flush mount). |  | 1E0, mm | n.a. |  |
| 2VEYAfd7j4FQtJgAb\_riA5 | 01-0008 | cutting out length | Length of the cut-out hole (for recessed or flush mount). |  | 1E0, mm | n.a. |  |
| 2pFfNBOuv1Tf\_RTQpYktGL | 01-0009 | cutting out width | Width of the cut-out hole (for recessed or flush mount). |  | 1E0, mm | n.a. |  |
| 1zs4Cj96j3d8TWAeeixJga | 01-0010 | luminaire housing shape 3D | Three-dimensional simplified shape of luminaire or sensing device. |  | n.a. | Cylinder, Cuboid, Cube, Cone, Pyramid, Sphere, Half-Sphere, User Defined |  |
| 1Zek8UyXfE6gToN8\_RDHFg | 01-0011 | shipping weight | Weight of the shipping package of the luminaire or sensing device. |  | 1E-2, kg | n.a. |  |
| 1i\_XY2Awj5RRadNmgPS3yQ | 01-0012 | shipping height | Height of the packed luminaire or sensing device as it is shipped. |  | 1E0, mm | n.a. |  |
| 10UDC$GOvEHexmf\_I8j9xG | 01-0013 | shipping length | Length of the packed luminaire or sensing device as it is shipped. |  | 1E0, mm | n.a. |  |
| 1ybyhd8TbACg99OxpWMoOg | 01-0014 | shipping width | Width of the packed luminaire or sensing device as it is shipped. |  | 1E0, mm | n.a. |  |
| 0yvFhm4xvDggZvLzgzhiyq | 01-0015 | type of packaging | Type of packaging. Available types of packaging to be specified by the manufacturers. |  | n.a. | Carton, Pallet, Container, Without, Other |  |
| 16XdmXw8T3HOIi0TOcc8LH | 01-0016 | impact protection rating IK | Degree of protection provided by enclosures for electrical equipment against external mechanical impacts according to IEC 62262:2002 and IEC 60068-2-75:1997. |  | n.a. | IK00, IK01, IK02, IK03, IK04, IK05, IK06, IK07, IK08, IK09, IK10 |  |
| 1LrBLaYtnCARKperF\_2Ykh | 01-0017 | glow wire resistance | The glow wire test for fire hazard according to IEC 60695-2:2014 to test electrical products, assemblies or individual components. |  | 1E0, °C | 550°C, 650°C, 750°C, 850°C, 960°C |  |
| 1284Zyx8D4uR55X2cRsWzu | 01-0018 | needle flame test | Method for testing and assessment of the fire hazard of plastic material using a needle flame according to IEC 60695-11-5:2017. |  | n.a. | Yes No |  |
| 1PMNxHS2z4tRuwiQxyzRfs | 01-0019 | number of light outputs | Number of plane surfaces with light output. |  | 1E0, n.a. | n.a. |  |
| 1mHV\_4yHLEFuxOaIDlNmNn | 01-0020 | diameter of the luminous area | *Identical with name.* |  | 1E0, mm | n.a. |  |
| 0WXZRI6CD2KfL4xC1uuLBF | 01-0021 | height of the luminous area | To be aligned with z-axis and gamma 180°. |  | 1E0, mm | n.a. |  |
| 1auIwSthrFvRTJgX6NfO9Z | 01-0022 | length of the luminous area | Length is parallel to the C90-C270 plane. Aligned with the Y axis and with 90° horizontal. |  | 1E0, mm | n.a. |  |
| 2SqBhDZKD1hBjGWsV4q\_GQ | 01-0023 | width of the luminous area | Width is parallel to the C0-C180 plane. Aligned with the X axis and with 0° horizontal. |  | 1E0, mm | n.a. |  |
| 2gBflnlCfCgwR3hT\_QVGtQ | 01-0024 | cable length | Cable for power supply. Zero means no cable supplied. |  | 1E0, mm | n.a. |  |
| 1oCak0l6v9Bew\_SHOfRFnw | 01-0025 | Pliable | The Luminaire body is flexible. |  | n.a. | Yes No |  |
| 3CckyLFxX8KxZVvgilS7Jt | 01-0026 | ground recessed accessibility class | Specific application class for ground recessed luminaries according temperature limits, dimensions and static load resistance in kN according to IEC 60598-2-13:2017. **Update** |  | n.a. | A1-non-accessible  A2-pedestrians  A3-parking  A4-snow-ploughs  A5-particular | A2 |
| 1bLQmOkZL08ugkgUMbJ1CC | 01-0054 | drive over | Luminaire is resistant to the car's weight. |  | n.a. | Yes No |  |
| 11NYXtsrfCQeaNj\_BvIGT5 | 01-0055 | roll over | The luminaire is suitable for roll over. |  | n.a. | Yes No |  |
| 3AgJzo7ND4zB4c3ysHuewK | 01-0056 | walk over | Luminaire is resistant to the man's weight. |  | n.a. | Yes No |  |
| 0f2af0EifB1Qi6xalTs1Xn | 01-0029 | sealing material | Material of the sealing of a luminaire. |  | n.a. | n.a. |  |
| 0iACWRZ2HAFfY7UBnCGjHq | 01-0057 | reflector material | Material of the reflector of a luminaire. |  | n.a. | n.a. |  |
| 3jAmXEFTn9oPlBD\_oO4BfE | 01-0030 | silicon-free | States whether the luminaire is silicon-free. |  | n.a. | Yes No |  |
| 2DJLgonKH2zvtUylGDtoL3 | 01-0031 | halogen-free | States whether the product is halogen-free according IEC 61249-2-21:2004. |  | n.a. | Yes No |  |
| 3IPpBFdz17PB0W0suiESss | 01-0032 | temperature on light aperture | Average temperature of light emitting surface of a luminaire. |  | 1E0, °C | n.a. |  |
| 30M$RN1TX7$gz0O8$bv0j4 | 01-0033 | operating temperature | Range defined by the minimum and maximum operating temperatures at which the luminaire operates normally as specified by the supplier or manufacturer. |  | 1E0, °C | n.a. |  |
| 0jRoUrk2nF5QFenmXXlBTS | 01-0034 | minimum distance | Describes the minimum required distance of the luminaire housing to other objects. |  | 1E0, mm | n.a. |  |
| 3GwYrPlNbAYu8gPAOJZgwc | 01-0035 | maximum orientation angle | Maximum of possible values for the rotation of the orientation angle (z-axis). |  | 1E0, ° | n.a. |  |
| 3qn7sE55H1FuwsBozcktbX | 01-0036 | minimum orientation angle | Minimum possible value for the rotation of the orientation angle (z-axis). |  | 1E0, ° | n.a. |  |
| 26KAJOVBvF8gIMOZaAOFTV | 01-0037 | orientation angle steps | Step width for the orientation angle (Z-axis). |  | 1E0, ° | n.a. |  |
| 2NmVhTk4TFfvwDNSYyqj$4 | 01-0038 | orientation angle default | Default value for the orientation angle (z-axis). |  | 1E0, ° | n.a. |  |
| 0qiz0v1kLAPBRWAW6wO1PA | 01-0039 | orientation angle selected value | Selected value for the orientation angle (z-axis). |  | 1E0, ° | n.a. |  |
| 05nmPIMs186u1u1s5MSd23 | 01-0040 | maximum tilt angle | Maximum possible value for the rotation of the tilt angle (x-axis). |  | 1E0, ° | n.a. |  |
| 3ZWzCOV090TukLTsY8Vcua | 01-0041 | minimum tilt angle | Minimum possible value for the rotation of the tilt angle (x-axis). |  | 1E0, ° | n.a. |  |
| 0\_oftQZ\_jB$e1oGoWeQWoV | 01-0042 | tilt angle steps | Step width for the tilt angle (x-axis). |  | 1E0, ° | n.a. |  |
| 0w56LObA94ivbaiikyEXf2 | 01-0043 | tilt angle default | Default value for the tilt angle (x-axis). |  | 1E0, ° | n.a. |  |
| 3VHFOwjl13sv6CBYkwU2wh | 01-0044 | tilt angle selected value | Selected value for the tilt angle (x-axis). |  | 1E0, ° | n.a. |  |
| 3zsZztBEH9sPA24POLsfWn | 01-0045 | maximum turn angle | Maximum possible value for the rotation of the turn angle (y-axis). Turn can also be referred to as ‘twist’ or ‘cant’. |  | 1E0, ° | n.a. |  |
| 3WFOEtzHjE2gEwIqwNt23B | 01-0046 | minimum turn angle | Minimum possible value for the rotation of the turn angle (y-axis). Turn can also be referred to as ‘twist’ or ‘cant’. |  | 1E0, ° | n.a. |  |
| 1S1uI1hob0OAsYAUDvnB5e | 01-0047 | turn angle steps | Step width for the turn angle (y-axis). Turn can also be referred to as ‘twist’ or ‘cant’. |  | 1E0, ° | n.a. |  |
| 0Y3iFNJcH3Xh\_0Axe6FRZy | 01-0048 | turn angle default | Default value for the turn angle (y-axis). Turn can also be referred to as ‘twist’ or ‘cant’. |  | 1E0, ° | n.a. |  |
| 0HKPlHCMXFOOmtqPiFpiwZ | 01-0049 | turn angle selected value | Selected value for the turn angle (y-axis). Turn can also be referred to as ‘twist’ or ‘cant’. |  | 1E0, ° | n.a. |  |
| 3ejPldyc9Bau0HaTHZMtva | 01-0050 | 3D model file | The description of a location of the 3D model file. |  | n.a. | n.a. | C:\, URL |
| 3p1kEeiDL4i8RySiTGkUyU | 01-0051 | cable inlet | Cable inlet, type and count, free description |  | n.a. | n.a. | 2xPG13.5 |
| 0fa4jPy7f3KhErAn\_5SUg7 | 01-0052 | holder to install – **flush mounting box?** | Mechanical device to get the luminaire or sensor mounted **???** |  | n.a. | n.a. |  |

## Table 02 – Electrical properties

| **GUID** | **ID** | **Name** | **Description** | **Symbol** | **Format, Unit** | **Value set** | **Examples** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2FA0ih18LF\_uKt46e5ErIv | 02-0001 | apparent load | Apparent Load of the product. | S | 1E0, VA | n.a. |  |
| 17a067965CqhDelQ$Y3mcP | 02-0002 | rated input power | Input power consumed by the light source(s), control gear and control circuit in or associated with a luminaire including any standby power when the luminaire is turned on. |  | 1E0, W | n.a. |  |
| 3LBrQkLDDFheBOxrGk8Zr\_ | 02-0003 | power factor | Ratio of the amount of the active power to the apparent power at 100% load. See also IEC 80000-6:2008. | cos φ | 1E0, n.a. | n.a. |  |
| 0zjByQSTX24wsxTI25Lzj$ | 02-0004 | active power | Consumption of the power corresponding to the dim level of the luminaire. It is presented as a table of power (W) related to the luminous flux emitted (lm) or the percentage of dimming (%). |  | 1E-2, W 1E0, lm OR 1E0, % | n.a. |  |
| 3krkQTVbv0$g9Xj9eYC6nh | 02-0005 | compensation type | Identifies the form of compensation used for power factor correction and radio interference suppression. |  | n.a. | Capacitive,  Inductive,  Other |  |
| 0TzE4sMDv1pwfygK1xxjm5 | 02-0006 | standby power | Power consumption of switched off luminaire. All electrical components including emergency and lighting controls components have to be considered. Is also known as parasitic power. See also ISO/CIE 20086:2019. |  | 1E-2, W | n.a. |  |
| 2wiaN2gSf0$RFeAF8d\_51K | 02-0007 | power consumption of the controls | Power consumption of the detector with the light switched off and without motion detection / presence detection (idle state). |  | 1E-2, W | n.a. |  |
| 0G4TAennPD5gzRoG2rlZv\_ | 02-0008 | ILCOS light source type | Light Source type definition according ILCOS, IEC 61231:2010. |  | n.a. | n.a. | IAA/C-40-220/230-E27-60 |
| 1fBDdf6YP2O8\_JFTCLHktp | 02-0009 | socket | A device which mechanically supports and provides electrical connections for a compatible electric light source. See also IEC60061:2018. |  | n.a. | n.a. | E27 |
| 1nKr7A75b8reMNAfPW1iw1 | 02-0010 | nominal light source output power | Approximate power output used to designate or identify the light source. |  | 1E0, W | n.a. |  |
| 1A3s$Z4Sj7jQFfzbfen7Yu | 02-0011 | multilamp light source wattage | Luminaires that could be equipped with more than one light source wattage. Selection of all possible nominal light source output wattage. |  | 1E0, W | n.a. |  |
| 018C\_3ZRn5IufwY89oB9NV | 02-0012 | light source included | States whether the luminaire is supplied with light source. |  | n.a. | Yes No |  |
| 2LJHyobk57buKgQhTXFfR\_ | 02-0013 | maximum nominal output power of light source | *Identical with name.* |  | 1E0, W | n.a. |  |
| 1RGMcZL0X4SvXP9H1tpT7e | 02-0014 | default light source power | Recommended light source power by supplier or manufacturer. |  | 1E0, W | n.a. |  |
| 1ELEjwitTBhANPTqofV2Tl | 02-0015 | light source position of usage | Light Source usage position (Horizontal/Vertical) possibly with range of angle. |  | n.a. | Horizontal, Vertical |  |
| 2UOOchRyr2eQDXabAwecx5 | 02-0016 | light source count | Number of light sources in one luminaire. Not valid for LED luminaires. |  | 1E0, n.a. | n.a. |  |
| 0FWc9hC5PEqgfN0fVzc2Yo | 02-0017 | zhaga standard | Is the luminaire compliant with Zhaga. |  | n.a. | Yes No |  |
| 21GF1lrRP4denYC8o6ot$N | 02-0018 | control gear | Type of control gear, which is required to control the electrical operation of the light source(s). |  | n.a. | n.a. | Magnetic, Electronic |
| 06Vbbmtwv85QArFTsBPUPQ | 02-0019 | control gear required | States if control gear is necessary. |  | n.a. | Yes No |  |
| 3kZ3CJ9Xb9DBPoZ15k3vIQ | 02-0020 | control gear included | Shipped with or without ballast. |  | n.a. | Yes No |  |
| 2mGS7VdXfBo8rV8OFHuW7b | 02-0021 | control gear quantity | The quantity of control gears. |  | 1E0, n.a. | n.a. |  |
| 3M6mU$FIP6KQ80BVaK5PCO | 02-0022 | control gear location | Describes the location of the control gear. Inside or outside of the luminaire. Or distance to light source. |  | n.a. | n.a. |  |
| 3d9jfSb\_z7WB2y0xbHeccR | 02-0023 | energy efficiency of ballast | The IEC62442-1:2018 define the measuring methods for the total input power of the ballast–light source system. |  | 1E-2 |  | 0,86 |
| 2oaQ3AOnn40wmt6Zfp6ooy | 02-0024 | nominal current | Electrical nominal current. | I | 1E0, A | n.a. |  |
| 3rfirTJfj9bgIELSX4VRBz | 02-0025 | inrush current | Initial current after turning on. Base for quantity of luminaires per fuse or similar. |  | 1E-2, A | n.a. |  |
| 2ENV$TQoL31gDSHIZzyR4N | 02-0026 | inrush current time | Inrush current time after turning on. |  | 1E0, µs | n.a. |  |
| 22IpUkOwD2iOIVugd8CAfb | 02-0027 | nominal frequency | Nominal frequency at which the product operates normally as specified by the supplier or manufacturer. |  | 1E0, Hz | 50, 60, 0  *multiple option selection* |  |
| 3ERn8VgnjDjhulH3MaG9yG | 02-0028 | nominal mains voltage | Nominal voltage at which the product operates normally as specified by the supplier or manufacturer. |  | 1E0, V | n.a. | In European Union is 230 V ± 10% |
| 3$$yIxYFj1E9zXdzpVaCgt | 02-0066 | rated voltage | The voltage or range of voltages indicated on the luminaire. **Reference – Check with IEC/TC34** |  | 1E0, V | n.a. |  |
| 3bHsk$G7n05BgiaYUYUg6s | 02-0067 | 2nd rated voltage | Rated voltage on the secondary side (in the case of lighting using a voltage converter). **Reference – Check with IEC/TC34** |  | 1E0, V | n.a. |  |
| 3RRkslNcn3IBFmyVoAyyMc | 02-0029 | voltage type | AC Alternating Current / DC Direct Current / UC Universal Current (Alternating or Direct Current). |  | n.a. | AC, DC, UC |  |
| 0Ias3th8D2cg4EvP$KqQcv | 02-0030 | electrical safety class | Indicates whether the electrical device has a protective earth connection or not. |  | n.a. | I, II, III |  |
| 1K\_1K1q6n7KgOFJw5Cuc\_i | 02-0031 | ingress protection IP code | The IP code classifies and rates the degree of protection provided against intrusion (body parts such as hands and fingers), [dust](https://en.wikipedia.org/wiki/Dust), accidental contact, and water by mechanical casings and [electrical enclosures](https://en.wikipedia.org/wiki/Electrical_enclosures). See also IEC 60529:2014. |  | n.a. | IP20, IP21, IP22, IP23, IP24, IP25, IP26, IP27, IP28, IP30, IP31, IP32, IP33, IP34, IP35, IP36, IP37, IP38, IP40, IP41, IP42, IP43, IP44, IP45, IP46, IP47, IP48, IP50, IP51, IP52, IP53, IP54, IP55, IP56, IP57, IP58, IP60, IP61, IP62, IP63, IP64, IP65, IP66, IP67, IP68, IP69, IP69K |  |
| 2sRMMfIvvEvwH0LKqBmNoy | 02-0032 | impulse withstand voltage | *Identical with name.* |  | 1E0, kV | n.a. |  |
| 2Afk3AuoX0YfhlG9pMfb5q | 02-0033 | colour controllable | States if the colour is controllable. |  | n.a. | Yes No | for RGB LED diodes |
| 2kMc1GwgH1LAnZ1huo7mq\_ | 02-0034 | colour temperature controllable | States if the colour temperature is controllable. |  | n.a. | Yes No |  |
| 00aw6unKX0ghwxryKRoQm9 | 02-0035 | control features | Description of Control Elements and Features. |  | n.a. | n.a. | Touchdim, dynamic light, light management system |
| 1rdcbmVG19UgBf\_YVdUo9f | 02-0036 | dimmable | Determines if the luminaire is dimmable. |  | n.a. | Yes No |  |
| 3YVv\_4s1LA0uiEUpMsReJ9 | 02-0037 | with dimmer | Determines whether the luminaire has a dimmer included. |  | n.a. | Yes No |  |
| 0jGPV\_emX0auTlyNQx4grP | 02-0038 | dimming method | Determines which dimmer type is applicable for the luminaire. |  | n.a. | PWM,  CCR,  leading edge phase cut,  trailing edge phase cut,  other |  |
| 0DlY8lmBT8gxJCl04yS42z | 02-0068 | dimming control method | Determines which dimming control type is applicable for the luminaire. **Check with IEC/TC34.** |  | n.a. | n.a. | Group, Step, Sequential |
| 2SM664IIzBFOlcuHC24iWz | 02-0039 | dimming range | Determines which range of dimming is possible for luminaire. |  | 1E0, % | n.a. | 1-100% |
| 3\_eFt0HBf3UgmfsROvHbly | 02-0040 | interface | Determines which communication or control interface is indicated for the luminaire or sensing device. |  | n.a. | n.a. | KNX, LON, DALI broadcast,  DALI addressable, 0-10V, ArtNet, BacNet, DMX, PWM |
| 2a382qr4fB08Wb9xoufkaq | 02-0041 | quantity of addresses | Determines the quantity of addresses of the product. |  | 1E0, n.a. | n.a. | 4 DALI Addresses for Power Consumption,  2 DALI Addresses for HCL,  20 DMX Channels needed for functions |
| 24CkSPPcb8Fx0fUWeZlnfW | 02-0042 | DALI DT8 | Determines whether the luminaire is DALI Device Type 8. |  | n.a. | Yes No |  |
| 0qBCPAI5j85ewtsRgzQ4Fw | 02-0043 | integral circuit protection | Determines whether the product involves an integrated circuit protection if not the zero should be stated. |  | 1E-1, A | n.a. | fuse |
| 1W6c2bUHL1jxn4\_Jc4IGgo | 02-0044 | supply circuit conductor | Specifies the connection for a supply circuit. |  | n.a. | Cable,  Plug-connector,  Screw-connector,  Connector with strain relief |  |
| 05F825n2fBxfST7DzrOuLm | 02-0045 | clamping range | The range of clamping. |  | 1E-2 - 1E-2, mm² | n.a. | 0.75 – 1.50 mm² |
| 11SZgYx5H3RvmoGz9uTiTf | 02-0046 | cable cross-section | Value of acceptable minimum and maximum cable cross-section. |  | 1E0, mm² |  |  |
| 100MSXxt96iBH86YJ6lECo | 02-0047 | number of phases | Specifies the number of phase that a luminaire can be connected to. |  | 1E0, n.a. | 1, 2, 3 | 3 |
| 1UrfPrHgj2whM6TeNYn83l | 02-0048 | supply phase | Determines the number of supply phase used for the device electrical input. |  | n.a. | L1, L2, L3 | L1 |
| 2nKXmluvb7\_8clWogllEcr | 02-0049 | through wiring | Determines whether the luminaire is suitable for through wiring with the indication of the maximum current. |  | 1E0, A | n.a. | 16 A |
| 1UUzk8eSnF9h$NyNPliShg | 02-0050 | with connecting cable | Determines whether the product involves connecting cable. |  | n.a. | Yes No |  |
| 1oLuIWYPjCIvl7dqwEXdaN | 02-0051 | with power plug | Determines whether the luminaire includes a power plug. |  | n.a. | Yes No |  |
| 2RVwJxv$TCNB03cljqpK26 | 02-0052 | with switch | Determines whether the luminaire has a switch included. |  | n.a. | Yes No |  |
| 1h35yfOg10veXdUQaAudl2 | 02-0053 | with sensing device | Determines whether the luminaire contains an integrated sensing device. |  | n.a. | Yes No |  |
| 3kbFNwkkb7gPUsnc\_COBg4 | 02-0054 | constant light output | Determines whether the luminous flux stays constant over the declared lifetime. |  | n.a. | Yes No |  |
| 2d9pUf$QXEtxHYdBYou0$3 | 02-0055 | constant light output start power | *Identical with name.* |  | 1E-2, W | n.a. |  |
| 3UEOcatIDEMf$qdvydAlfg | 02-0056 | constant light output end power | *Identical with name.* |  | 1E-2, W | n.a. |  |
| 3B8KQ1WqfC8x5qTA1pA7PY | 02-0064 | constant light output average power | *Identical with name.* |  | 1E-2, W | n.a. |  |
| 1qhhuqryT4$xTSgToocAE3 | 02-0057 | radiation pattern file | File reference to pattern file which contains the radiation distribution similar to a Eulumdat file for light. |  | n.a. | n.a. | C:\, URL |
| 30Ko89Zdb53uyKzRXpupJT | 02-0058 | radio transmitting power | Power of the wireless module expressed in decibel ratio of a power value. IEEE |  | 1E0, dBm | n.a. | +4 dBm |
| 3ETH0SOQH5DeS9U$Wj1Aa8 | 02-0059 | radiation transmitting frequency | The frequency of radiation for wireless transmission. |  | 1E-2, GHz | n.a. | 2.4 GHz |
| 0WjAaRYTX8eOZcC3iDTL8b | 02-0060 | radiation transmitting standard | Determines whether the luminaire is in accordance with a wireless connection standard. |  | n.a. | n.a. | IEEE 802.15.1 |
| 12\_LtdVG5DqvZ$R5Y3Ua8I | 02-0061 | led module replaceable | *Identical with name.* |  | n.a. | User with tool,  User without tool,  Professional,  Manfacturer,  none | Professional |
| 1hwc11plv2A90eCTHqW7ZB | 02-0062 | total harmonic distortion THD | Ratio of the effective value of the sum of all harmonic components to the effective value of the fundamental according to IEC 61000-3-2:2010. |  | 1E0, % |  | 4% |
| 0Raptd45z3S8EfZlGBNO61 | 02-0063 | control gear replaceable | Control gear replaceable, according to IEC 60598-1 |  | n.a. | User with tool,  User without tool,  Professional,  Manfacturer,  none | none |
| 3yprn4XcD1CP0A67A$WxFb | 02-0065 | surge protection | *Identical with name.* |  | n.a. | Yes No |  |

## Table 03 – Emergency lighting properties

| **GUID** | **ID** | **Name** | **Description** | **Symbol** | **Format, Unit** | **Value set** | **Examples** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0nXXpyMbD4QgzHiMoFE$Kf | 03-0001 | Suitable for emergency lighting | Determines whether emergency lighting is possible. |  | n.a. | Yes No |  |
| 3pJBuEixPAV9f0wTnl2cOM | 03-0002 | emergency unit integrated | Indicates if emergency lighting is integrated. Combined luminaire for standard and emergency lighting with one or multiple Light Distribution Curves. |  | n.a. | Yes No |  |
| 3Q6UsxAKD0Q8mO0x0ZsmhD | 03-0003 | dedicated emergency lighting type | Product type for an application of the emergency lighting. Dedicated to emergency luminaires only. |  | n.a. |  | path lighting, evacuation lighting, guidance lighting, safety lighting,  Exit sign lighting, Dynamic exit sign lighting |
| 3$hGYwTMb2sQ53dzP$Gjc9 | 03-0004 | emergency lighting light source type | Light source type of an additional separate emergency light source within the luminaire. |  | n.a. | n.a. | LED |
| 2Yq5DQRXP7efr3cQyq8sqS | 03-0005 | backup supply system | The type of backup supply system according IEC 60598-2-22:2015. |  | n.a. | single battery, central battery, generator |  |
| 2qgqLlM2b91wjREM3dUep2 | 03-0006 | testing method | Testing method of emergency lighting. According to IEC 62034:2012. |  | n.a. | Manual Test,  Self-Test, Central Test,  S,  P,  ER,  PER,  PERC |  |
| 2XGbfN7gP1ugSmAfQOjIzn | 03-0007 | emergency operation type | Emergency operation type according IEC 60598-2-22:2015 annex B b) |  | 1E0, n.a. | 0, 1, 2, 3, 4, 5, 6 |  |
| 2UfXwD2hLDxeeUzqPOJWhh | 03-0008 | emergency facilities | Emergency facilities code according IEC 60598-2-22:2015 annex B c) |  | n.a. | A, B, C, D, E, F, G |  |
| 1QFaMGG19DhwzoLgqvywvv | 03-0009 | emergency nominal voltage | Nominal voltage in emergency operation. |  | 1E-2, V | n.a. |  |
| 0Wy67y94v1fhghSU3mbcgU | 03-0010 | emergency lighting rated input power | Rated Input power consumed by the emergency lighting. |  | 1E-2, W | n.a. |  |
| 3LN\_2aQQD049K9w6fm2THi | 03-0011 | current DC-operation | *Identical with name.* |  | 1E0, mA | n.a. |  |
| 2sk0IXxZ93A9vfVQArmqx0 | 03-0012 | emergency lighting inrush current | Initial current of emergency lighting after turning on (rated value). Needed for the correct sizing of AC/AC central systems. |  | 1E-2, A | n.a. |  |
| 1i4AYS799CBxV0ZlYKoY1M | 03-0013 | emergency lighting inrush current time | Inrush current time of emergency lighting after turning on. Needed for the correct sizing of AC/AC central systems. |  | 1E0, µs | n.a. |  |
| 3SPWY2QXj1Tve2T7PA9Uw4 | 03-0014 | duration time and luminous flux of emergency lighting | Presentation of the variation of the emergency lighting output during the usage time. It is presented as a table of luminous flux emitted (lm) and corresponding duration times (h). |  | 1E0, lm, 1E0, h | n.a. |  |
| 38wYgCHqr1A8vcapxWfUmV | 03-0027 | maximum luminous flux of Emergency lighting | The maximum luminous flux from an emergency luminaire. |  | 1E0, lm | n.a. |  |
| 36Xu4jb\_T9vQ3ZUeKan53F | 03-0015 | emergency LDC | Emergency lighting Light Distribution Curve as file. |  | n.a. | n.a. | C:\, URL |
| 2WGVMrEo99aPK$EDJPaPtF | 03-0016 | emergency lighting charging power | Input power to the charging circuit of emergency luminaires when the light sources are not operating. |  | 1E-2, W | n.a. |  |
| 0RTU7Kmn15Ax1tSLCuIgSG | 03-0017 | emergency lighting initial charge time | Duration (in h) in which the emergency lighting batteries are being charged for the first usage after the installation. |  | 1E-2, h | n.a. |  |
| 0nMElVYCfAX8eq7QEwZK1f | 03-0018 | emergency lighting recharge time | Duration (in h) in which the emergency lighting batteries are being re-charged. |  | 1E-2, h | n.a. |  |
| 29ZiimATr4QO0B4wwiQNa8 | 03-0019 | battery type | Battery type, Cell type. |  | n.a. | n.a. |  |
| 3HSRRigDn3bwrPttqPraMV | 03-0020 | battery capacity | *Identical with name.* |  | 1E-1, Ah | n.a. |  |
| 1hLQSaFhL7LOoWCue\_qAOm | 03-0021 | battery voltage | *Identical with name.* |  | 1E-1, V | n.a. |  |
| 3a5GdiFJ1CzvyjChoIq9lh | 03-0022 | battery form factor | Battery form factor and dimension. |  | n.a. | n.a. | Stick 240mm Ø 33 mm |
| 200Trg0X9FquhZp9ZMM4ud | 03-0024 | pictogram escape direction | The direction of escape pictogram. Does not include the description of the pictogram. |  | n.a. | n.a. | Rightarrow, Leftarrow, Downarrow, Uparrow, Other, Not known, Unset |
| 3s3aB5AOr6Swmx1Bfi6E$Z | 03-0025 | addressability | The type of addressability of the emergency lighting controller. |  | n.a. | n.a. | Implemented, Upgradeable to, Not implemented, Other, Not known, Unset |
| 3dyQmC$KHDfvD\_wfGSgfji | 03-0026 | viewing distance | Viewing distance of pictogram according to ISO 30061:2007. |  | 1E-2, m | n.a. |  |

## Table 04 – Photometric properties

| **GUID** | **ID** | **Name** | **Description** | **Symbol** | **Format, Unit** | **Value set** | **Examples** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1lEpo0LO16FPpSj0jFwIOu | 04-0001 | light distribution curve LDC | Light distribution curve LDC as Eulumdat, ANSI/IES LM-63, ANSI/IES TM-33 or UNI 11733 files. A luminaire can emit more than one Light Distribution Curves. |  | n.a. | n.a. | C:\, URL |
| 26Cck1Shb27v8JU1a1vgKV | 04-0043 | photometry | Photometry is absolute or relative. |  | n.a. | absolute, relative |  |
| 0FYKiM4lT7dAD13KWzXvsG | 04-0002 | photometric centre position x direction | X position of the point used as origin for photometric measurements and calculations in relation to the middle of the bounding box. Positive values are aligned with the C0 level. Negative values are aligned with the C180 level. See EN 13032-4:2015. |  | 1E0, mm | n.a. |  |
| 3HorBzYr10DBaLrbgxq2fS | 04-0003 | photometric centre position y direction | Y position of the point used as origin for photometric measurements and calculations in relation to the middle of the bounding box. Positive values are aligned with the C90 level. Negative values are aligned with the C270 level. See EN 13032-4:2015. |  | 1E0, mm | n.a. |  |
| 2MDJxTVzv57ALNnXX1bC1W | 04-0004 | photometric centre position z direction | Z position of the point used as origin for photometric measurements and calculations in relation to the middle of the bounding box. Positive values are aligned with the gamma angle 180° (up). Negative values are aligned with the gamma angle 0° (down).  If the light centre point is at the bottom side, then this value is the negative half of the height. See also EN 13032-4:2015. |  | 1E0, mm | n.a. |  |
| 2oxTEZw7TCPPcnnsapMO1u | 04-0005 | rated luminous flux of the luminaire | Value of the initial luminous flux of a given type of luminaire declared by the manufacturer or the responsible vendor, the luminaire being operated at a  ambient temperature of 25 °C See also EN 13032-4:2015. |  | 1E0, lm | n.a. |  |
| 2gmo70bVX90uJh2YAvS62s | 04-0006 | rated luminous flux of the light source | Value of the initial luminous flux of a given type of light source declared by the manufacturer or the responsible vendor, the light source being operated at a  ambient temperature of 25 °C See also EN 13032-4:2015. |  | 1E0, lm | n.a. |  |
| 1QmFILGbX6\_BfU63rG5mrh | 04-0007 | luminous efficacy | Quotient of the luminous flux emitted by the luminaire and the power absorbed by the light source and associated circuits of the luminaire. |  | 1E0, lm/W | n.a. |  |
| 2gMYX1hkHEE8kQmgimay3h | 04-0008 | light output ratio LOR | Ratio of the luminous flux of the luminaire, measured under specified practical conditions with its own light source(s) and equipment, to the sum of the individual luminous fluxes of the same conventional light source(s) according to EN 12665:2018 – ILV? Check also definition. Always 1 for absolute photometry. |  | 1E0, % | n.a. |  |
| 28T0Q968jDwvyxAshmZRwz | 04-0009 | type of distribution | The classification of luminaires regarding the amount of light flux emitted into upper or lower half-space. See also ISO CIE 20086:2019. |  | n.a. | direct, indirect, direct and in-direct |  |
| 3O71lbRGPDpOk4BrfOhVAO | 04-0010 | downward flux fraction | Ratio of the downward flux to the total flux of the luminaire. |  | 1E0, % | n.a. |  |
| 3wGph6hnfEOuWEuOMDd9mz | 04-0011 | downward light output ratio DLOR | Ratio of the downward luminous flux of the luminaire, measured under specified practical conditions with its own light source(s) and equipment, to the sum of the individual luminous fluxes of the same light source(s) when operated outside the luminaire with the same equipment, under specified conditions. Not valid for absolute photometry. |  | 1E0, % | n.a. |  |
| 1sYsm6e7H82AbC\_0tk06XB | 04-0012 | upward light ratio ULR | Ratio of the total luminaire flux that is emitted above the horizontal by all luminaires to the total luminaire flux from all luminaires in an installation, when the luminaires are mounted in their mounting position. |  | 1E0, % | n.a. |  |
| 00NGdZChz3LACcedAVtNNR | 04-0013 | upward light output ratio ULOR | Ratio of the upward luminous flux of the luminaire, measured under specified practical conditions with its own light source(s) and equipment, to the sum of the individual luminous fluxes of the same light source(s) when operated outside the luminaire with the same equipment, under specified conditions. Not valid for absolute photometry. |  | 1E0, % | n.a. |  |
| 0wVs5XlEPE5gBsG3nTILKR | 04-0014 | photometric beam shape | Description of photometric Beam typical shape. |  | n.a. | n.a. | Rotation-symmetrical, axial-symmetrical, narrow, medium, flood, linear, symmetrical, asymmetrical, double asymmetrical |
| 3UBMXTzMP2ev8RJ6CTkBmS | 04-0015 | tenth-value angle | Angle of the beam centre to the point where the luminous intensity is reduced to one tenth. See also IEC 61341:Ed.2.  If the beam is not rotation symmetrical the photometric plane needs to specified. |  | 1E0, ° | n.a. |  |
| 1CGllDBHDEBgXIfKouXTHT | 04-0016 | half-value angle | Angle of the beam centre to the point where the luminous intensity is reduced to half. See also IEC 61341:Ed.2.  If the beam is not rotation symmetrical the photometric plane needs to specified. |  | 1E0, ° | n.a. |  |
| 2BFsFYpCbFKfkbtjAMxZOc | 04-0017 | photometric code | A code consists out of CRI, CCT, initial colour variation (MacAdam ellipse steps), colour variation through life (MacAdam ellipse steps) and lumen maintenance value (Lx). |  | n.a. | n.a. | 830/359 |
| 1vsP4zxUz78h3Ps8HNeo2c | 04-0018 | US-types of luminaire light distribution | US-Types of luminaire light distribution according to IESNA for street lighting.  Note: These types are used in IES photometry files. |  | n.a. | I, II, III, IV, V |  |
| 1lh0A7J0P1yfpuJvqgOATC | 04-0019 | BUG rating of light distribution | The BUG classification (Backlight, Uplight, and Glare) according to IDA/IESNA evaluates the light output of outdoor lights regarding to glare, light pollution and light trespass. |  | n.a. | n.a. | B1-U0-G1 |
| 0TI$bRxzzEBPOscE5oX3a3 | 04-0020 | CIE flux code | Set of values of flux triplet, downward flux fraction and light output ratio, representative of the relative flux distribution of the luminaire, used in the calculation of utilization factors and/or utilances. |  | n.a. | n.a. | 45 79 99 100 79 |
| 3Nafl5m1f91eUjON0JbahC | 04-0021 | spectrum | The spectrum of radiation describes its composition with regard to wavelength. It is presented as a table of energy (eV) depending on wavelength (nm). Default steps 5nm, default interval 380 - 780nm. The photometric file formats ANSI/IES TM-33 or UNI 11733 also contain spectral distributions. |  | 1E0, eV 1E0, nm | n.a. |  |
| 24nX7s16TBMe\_Qfk$rKDn3 | 04-0022 | colour appearance | Monochromatic colour of light (e.g. blue, red, white). As name or a description of the colour or as colour coordinate of an specific colour system (e.g. RGB, CIE 1931 XYZ color space). |  | n.a. | n.a. |  |
| 28UYB1MD91NhF5F8uF6VCZ | 04-0023 | colour rendering index CRI | Coefficient that indicates how well the colour of a lit object is perceived by the human eye. The CRI scale ranges from 1 to 100, where 100 means the perfect rendering properties for a specified set of 8 test colour samples. See also EN 12665:2018. | Ra | 1E0, n.a. | n.a. | 86 |
| 0XeHsouWz8PxASJ4mpkdEY | 04-0024 | correlated colour temperature CCT | The colour temperature of any source of radiation is defined as the temperature (in Kelvin) of a black-body or Planckian radiator whose radiation has the same chromaticity as the source of radiation. See also EN 12665:2018. | Tb | 1E0, K | n.a. | 3,100K |
| 1BRqnx6Qr6G8KJpH$WYPD\_ | 04-0025 | colour temperature adjusting range | Lower and upper border of an adjustable colour temperature of a light source. |  | 1E0, K | n.a. | 2,700K – 6,500K |
| 1Se8FIfFf5JBgGuAx706WI | 04-0047 | correlated colour temperature change characteristics with dimming | *Identical with name.* **Details would be help to understand.** |  | 1E0, K | n.a. | ?? |
| 0RSzTiJYH0Mf1Je5KswHaY | 04-0048 | correlated colour temperature value after dimming | *Identical with name.* **Details would be help to understand.** |  | 1E0, K | n.a. | ?? |
| 1am96tJSj0\_e6A  MEqEh3sq | 04-0026 | IES TM-30-  15 | The CIE 224:2017 TR include Fidelity-Index *Rf* that uses 99 reference colours (CES = Colour Evaluation Samples) to estimate colour rendering  and quality Gamut-Index *Rg* to  estimate color saturation. Also includes a Color Vector Graphic  to see color specific saturations. | Rf  Rg | n.a. | n.a. |  |
| 1dN7YuSk56zRdAl0GO075q | 04-0027 | TLCI | Television Lighting Consistency Index (TLCI) evaluate the spectral power distribution of luminaires for television purposes. The higher result the better colour rendering quality from range 0 to 100. See also EN 12193:2018. Maybe CIE. |  | 1E0, n.a. | n.a. | 90 |
| 3JqWxX\_JPBDPKVYVZAezD6 | 04-0028 | melanopic factor | Melanopic factor of luminous radiation daylight equivalent based on CIE standard illuminant D65. See also CIE S 026 | amel, v, D65 | 1E-3, n.a. | n.a. | 0.619 |
| 21jRpyk419WuBLxjfSqXoY | 04-0029 | PAR | Total photon exposure in the 400 nm to 700 nm waveband. |  | 1E-2, W·m-2 |  |  |
| 1NvFrN1kP1MBnwjfcEtZS9 | 04-0030 | initial colour tolerance | Initial Colour Tolerance in step McAdam ellipses (SDCM). |  | n.a. | 1 SDCM, 2 SDCM, 3 SDCM, 4 SDCM, 5 SDCM, 6 SDCM, 7 SDCM | 2 SDCM |
| 2XiNAY0D121wETmb0AmovG | 04-0031 | maintained colour tolerance | Maintained Colour Tolerance after 6000 h in step McAdam ellipses (SDCM). |  | n.a. | 1 SDCM, 2 SDCM, 3 SDCM, 4 SDCM, 5 SDCM, 6 SDCM, 7 SDCM | 3 SDCM |
| 2VsGUEC0v62AXkp0i8pFrI | 04-0032 | rated chromaticity coordinate values | Chromaticity coordinates ratio of each of a set of 3 tristimulus values to their sum according ISO 11664-1:2007. As the sum of the 3 chromaticity coordinates is equal to 1, two of them are sufficient to define a chromaticity. In the CIE standard colorimetric systems, the chromaticity coordinates are represented by the symbols x, y, z and x10, y10, z10. |  | 1E-2, n.a. | n.a. | x:0.46 y:0.41 |
| 0J5hwLgUf4YAvWrE2XCwq4 | 04-0033 | cut-off angle | Angle, measured up from nadir, between the vertical axis and the first line of sight at which the light sources and the surfaces of high luminance are not visible.  If the beam is not rotation symmetrical the photometric plane needs to specified. |  | 1E0, ° | n.a. |  |
| 0plc23S8D6oOMzeqDx58d1 | 04-0034 | UGR 4H8H 70/50/20 L/Q | UGR table value of the room width of 4 x H and the room length of 8 x H and reflexion factors of 70/50/20 for transverse and parallel to light source axis. |  | 1E0, n.a. | n.a. | 24 25 |
| 0ncEfeE8r1tAckiu$03ei2 | 04-0035 | luminaire luminance | Average of the luminaire surface luminance. See also EN 13032-1:2012. |  | 1E0, cd/m² | n.a. |  |
| 2h\_4I$zWjAF8gO8u$1m5iL | 04-0036 | DSE workplaces approve | Display Screen Equipment workplaces approve according to EN 12464-1:2011. |  | n.a. | n.a. |  |
| 1PL17P9t53oexZksoRkx7Y | 04-0037 | photobiology class | The required measurement methods and the calculation methodology are set in the harmonized standard IEC 62471:2009 / CIE S009:2006 „Photobiological safety of lamps and lamp systems“. The standard divides the sources of incoherent optical radiation into four groups: in the Exempt Group (no photobiological risk) and the Risk Groups 1 to 3 with increasing hazard potential. |  | 1E0, n.a. | 0,  1, 2, 3 |  |
| 3weB85rrjDBOfsW2DojyA8 | 04-0038 | photometric class DIN5040 | German standard with photometric classification. The contributions to the effective luminous flux are then rated and summed up per room segment. |  | n.a. | n.a. | B53 |
| 3bKRB3yaT3s8fMSl\_u6Kyb | 04-0040 | photometric class UTE | French standard with photometric classification. The standard NF (UTE) C71-121 (1995) in France, "Méthode simplifiée de prédétermination des éclairements dans les espaces clos et classification correspondante des luminaires". |  | n.a. | n.a. | 0.54 B + 0.26 T |
| 2EYqu\_hCHFEO0cQ\_qv5wD$ | 04-0042 | flicker | Impression of unsteadiness of visual sensation induced by a light stimulus whose luminance or spectral distribution fluctuates with time. |  | n.a. | n.a. | Modulation Depth (MD), Flicker-Index (FI), (Short-term flicker severity) Pst Values |
| 1rOIzi$gb9FQAy3lzwGIQH | 04-0044 | glare index classes | Glare index classes according EN 13201-2:2003 (2016, CIE) |  | n.a. | D0, D1, D2, D3, D4, D5, D6 | D4 |
| 1ulcTIh3v58Qk62qqSVp9Q | 04-0045 | luminous intensity classes | Luminous intensity classes according EN 13201-2:2003 (2016, CIE) |  | n.a. | G0, G1, G2, G3, G4, G5, G6 | G3 |
| 0DEC0slYfE$vgGuckv0i7w | 04-0046 | stroboscopic visibility measure SVM | The stroboscopic visibility measure (SVM) metric aims to assess the stroboscopic effect which can occur in conjunction with moving objects and light modulation in the frequency range 80 Hz to 2,000 Hz. |  | n.a. | without | 0.9 |

## Table 05 – Sensing device properties

| **GUID** | **ID** | **Name** | **Description** | **Symbol** | **Format, Unit** | **Value set** | **Examples** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2eE6ivKdb3xANg8HGEDFZH | 05-0001 | detector characteristics | Shape of the detection area. |  | n.a. | round, square, other |  |
| 2C6Bl\_wyb9muBfd$Z\_MZiE | 05-0002 | detection area | Defines the detection angle or the detection area for the standard mounting height. For round area: the angular range from 1° to 360° and radius [m]. For rectangular area: L x W [m]. |  | 1E0, ° 1E0, m | n.a. | 4 x 5 |
| 1nkkOblIH5CxeBDCDq2WyX | 05-0003 | detection area adjustable | The type of the adjustment of the detection area. |  | n.a. | no, cover, label, integrated, mechanism, electronic *multiple option selection* |  |
| 2iV9K3GCTD9AwDRJQ2QaSP | 05-0004 | type of detector | The type of detection possible for sensing device. |  | n.a. | Motion Detector, Presence Detector, Daylight Detector *multiple option selection* |  |
| 0eq8JpPhf2mxsbyxHgN4rg | 05-0005 | detection method | Applied technology for detection. |  | n.a. | Passive Infrared, High Frequency, Microwave, Ultrasonic, Camera,  other *multiple option selection* |  |
| 0fafA0Xg17xAyphZUB6DEj | 05-0006 | radiation power | *Identical with name.* |  | 1E-2, W | n.a. |  |
| 3ceOGuHgz4Px\_qL3kqmnLB | 05-0007 | HF frequency | The frequency of High Frequency radiation. |  | 1E-2, GHz | n.a. | 5.8 GHz |
| 02qYRg2w1BRufMbYctgnox | 05-0008 | movement detection area | Detection area for walking for the standard mounting height. For round area: the angular range from 1° to 360° and radius [m]. For rectangular area: L x W [m]. |  | 1E0, ° 1E0, m | n.a. |  |
| 3E7MzAVgHDlBQIdGhHFHL1 | 05-0010 | presence detection area | Detection area for minor movement for the standard mounting height. For round area: the angular range from 1° to 360° and radius [m]. For rectangular area: L x W [m] |  | 1E0, ° 1E0, m | n.a. |  |
| 1ymgRlSerBqBwALgiHgX7j | 05-0011 | measurement method | The measurement of the presence detection area was done according to IEC 63180:2020. |  | n.a. | Yes No |  |
| 1MWULf$c11YBSMTdevnV$G | 05-0012 | detection range adjustable | The method of adjustment of detection range. |  | n.a. | no, cover, label,  integrated mechanism, electronic *multiple option selection* |  |
| 24jtpZAXPBEf5VI4O64p98 | 05-0013 | number of PIR switching zones | Number of PIR Switching zones indicates how sensitive the sensing device is for detection of small movement. |  | 1E0, n.a. | n.a. | 1,400 |
| 1P\_6Ftq01BWh4HTGTurOn8 | 05-0014 | number of detection areas | Number of individually analysable detection areas. |  | 1E0, n.a. | n.a. |  |
| 0ZLLxjlvv6i9vtRcuL17nh | 05-0015 | other sensing devices | Features to measure other parameters by sensing device. |  | n.a. | Illuminance, Temperature on ceiling, Temperature on surface below, Volatile, Organic Compounds,  Humidity,  CO2, Noise, Number of persons *multiple option selection* |  |
| 0yWXemifLBGBnzVtqC\_b8Q | 05-0016 | illuminance range | Determines the illuminance range that can be measured by sensing device. |  | 1E0, lx | n.a. | 0lx - 400lx |
| 3xgdt\_Hlz889Ek6KSUeCE5 | 05-0017 | operation mode | Mode of operation like full automatic or half automatic. |  | n.a. | full automatic,  half automatic,  constant light control,  on/off *multiple option selection* |  |
| 3rSw5\_7y94zxvrAini0W2u | 05-0019 | inter-connection mode | Interconnection with other sensing devices. |  |  | Master/Slave,  Master/ Master |  |
| 18DBbGWJXFbRcORysjk7TX | 05-0020 | channel n | Channel n function. |  |  | no, Light, HVAC, other |  |
| 2MMb3d$6fDdxWoq1W$ZGln | 05-0021 | switch input channel n | Directly connectable switch for channel n. |  | n.a. | Yes No |  |
| 3csxKAakP79PFF8\_VH6\_b4 | 05-0022 | output channel n | *Identical with name.* |  |  | Relay floating, Relay non-floating, Dim |  |
| 1wCN2A$WbE8fKo62d91E\_m | 05-0023 | separate light measurement n | Sensing device channel n has a separate light measurement. |  | n.a. | Yes No |  |
| 28uWq1nqP3XgcTzLzylewL | 05-0024 | delay time | Switch-off delay after last detection. |  | 1E0, s | n.a. |  |
| 07VBqU4vn4ouinVL\_JTUta | 05-0025 | delay time orientation light | Switch-off delay after delay time. |  | 1E0, s | n.a. |  |
| 1M2v5GMAjByhRQPjDnZjSf | 05-0026 | delay time | Switch-off delay after last detection. |  | 1E0, s | n.a. |  |
| 3waXMP9nLE3BiTn9dGUiFJ | 05-0027 | orientation light | Reduced artificial light after the delay-time passed. |  | min % to max % | n.a. |  |
| 0Lb$H8dJ52Zvfl9YSL5M6i | 05-0028 | remote control | Operation/ settings with remote control. |  | n.a. | no, IR, RF, Bluetooth, WiFi *multiple option selection* |  |
| 3l5DBp$G5BYgD3F40Zha26 | 05-0029 | remote control deactivateable | Operation/ settings with remote control deactivate able. |  | n.a. | Yes No |  |
| 10FyhmRzL5cx5mPB\_MdfTB | 05-0030 | switching capacity of sensing device | Switching capacity of sensing device. Power and cos phi. |  | 1E-1, W 1E0, n.a. | n.a. |  |
| 2ogWrMo6H5GxfzoDEWfaui | 05-0031 | sensing device position | Relative position of luminaire and sensing device. |  | 1E0, m | n.a. |  |

## Table 06 – **Mounting & Accessory** properties

| **GUID** | **ID** | **Name** | **Description** | **Symbol** | **Format, Unit** | **Value set** | **Examples** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2Js$jQ5CD1r9USPJVLD951 | 06-0001 | typical assembly site | Typical assembly site in indoor or outdoor premises. |  | n.a. | indoor, outdoor, indoor and outdoor |  |
| 1j$UsOSPP4NBILY9q7mCWW | 06-0002 | mounting place | Place, where the luminaire or the detector can be mounted. |  | n.a. | Ceiling, Grid ceiling, Conductor rail, Wall, Floor, Pole, Desk,  Catenary, other |  |
| 3m5UX0NuH4YRPUJ1EmzXz7 | 06-0003 | mounting type | Type of mounting used for the luminaire or sensing device. |  | n.a. | Surface Mounted, Pendant, Free Standing, Recessed, Partly recessed, Trimless-rescessed, Pole-top, Pole-side entry, Pole-integrated, Conductor rail, connector, other |  |
| 3y6XZJ\_WfAuRm3fgIIBh0R | 06-0004 | mounting point offset position x direction | X position of the point used as origin for the mounting in relation to the middle of the bounding box. Positive values are aligned with the C0 level. Negative values are aligned with the C180 level. |  | 1E0, mm | n.a. |  |
| 1yEEzJyufC8uEtTHhzqxUF | 06-0005 | mounting point offset position y direction | Y position of the point used as origin for the mounting in relation to the middle of the bounding box. Positive values are aligned with the C90 level. Negative values are aligned with the C270 level. |  | 1E0, mm | n.a. |  |
| 34itbruFnDWgvJgUmwG$rq | 06-0006 | mounting point offset position z direction | Z position of the point used as origin for the mounting in relation to the middle of the bounding box. Positive values are aligned with the gamma angle 180° (up). Negative values are aligned with the gamma angle 0° (down).  If the mounting point is at the upper side then this value has to be the half of the height. |  | 1E0, mm | n.a. |  |
| 2ebPfCuzP6euRypnhmgpDH | 06-0007 | default mounting height | Default distance from floor to mounting point of the luminaire or sensing device. |  | 1E0, mm | n.a. |  |
| 3b4KsrGCb2dw2Or1JqfnoW | 06-0008 | default mounting distance | Default distance from ceiling to luminaire or sensing device. |  | 1E0, mm | n.a. |  |
| 3gpxb3oaLA8BkchUDMfQDm | 06-0009 | minimum mounting height | Minimum distance from floor to mounting point of the luminaire or sensing device. |  | 1E0, mm | n.a. |  |
| 33Kd\_d$Xv1GgCDg5DDP5vn | 06-0010 | maximum mounting height | Maximum distance from floor to mounting point of the luminaire or sensing device. |  | 1E0, mm | n.a. |  |
| 3hG4MOE1n7S8AB5aJLRMVj | 06-0011 | applied mounting height | Selected distance from floor to mounting point of the luminaire or sensing device. |  | 1E0, mm | n.a. |  |
| 0nqhEfiCr249NvE9Fv2yTf | 06-0012 | maximum pendant length | *Identical with name.* |  | 1E0, mm | n.a. |  |
| 22ydbaQRPEC9lt\_tK6Qw4Q | 06-0013 | applied pendant length | Selected pendant length in current situation. |  | 1E0, mm | n.a. |  |
| 1x76Uc\_LbDVh6mrLtcsUNS | 06-0014 | spacing between fixing points | Distance between two fixing points. |  | 1E0, mm | n.a. |  |
| 3BBcI8ACb3Ff6$2nRfx7Cg | 06-0015 | mounting outside the arms reach | Mounting outside the hand area |  | n.a. | Yes No |  |
| 2lRl\_DnFf97P6CAO2kfYEp | 06-0016 | windage | Projected area which is used calculate wind resistance for structural calculations. |  | 1E-2, m² | n.a. |  |
| 3T$XxssuT27PO4Ye$SVikp | 06-0017 | ball impact resistant | Ball impact resistant according VDE 0710-13:1981. |  | n.a. | Yes No |  |
| 0uHyOzAgvCyRqsNVDKfTFl | 06-0018 | EX classification properties | Specifies whether the fitting is intended for installation in an explosive environment. ATEX directive (94/9/EC), EN 60079-0:2014, EN 60079-15:2011, EN 60079-7:2016. |  | n.a. | n.a. | Zone 2 II 3GD EEx nA T3 |
| 1PHo3fKGj5Vfdmyy1dCzYd | 06-0019 | type and function of mandatory accessory | Type and function of mandatory electrical, optical or mechanical accessory. |  | n.a. | n.a. |  |
| 2IIcSIkhzBQvi6jCIbKMm$ | 06-0020 | type and function of optional accessory | Type and function of optional electrical, optical or mechanical accessory. |  | n.a. | n.a. | Barndoors, Ring Louver, Softener, Snoose, Cut Off Shilding |
| 1ebB1Zyw92L8aunjbTiNu1 | 06-0021 | applied accessory | Selected accessory. |  | n.a. | n.a. |  |
| 2lG7sF6af5sRrHYUSubDNV | 06-0022 | thickness of ceiling minimum | The minimum thickness of the ceiling for recessed or flush mount. |  | 1E0, mm | n.a. |  |
| 3bww1seCDA3xO1TXuKRIa5 | 06-0023 | thickness of ceiling maximum | The maximum thickness of the ceiling for recessed installation. |  | 1E0, mm | n.a. |  |
| 0DRBpoc$LCOxVU4CNwfUgl | 06-0024 | required space in ceiling | The minimum needed space in a ceiling for recessed luminaires for e.g. for thermal aspects. |  | 1E0, m³ | n.a. |  |
| 2Oq5QYgMf06gdSXn61YqDa | 06-0025 | covering of insulation not allowed | Covering of Insulation in a ceiling is not allowed for the luminaire. |  | n.a. | Yes No |  |
| 33M24NjTn3SxpLaPp27aqY | 06-0026 | wall thickness | The minimum required wall thickness for mounting |  | 1E0, mm | n.a. |  |
| 2qdgZ6NbnCfOAJFXNAjkhw | 06-0027 | with starter | The luminaire has a starter. |  | n.a. | Yes No |  |
| 2gr49\_xaP46O1yRdKp3PXW | 06-0028 | min. ambient temperature | Minimal ambient temperature. | Ta min | 1E0, °C | n.a. | -5°C |
| 0f2B86WL1DauqVXMD$Svdh | 06-0041 | max. ambient temperature | Maximal ambient temperature. | Ta max | 1E0, °C | n.a. | 40°C |
| 2Hn3h7rKb0RhRhIOAzSkNR | 06-0029 | relative humidity range | The relative humidity of environment that enables product to function. | RH | 1E0, % | n.a. | 0% to 85% |
| 3m\_7Bd74r4PwfVU5h\_M3Cc | 06-0030 | conductor rail type | Conductor rail type, if needed. |  | n.a. | n.a. | conductor rail type RA |
| 3Kg5x8kWr1zhsZyRr30Ovs | 06-0031 | bracket | The Luminaire has a boom. |  | n.a. | Yes No |  |
| 2P36C2ZwH7cuGiaRJIyiCQ | 06-0032 | bracket length | Length of the boom. |  | 1E0, mm | n.a. |  |
| 1xemg75ajBTPMS5G7a6XYC | 06-0033 | pole | Specifies which type of pole is suitable. |  | n.a. | Conical, Cylindrical, System pole , Bollard base element, Other |  |
| 3sUm8npDPCLwPblKJJzmT\_ | 06-0034 | pole height | The height of the pole. |  | 1E-2, m | n.a. |  |
| 13nvJo5TjBevj9Xq8d0d\_k | 06-0035 | pole material | The material of which the pole is mainly made of. |  | n.a. | Aluminium, Galvanised steel,  Powdered, Timber, Other |  |
| 14NxmCBlnDDgk6xXOL9Ydl | 06-0036 | pole accessory | Specifies which extra accessory are required for pole. |  | n.a. | Pole door, casika, other |  |
| 2SWE7gcPD5VOe7RpsLynyc | 06-0037 | with ascending aid | Specifies whether the pole has an ascending aid. |  | n.a. | Yes No |  |
| 2rhswpHMv6jxnu7t2SG$8a | 06-0038 | with base plate | Specifies whether the pole has a base plate. |  | n.a. | Yes No |  |
| 1HwoGGCU51GuZcYqOLj23B | 06-0039 | foldable | Specifies whether the pole is foldable. |  | n.a. | Yes No |  |
| 3ZohUj9if8EBuv5LU5H7s9 | 06-0040 | spigot diameter | The size of spigot for mounting on the pole. |  | 1E0, mm | n.a. | 60 mm |
| 0RUiuKsU90ifoIhJ4jl6z1 | 06-0041 | installation specification | Installation specification file. |  | n.a. | n.a. |  |

## Table 07 – Marketing properties

| **GUID** | **ID** | **Name** | **Description** | **Symbol** | **Format, Unit** | **Value set** | **Examples** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3pijcXRsT9mAFfcOBnThIw | 07-0001 | product Name | Luminaire Name. |  | n.a. | n.a. |  |
| 3gmbhSjFD4JOPQZ7\_I$HzY | 07-0002 | manufacturer | *Identical with name.* |  | n.a. | n.a. |  |
| 322VYxGfH6DOZHOmPOqDqO | 07-0003 | URL manufacturer | Manufacturer website address. |  | n.a. | n.a. |  |
| 29UfpgwX5Eyu$KCZIxfJZy | 07-0004 | item number | Product number. |  | 1E0, n.a. | n.a. |  |
| 1UbCUUp8z5Cg3dmIqQ4lsq | 07-0005 | product picture | Picture of the product as file. |  | n.a. | n.a. |  |
| 020\_6qAJj7fO641UbZtyld | 07-0006 | 2D symbol | Symbol in floor plan. |  | n.a. | n.a. |  |
| 0uHyDd8Gb9$fp0seVNo6UJ | 07-0007 | URL product website | Product page website address. Deeplink. |  | n.a. | n.a. |  |
| 2SIvCAZun4Wxd4khWGmURU | 07-0008 | product data sheet | *Identical with name.* |  | n.a. | n.a. |  |
| 3sfcCPOKnB5f2vY\_zitAto | 07-0009 | product group | *Identical with name.* |  | n.a. | n.a. |  |
| 3Im9FC0mL7guhzlonQ2RjN | 07-0010 | application | Field of application for the luminaire. |  | n.a. | Indoor, Outdoor, Domestic Lighting, Office, Retail, Health, Sport,  Hospital,  Architectural,  Others *multiple option selection* |  |
| 1H6f7P7l571P\_cjMg7gPxK | 07-0011 | product family | Manufacturer specific product groups or modular systems. |  | n.a. | n.a. |  |
| 1u894$Gsj3PPXX6m5zKlOG | 07-0012 | description | Description or comments. |  | n.a. | n.a. |  |
| 1PP9ePMOD2Cg8c791pC\_V3 | 07-0013 | features | Free text to describe product. |  | n.a. | n.a. |  |
| 2miHIoA8z7qwVd3XUvTBLm | 07-0059 | special function | special function or extra function |  | n.a. | n.a. | Horticulture |
| 1PfnLpEVb6493m0aO3614o | 07-0014 | tender text | Tender text of the product. |  | n.a. | n.a. |  |
| 2Ofl8\_YFT4IOfQwk92MRwM | 07-0015 | GTIN number | GTIN number (previously EAN) is a unique product/article number for handling, tracking, and identification of products. GTIN (Global Trade Item Number) is issued by GS1. |  | n.a. | n.a. | 4158352058930 |
| 0ZQK4SN5b1\_OIheX6xr9TZ | 07-0016 | EL-number | El-number is a product/ article number for electrical material providing efficient handling and identification of products in the electrical industry. Country specific. |  | n.a. | n.a. |  |
| 0t3b9jtWP9uxX2ceuaw31x | 07-0017 | EBKP number | EBKP number for Swiss tenders. |  | n.a. | n.a. |  |
| 0AO7nhSa9FzBQWUu$Q4E5D | 07-0018 | EFO class number | EFO class number. http://efobasen.efo.no/ |  | n.a. | n.a. |  |
| 1BRkxPEZ94jwUmqiTtK6xv | 07-0019 | conformity mark | Specifies which conformity mark a product has. |  | n.a. | n.a. | CE, CCC, EAC |
| 3AdnhhX2L3bBC6l6oSZU6O | 07-0020 | approval mark | Specifies which approval marks a product has. |  | n.a. | n.a. | ENEC, VDE, UL, IFS Food, Certificate, D sign, IDA |
| 3ZYG5CttLDKh1KDatlaH\_w | 07-0021 | fire protection labelling | Fire protection labelling accordance IEC 60598-1:2020. |  | n.a. | Not allowed to install at normal flammable material (surface),  Not allowed to install at normal flammable material (recessed),  Not allowed to cover with insulation (recessed) |  |
| 3ACN\_DHdbCURKfz1ZxjzME | 07-0022 | fire protection | Fire protection classification for flame retardant and self-extinguishing according to UL94. |  | n.a. | n.a. | UL 94V-0 |
| 2AbG9j5jXCaOYPDNWeOM7T | 07-0023 | chemical resistance | Chemical resistance of the product. |  | n.a. | n.a. |  |
| 1Wn0GwUE1FnAiLZx7prEfj | 07-0024 | radio interference suppression | Specifies whether the product is able to suppress radio interference. |  | n.a. | Yes No |  |
| 33Dkxr2dX6s8LZdwlS$DiR | 07-0025 | RoHs directive | Specifies whether product satisfies the RoHS Directive. |  | n.a. | Yes No |  |
| 3wvXOhA3DA3xJZfFWVhAEE | 07-0026 | energy efficiency class | *Identical with name.* |  | n.a. | n.a. |  |
| 25PgdtZ3T1Jg2kDytRpy4U | 07-0027 | CO2 footprint | Total emissions caused by product manufacturing, expressed in CO2 equivalents. |  | n.a. | n.a. |  |
| 0TsI8tu$n8ZPVg19uWpkrI | 07-0028 | omniclass number | *Identical with name.* |  | n.a. | n.a. | 23.80.70.11 |
| 2$EwGC$sz7aAg8lhZu5Bhj | 07-0029 | assembly code | *Identical with name.* |  | n.a. | n.a. | D5020230 |
| 0UNN88etzCERr47ME5ygfW | 07-0030 | assembly place | A designation where the product was assembled. |  | n.a. | n.a. | London |
| 2LRta8up516AVL46ac887F | 07-0031 | production year | Production year of the final assembly. |  | n.a. | n.a. | 01.12.2000 |
| 2VyjV\_tdrECAYMwT1$nafE | 07-0032 | price | Price per unit. |  | 1E-2, currency | n.a. | 79.19 GBP |
| 06HGeLCbn65vV\_7eBdJolA | 07-0058 | cost of installation | Cost of installation per unit. |  | 1E-2, currency | n.a. | 20 GBP |
| 31u6SnYpz4Bw32mCwGONyo | 07-0033 | basic unit | Basic unit of the product in pieces. |  | 1E0, n.a. | n.a. |  |
| 2dcn2m0XXFA88QqxxSsTnG | 07-0034 | lead time | Expected lead time from placement of order to delivery. |  | n.a. | n.a. | two weeks |
| 2Lel0vZXj7QhDuUJYQqOEc | 07-0035 | delivery | Delivery details including time and date. |  | n.a. | n.a. | 01.12.2000 |
| 0vrx8v9OT8OA5U0yeMudCa | 07-0036 | logistics | Logistical details including storage and placement on site/holding area. |  | n.a. | n.a. |  |
| 0Svsivsef3cA\_xQc5SiL\_b | 07-0037 | execution | Installation sequencing including start date, end date and duration. |  | n.a. | n.a. |  |
| 2stqdB0GP4nxzyYpEVWwqt | 07-0038 | risk management | Risk management plan details associated with the object. |  | n.a. | n.a. |  |
| 1eSA4uAT143wt25u696up8 | 07-0039 | construction design & management | Health and safety issues associated with the safe construction of the object prior to completion. |  | n.a. | n.a. |  |
| 1VfpYas4LATPhtnD2ceh\_Z | 07-0040 | environmental assessment rating | Summary of achieved ratings for the object. For example LEED, ETL, BREEAM or Minergie. The protocol and result of Environmental assessment rating has to specified. |  | n.a. | n.a. |  |
| 1yXI0s7ePEcuYBBrfpkEq9 | 07-0041 | standards | Product standard dependant on type of luminaire. |  | n.a. | n.a. |  |
| 13i4dlOM1FvhfPVt5JElgA | 07-0042 | housing colour | The name of colour of the housing or RAL number. |  | n.a. | n.a. | white, RAL 9010 |
| 18\_K3PHM50sAUN6OEG2oCA | 07-0043 | housing material | The main material which the housing is made of. |  | n.a. | n.a. | Cast Aluminium, Stainless Steel, GFK |
| 1e7TJk\_HfAhhcTKI19SL1I | 07-0044 | housing surface | The surface finish of the housing material. |  | n.a. | n.a. | Matt, Polished, Brushed |
| 1LMif8MLv7ZPUtU0223RaG | 07-0045 | luminaire type CIE 97 | The luminaire types presented in CIE 97:2005 according to calculation of Luminaire Maintenance Factor. |  | n.a. | A Bare batten,  B Open top housing  (natural ventilated and  so called "self-cleaning"  types),  C Closed top housing  (unventilated),  D Enclosed IP2X, E Dust proof IP5X,  F Indirect lighting and uplight,  G Air handling and forced  ventilated |  |
| 0nxCXUkH97wPwN9azBYbMv | 07-0046 | optical system | Description of the optical system used in the luminaire including surface texture. |  | n.a. | n.a. | Reflector Pure aluminium or plastic aluminium vaporized,  Louver, Raster, Prisms, Refractor, Free-form lens, Collimator, Hybrid |
| 2gWWkY9bz7dOFB4Pgn6h7G | 07-0047 | light transmitting surface material | The material the light transmitting surface is made of. |  | n.a. | n.a. | Glass, ESG, VSG, PMMA, PC |
| 1G6UMbjabF6Orb\_N36O2Sf | 07-0048 | timecode of manufacture data creation | Timecode of manufacture data creation. |  | n.a. | n.a. |  |
| 2x$3cuweH5LO5HlpN3AB5I | 07-0049 | update cycle of manufacture data creation | Update cycle of manufacture data creation. |  | n.a. | n.a. |  |
| 3NVB\_\_G3H5NRiaJlgbbc\_9 | 07-0052 | assembly description | *Identical with name.* |  | n.a. | n.a. | Lighting - High Intensity |
| 2vu3$oP75AvhGsrUczduBw | 07-0053 | Omniclass title | *Identical with name.* |  | n.a. | n.a. | Luminaries for Internal Lighting |
| 2vKQ\_e3oT6txePlhDBTVpL | 07-0054 | Uniclass code | *Identical with name.* |  | n.a. | n.a. |  |
| 3r0wL8u3P6\_uzIMJ4Mi8q2 | 07-0055 | cuneco cassification system CCS code | *Identical with name.* |  | n.a. | n.a. |  |
| 1rmuEdFRv8kRsnF7G5uiWM | 07-0056 | NBS code | *Identical with name.* |  | n.a. | n.a. |  |
| 2V7FGx16L3rBlzByIwOg8P | 07-0057 | BIP code | Type ID for different luminaire categories, used in Sweden. http://www.bipkoder.se/#/beteckningar |  | n.a. | n.a. |  |

## Table 08 – Operations & Maintenance properties

| **GUID** | **ID** | **Name** | **Description** | **Symbol** | **Format, Unit** | **Value set** | **Examples** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 34PG7VadHC1QphPcsq0gLM | 08-0001 | operation and maintenance manual | Hyperlink to Manufacturer O&M Data. |  | n.a. | n.a. |  |
| 3v5OARYZT1YPVKbbszPFRk | 08-0002 | burn-in time | Burn in time for the used light source technology. |  | 1E0, h | n.a. |  |
| 029GIxceb34PwAvq2yhDdT | 08-0003 | warranty ID | *Identical with name.* |  | n.a. | n.a. |  |
| 31uC3C$W1CZgyILMlF1ZAl | 08-0004 | maintenance and cleaning | The object's maintenance and cleaning requirements. |  | n.a. | n.a. |  |
| 1LMicN7VzFIhNU67UsE5xV | 08-0005 | health and safety information | The object's health and safety information. |  | n.a. | n.a. |  |
| 2pJ0x1y\_L22u4JkKPyw8n7 | 08-0006 | assembly place | Defining where the assembly is intended to take place, on the building site, a room number or others. |  | n.a. | n.a. |  |
| 2vwn75Kg55RuoCwjIK1l\_l | 08-0007 | circuit number | *Identical with name.* |  | 1E0, n.a. | n.a. | 18 |
| 2xTmgI4Kz07w8ouThMxNae | 08-0008 | maintenance tasks according SFG20 | Maintenance tasks or SFG20 codes to time interval. |  | n.a. | n.a. |  |
| 18n9980eTBYQhPpZr2K$$d | 08-0009 | maintenance required according an operation time | Maintenance tasks required during a specific operation time frame. |  | n.a. | n.a. |  |
| 39JfcO9AbAr9oN6p6vcFzd | 08-0010 | useful life | Useful life of the luminaire with declaration of Lx, By and ambient temperature. |  | n.a. | n.a. | L80B50 50,000h 25°C |
| 3e4zxIOO5EZu5szfTou0vU | 08-0011 | average rated life of light source | Expected lifetime of a light source. Not allowed at LED. | ARL | 1E0, h | n.a. | 20,000h |
| 3sOx4EgST3axh5ZPV$lkbS | 08-0012 | control gear lifetime | Expected lifetime of a control gear. |  | 1E0, h | n.a. |  |
| 0NMpOQzNH679doR\_IuOYUl | 08-0013 | median useful life | Median useful life (of LED modules). Length of time during which 50 % (B50) of a population of operating LED modules of the same type have parametrically failed to provide at least percentage Lx of the initial luminous flux.  Recommend in fixed time value for Median Useful Life 35k, 50k, 75k, and/or 100k hours according application. | Lx | n.a. | n.a. | L80 50,000h |
| 0bitv3Ynz53umOYqdoyGy7 | 08-0014 | rated ambient temperature | Rated ambient performance temperature, highest ambient temperature around the luminaire related to a rated performance of the luminaire under normal operating conditions. | Tq | 1E0, °C | n.a. | 40°C |
| 19BQiuhJj8qgDgvk6nbxxB | 08-0015 | abrupt failure value | Abrupt failure value AFV percentile of LED modules failing to operate at median useful life, Lx. AFV depended significantly on the control gear failure. | AFV | 1E0, % | n.a. |  |
| 2Ys5wBTunE\_AZBAQnsTadY | 08-0016 | lamp lumen maintenance factor | The lamp lumen maintenance factor is the ratio of luminous flux at a specific time compared to a new light source. It is describing the aging of the light source or the reduction of light intensity over time. The time for the LLMF is related to the median useful life. | LLMF | 1E-2, n.a. | n.a. | 0.96 |
| 3i22ssv3nDYAGDmO9prt0t | 08-0017 | lamp survival factor | The lamp survival factor depends on the service lifetime of a light source. LSF=1 is saying that there will be no loss of light because of light source failure. | LSF | 1E-2, n.a. | n.a. |  |
| 3zQynANFH5AxO46k9nGJV\_ | 08-0018 | luminaire maintenance factor | The luminaire maintenance factor is the ratio of the luminaires luminous flux before and after cleaning. It is presented as a table of environmental conditions depending on the cleaning period of the luminaire in years. Classification of the environmental conditions based on CIE 97:2005:  VC Very clean, C Clean, N Normal, D Dirty. | LMF | 1E-1, years n.a. | n.a. |  |
| 0$H\_zVMtjA3vm1ce$LVc1D | 08-0036 | overall MF | Overall MF required to adapt the variations of MF standards.  E.g., Japanese Maintenance Factor standard JIEG-001(2013) defines and uses “Ml”, “Md” instead of “LLMF”, “LSF”, “LMF”, “RSMF”. The Japanese MF Procedure is different from CIE 97:2005. Overall MF covers the difference. | MF | 1E-2 | n.a. |  |
| 1HsN$oJ6j5chUD\_Pqk7bYq | 08-0019 | amount of switching cycles | Amount of switching cycles. |  | 1E0, n.a. | n.a. |  |
| 0M6duWSxD2KBE3HH3CEdiB | 08-0020 | disposal symbol | *Identical with name.* |  | n.a. | n.a. |  |
| 2wGK64QFXCNBTJGIZ9W9T3 | 08-0021 | replace cover glass | *Identical with name.* |  | n.a. | Yes No |  |
| 3Kn4FA4wT8fwq6TqMs8LSq | 08-0022 | battery exchange possible | *Identical with name.* |  | n.a. | Yes No |  |
| 2hiYLf6991OwJ7Ra5hI8RK | 08-0023 | battery exchange after x years | The battery's service life. |  | 1E0, years | n.a. |  |
| 2AvYrjYPr0sRr1MihNFaSY | 08-0024 | access clearance bottom | Access required for maintenance of this item. |  | n.a. | n.a. |  |
| 3fYv9z7yf7cwK81XdvBN10 | 08-0025 | access clearance left | Access required for maintenance of this item. |  | n.a. | n.a. |  |
| 0I4OByNdDC4BHSKOAD8s5t | 08-0026 | access clearance right | Access required for maintenance of this item. |  | n.a. | n.a. |  |
| 1aiuNjGlP5CeuWyc0dii8P | 08-0027 | access clearance front | Access required for maintenance of this item. |  | n.a. | n.a. |  |
| 05kD42GYbEFQDgWG2CHKt5 | 08-0028 | access clearance rear | Access required for maintenance of this item. |  | n.a. | n.a. |  |
| 1\_oAxKXSb5R97lfGHcRkN8 | 08-0029 | access clearance top | Access required for maintenance of this item. |  | n.a. | n.a. |  |
| 03XhO08LHDWvZXteTHjOi9 | 08-0030 | acoustic absorption table | The sound absorption coefficient (ISO 354:2003) presented in table depending on frequencies in the human hearable range. |  | 1E-2, n.a. 1E0, Hz | n.a. | 1.6 at 500Hz |
| 1Kv1pLf6D1dA85JgnKKPT1 | 08-0031 | acoustic absorption average | Acoustic absorption in average over the audible range. |  | Factor | n.a. | 1.2 |
| 0sS$18Rbj3zgOAOm28vPEj | 08-0032 | noise level | Noise level which is produced by the luminaire. |  | 1E-2, dB(A) | n.a. |  |
| 1HQ71YJV93sPROewsL6c$7 | 08-0033 | name of switch | Related switch ID. |  | n.a. | n.a. |  |
| 2tDs9PFTzF$wJWyj72SQyt | 08-0034 | circuit number and | Related Circuit Number |  | n.a. | n.a. |  |
| 2dlY1dvhzC4R5KMzF6j4fE | 08-0035 | PNL number | PNL Name. Check Panel Load / What is it? Is it a name or a number? |  | n.a. | n.a. |  |

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