epddanmark

ECO PLATFORM EPD VERIFIED

Owner: LITE A/S
No.: MD-25004-EN
Issued: 02-04-2025
Valid to: 02-04-2030

3rd PARTY **VERIFIED**

# EPD

VERIFIED ENVIRONMENTAL PRODUCT DECLARATION | **ISO 14025 & EN 15804**

**Owner of declaration**
LITE A/S
Øster Fælledvej 11
34692432

**Programme**
EPD Danmark
www.epddanmark.dk

☐ Industry EPD
☒ Product EPD

**Declared product(s)**
This EPD covers following lightning system
- NIGHTLITE

Number of declared datasets/product variations: 1

**Production site**
Shenzhen, China

**Use of Guarantees of Origin**
☒ No certificates used
☐ Electricity covered by GoO
☐ Biogas covered by GoO

**Declared/ functional unit**
1 piece of lighting system used for 20 year outside of buildings.

**Year of production site data (A3)**
2022

**EPD version**
Version 1.0.

**Issued:** 02-04-2025
**Valid to:** 02-04-2030

**Basis of calculation**
This EPD is developed and verified in accordance with the European standard EN 15804+A2.

**Comparability**
EPDs of construction products may not be comparable if they do not comply with the requirements in EN 15804. EPD data may not be comparable if the datasets used are not developed in accordance with EN 15804 and if the background systems are not based on the same database.

**Validity**
This EPD has been verified in accordance with ISO 14025 and is valid for 5 years from the date of issue.

**Use**
The intended use of an EPD is to communicate scientifically based environmental information for construction products, for the purpose of assessing the environmental performance of buildings.

**EPD type**
☐Cradle-to-gate with modules C1-C4 and D
☐Cradle-to-gate with options, modules C1-C4 and D
☒Cradle-to-grave and module D
☐Cradle-to-gate
☐Cradle-to-gate with options

CEN standard EN 15804 serves as the core PCR

Independent verification of the declaration and data, according to EN ISO 14025

☐ internal ☒ external

Third party verifier:

*Mie Ostenfeldt*
*Ostenfeldt Consulting*

*Martha Katrine Sørensen*
*EPD Danmark*

| Life cycle stages and modules (MND = module not declared) | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Product | | | Construction process | | Use | | | | | | | End of life | | | | Beyond the system boundary |
| Raw material supply | Transport | Manufacturing | Transport | Installation process | Use | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | De-construction demolition | Transport | Waste processing | Disposal | Re-use, recovery and recycling potential |
| A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
| X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |

# Product information

### Product description

The main product components are shown in the table below.

| NightLITE | Weight in percent |
|---|---|
| Housing | 47,98% |
| Horizontal Adapter cover | 5,30% |
| Vertical Adapter cover | 5,59% |
| Cooling panel | 4,71% |
| Driver plate | 2,06% |
| LED board | 2,21% |
| Driver | 3,46% |
| Terminal parts for PCB | 0,07% |
| Terminal parts for driver | 0,37% |
| Seal | 0,59% |
| Glass | 15,90% |
| PC cover | 8,83% |
| Surge Protecion Device | 0,59% |
| M20 Cable gland | 0,29% |
| Lens | 0,53% |
| Breather | 0,12% |
| Screw for Cooling panel | 0,44% |
| Screw for pole | 0,59% |
| Screw for driver plate | 0,37% |
| **Sum** | **100%** |

### Product packaging:

The composition of the sales- and transport packaging of the product is shown in the table below.

| Material | Weight of packaging material (kg) | Weight-% of packaging |
|---|---|---|
| Wooden box | 3,13 | 89,3% |
| Carton | 0,38 | 10,7% |
| Total | 3,51 | 100% |

### Representativity

This declaration, including data collection and the modeled foreground system including results, represents the production of NIGHTLITE on the production site located in China. Product specific data are based on average values collected in the year 2022. Background data are based on Ecoinvent 3.10 (EN15804) and are less than 10 years old. Generally, the used background datasets are of high quality, and the majority of the datasets are only a couple of years old.

### Hazardous substances

NIGHTELITE do not contain substances listed in the "Candidate List of Substances of Very High Concern for authorization" with a content exceeding 0,1 weight % (http://echa.europa.eu/candidate-list-table). Absence of these substances is declared by the producer, LITE and all the suppliers of the components.

(http://echa.europa.eu/candidate-list-table)

### Product(s) use

The NIGHTLITE product is used outside of buildings on streets and sidewalks. NIGHTLITE is attached to the ground via standardized streetlight masts.

### Essential characteristics

NIGHTLITE has been developed with the desire to create a new design-classic within street light luminaires that easily blend into its surroundings, and at the same time excels with its simple and timeless look. Functionality and flexibility go hand in hand and are beautifully expressed in this innovative design. NIGHTLITE exceeds other products on the market, as it can be delivered both with and without the luminous acrylic screen that encloses the entire luminaire at the bottom. This feature adds an extra element of design to the luminaire during the evening hours. NIGHLITE has also been developed with an incredibly simple mounting method, which does not change the shape of the luminaire, whether it is mounted on a vertical or horizontal mast. The luminaire fits a variety of mast types, and does particularly well on 89 mm diameter masts

(Ø89), where NIGHTLITE forms a nice smooth transition to the mast. For the same reason, the luminaire also does well as decorative park lighting.

In table below are technical properties visible for the NIGHTLITE product. The properties are based on data from a light measurement report made by the Technical University of Denmark.

| Technical properties | NIGHTLITE |
|---|---|
| Colour temperature | 4000K |
| Glare value | N/A |
| Protection class | IP66 |
| Isolation class | Class II |
| Dimable | Yes |

Further technical information can be obtained by contacting the manufacturer or on the manufacturers website: https://lite-led.dk/

### Reference Service Life (RSL)

The reference Service Life for NIGHTLITE are set to 20 years, as described in the reference PCR Part B: Requirements on the EPD for Luminaires, lamps and components for luminaires, version 7

This EPD follows additional requirements for construction products considered as Electronic or Electric Equipment, EN15804+A2/EN 50693

### Picture of product(s)

NIGHTLITE:

# LCA background

### Declared unit

The LCI and LCIA results in this EPD relates to one light system for outdoor use.

| Name | Value | Unit |
|---|---|---|
| Declared unit | 1 | Lighting system used for 20 years |
| Density | - | NA |
| Conversion factor to 1 kg. | 0,1 | Light system & kg |

### Functional unit

Not defined

### PCR

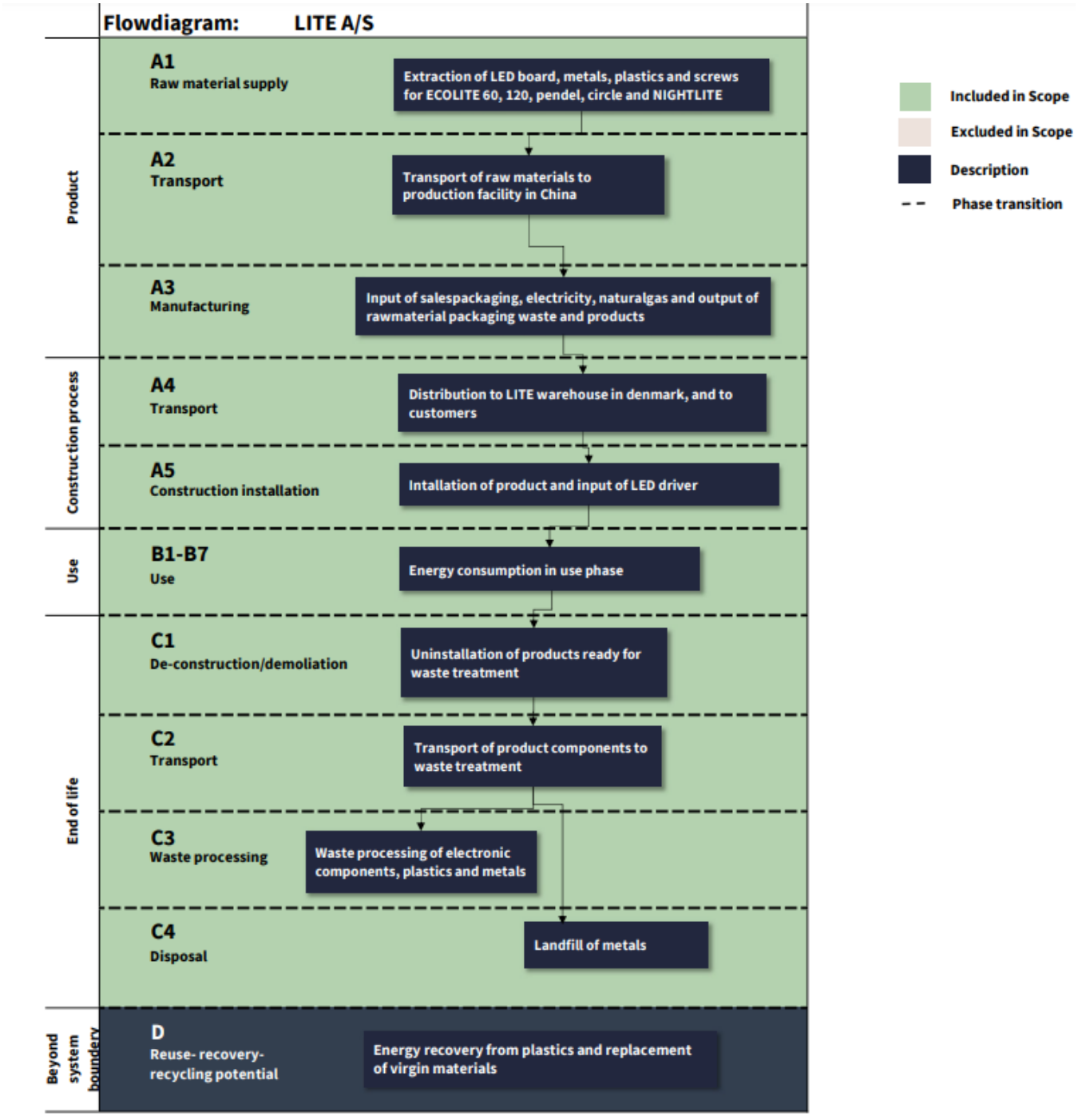
This EPD is developed according to the core rules for the product category of construction products in EN 15804, and The PCR Part B: Requirements on the EPD for Luminaires, lamps and components for luminaires, version 7

### Energy modelling principles

LITE does not purchase guarantees of origin. The LCA study is modelled as flowed:

The foreground system is modeled by using the Chinese southern power mix and the Danish residual mix for Denmark. The background system, which is the energy used in module B6, is modeled by using the Danish market mix, since the product is sold on the Danish market. For information about both energy mixes see table below:

| Dataset | EF | Unit |
|---|---|---|
| Electricity, market mix 2021 (CN) | 0,68 | kg $CO_2$e/kWh |
| Electricity, residual mix 2022 (DK) | 0,65 | kg $CO_2$e/kWh |
| Electricity, market mix 2020 (DK) | 0,156 | kg $CO_2$e/kWh |


Flowdiagram: LITE A/S
Product
A1
Raw material supply
Extraction of LED board, metals, plastics and screws for ECOLITE 60, 120, pendel, circle and NIGHTLITE
A2
Transport
Transport of raw materials to production facility in China
A3
Manufacturing
Input of salespackaging, electricity, naturalgas and output of rawmaterial packaging waste and products
Construction process
A4
Transport
Distribution to LITE warehouse in denmark, and to customers
A5
Construction installation
Intallation of product and input of LED driver
Use
B1-B7
Use
Energy consumption in use phase
End of life
C1
De-construction/demoliation
Uninstallation of products ready for waste treatment
C2
Transport
Transport of product components to waste treatment
C3
Waste processing
Waste processing of electronic components, plastics and metals
C4
Disposal
Landfill of metals
Beyond system boundery
D
Reuse- recovery- recycling potential
Energy recovery from plastics and replacement of virgin materials
Included in Scope
Excluded in Scope
Description
Phase transition

## System boundary

This EPD is based on a cradle-to-gave LCA, in which 100 weight-% has been accounted for.

The general rules for the exclusion of inputs and outputs follows the requirements in EN 15804, 6.3.5, where the total of neglected input flows per module shall be a maximum of 5 % of energy usage and mass and 1 % of energy usage and mass for unit processes.

**Product stage (A1-A3) includes**:

A1 – Extraction and processing of raw materials

A2 – Transport to the production site

A3 – Manufacturing processes

For production of NIGHTLITE raw materials are purchased from various but mostly Chinese suppliers and are transported to the production facility in Shenzhen. The transport is mostly done by lorry but some raw materials are transported overseas by ship. At the production facility in China, the components are assembled and tested to make sure the NIGHTLITE product function as intended. After the quality test, the products are packed and prepared for shipment. The LCA results are declared in aggregated form for the product stage, which means, that the sub-modules A1, A2 and A3 are declared as one module A1-A3.

**Construction process stage (A4-A5) includes:**

When the NIGHTLITE product are leaving the production facility it is first transported to LITE's warehouse in Nørresundby, Denmark, before transported to its customers. This transportation is done by ship from China and from lorry in Danish port. The distance to the customer from the warehouse in Nørresundby, is estimated from average distance to customers based on 2022 sales data. The module A5 which account for the installation of the product consist of waste handling the sales packaging, and input of the driver which shall be connected to the products in order for it to operate. The energy use for the installation is not included due cut-off rules.

**Use stage (B1-B7) includes:**

In the use stage nothing is declared in module B1-B5 and module B7, but the energy use (B6) are accounted for, for the NIGHTLITE product. The total energy use, are defined by specifications from LITE and from mandatory values from the PCR Part B: Requirements on the EPD for Luminaires, lamps and components for luminaires, version 7

The electricity use in module B6 are set to correspond 15 years of use based on conditions from outdoor use on streets.

**End of Life (C1-C4) includes:**

C1- De-construction

C2- Transport

C3- Waste processing

C4- Final disposal

The end-of-life modules consist of the transportation of the different products to waste handling. Since NIGHTLITE are build for disassembly it is assumed that the different material components are separated and sorted accordingly. It is estimated that 98% of the metals will be sent to recycling whereas the last 2% are lost to landfill. 100% of the electronics will be sent to sorting but 20% are recycled and the 80% are landfilled. 100% of the plastic are estimated to be incinerated. The estimations are based on data from Danish Environmental Agency and research articles about waste management.

**Re-use, recovery and recycling potential (D) includes:**

The module D accounts for any credit obtained by the waste handling method which for this system means that the recycled metals can substitute virgin metals, the recycled electronic can substitute new electronic devices and the incinerated materials will generate heat and electricity which can substitute natural gas and fossil energy in the Danish energy mix.

# LCA results

| Environmental Impacts per Light System | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B1-B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| GWP-total | kg $CO_2$ eq, | 9,08E+01 | 2,65E+00 | 6,28E+00 | 0,00E+00 | 6,34E+02 | 0,00E+00 | 0,00E+00 | 2,98E-01 | 1,90E+00 | 2,72E-03 | -5,59E+01 |
| GWP-fossil | kg $CO_2$ eq, | 9,69E+01 | 2,65E+00 | 1,12E-01 | 0,00E+00 | 5,94E+02 | 0,00E+00 | 0,00E+00 | 2,97E-01 | 1,90E+00 | 2,71E-03 | -5,62E+01 |
| GWP-biogenic | kg $CO_2$ eq, | -6,17E+00 | -2,38E-04 | 6,17E+00 | 0,00E+00 | 3,71E+01 | 0,00E+00 | 0,00E+00 | 2,01E-04 | 0,00E+00 | 3,49E-07 | 3,80E-01 |
| GWP-luluc | kg $CO_2$ eq, | 1,06E-01 | 1,27E-03 | 3,35E-05 | 0,00E+00 | 2,52E+00 | 0,00E+00 | 0,00E+00 | 9,89E-05 | 1,01E-04 | 1,41E-06 | -8,09E-02 |
| ODP | kg CFC 11 eq, | 2,95E-06 | 4,12E-08 | 1,83E-09 | 0,00E+00 | 1,27E-05 | 0,00E+00 | 0,00E+00 | 5,91E-09 | 3,35E-09 | 7,85E-11 | -4,35E-07 |
| AP | mol $H^+$ eq, | 6,31E-01 | 5,95E-02 | 6,83E-04 | 0,00E+00 | 3,57E+00 | 0,00E+00 | 0,00E+00 | 6,20E-04 | 1,26E-03 | 1,92E-05 | -4,78E-01 |
| EP-freshwater | kg P eq, | 7,80E-02 | 1,09E-04 | 2,56E-05 | 0,00E+00 | 4,36E-01 | 0,00E+00 | 0,00E+00 | 2,01E-05 | 9,74E-05 | 2,25E-07 | -1,69E-01 |
| EP-marine | kg N eq, | 1,27E-01 | 1,48E-02 | 3,43E-04 | 0,00E+00 | 6,42E-01 | 0,00E+00 | 0,00E+00 | 1,49E-04 | 4,79E-04 | 7,33E-06 | -1,17E-01 |
| EP-terrestrial | mol N eq, | 1,37E+00 | 1,65E-01 | 3,17E-03 | 0,00E+00 | 7,72E+00 | 0,00E+00 | 0,00E+00 | 1,61E-03 | 3,87E-03 | 8,00E-05 | -1,37E+00 |
| POCP | kg NMVOC eq, | 4,01E-01 | 4,59E-02 | 9,36E-04 | 0,00E+00 | 1,93E+00 | 0,00E+00 | 0,00E+00 | 1,03E-03 | 1,07E-03 | 2,87E-05 | -3,43E-01 |
| ADPm[1] | kg Sb eq, | 1,90E-02 | 4,09E-06 | 2,87E-07 | 0,00E+00 | 1,86E-02 | 0,00E+00 | 0,00E+00 | 9,66E-07 | 1,89E-06 | 4,22E-09 | -6,10E-02 |
| ADPf[1] | MJ | 1,23E+03 | 3,37E+01 | 1,34E+00 | 0,00E+00 | 9,55E+03 | 0,00E+00 | 0,00E+00 | 4,18E+00 | 3,21E+00 | 6,66E-02 | -7,04E+02 |
| WDP[1] | $m^3$ world eq, deprived | 2,74E+01 | 1,26E-01 | 2,23E-02 | 0,00E+00 | 1,44E+03 | 0,00E+00 | 0,00E+00 | 2,35E-02 | 2,41E-01 | 2,96E-03 | -1,71E+01 |
| Caption | GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-biogenic = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidifcation; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use | | | | | | | | | | | |
| Disclaimer | [1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. | | | | | | | | | | | |

| Additional Environmental Impacts per Light System | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B1-B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| PM | [Disease incidence] | 6,44E-06 | 1,09E-07 | 1,08E-08 | 0,00E+00 | 2,34E-05 | 0,00E+00 | 0,00E+00 | 2,19E-08 | 9,70E-09 | 4,37E-10 | -4,00E-06 |
| IRP[2] | [kBq U235 eq,] | 9,86E+00 | 2,27E-02 | 1,68E-03 | 0,00E+00 | 2,12E+02 | 0,00E+00 | 0,00E+00 | 5,43E-03 | 2,98E-02 | 4,24E-05 | -5,43E+00 |
| ETP-fw[1] | [CTUe] | 1,80E+03 | 6,72E+00 | 8,10E-01 | 0,00E+00 | 4,05E+03 | 0,00E+00 | 0,00E+00 | 1,14E+00 | 4,61E+00 | 9,10E-03 | -4,60E+03 |
| HTP-c[1] | [CTUh] | 3,32E-07 | 1,29E-08 | 1,32E-09 | 0,00E+00 | 2,77E-06 | 0,00E+00 | 0,00E+00 | 2,11E-09 | 1,36E-09 | 1,23E-11 | -1,74E-06 |
| HTP-nc[1] | [CTUh] | 2,33E-06 | 1,23E-08 | 6,65E-09 | 0,00E+00 | 1,99E-05 | 0,00E+00 | 0,00E+00 | 2,71E-09 | 8,50E-09 | 1,20E-11 | -3,29E-06 |
| SQP[1] | - | 1,40E+03 | 7,61E+00 | 7,41E-01 | 0,00E+00 | 1,66E+04 | 0,00E+00 | 0,00E+00 | 2,53E+00 | 3,60E+00 | 1,31E-01 | -4,61E+02 |
| Caption | PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality | | | | | | | | | | | |
| Disclaimers | [1] The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.<br><br>[2] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle, It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator. | | | | | | | | | | | |

| Resource Use per Light System | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B1-B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| PERE | [MJ] | 3,63E+02 | 3,36E-01 | 2,63E-02 | 0,00E+00 | 1,47E+04 | 0,00E+00 | 0,00E+00 | 7,18E-02 | 2,88E-01 | 6,17E-04 | -6,15E+01 |
| PERM | [MJ] | 5,04E+01 | 0,00E+00 | -5,04E+01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| PERT | [MJ] | 4,13E+02 | 3,36E-01 | -5,04E+01 | 0,00E+00 | 1,47E+04 | 0,00E+00 | 0,00E+00 | 7,18E-02 | 2,88E-01 | 6,17E-04 | -6,15E+01 |
| PENRE | [MJ] | 1,23E+03 | 3,37E+01 | 1,34E+00 | 0,00E+00 | 9,55E+03 | 0,00E+00 | 0,00E+00 | 4,18E+00 | 3,21E+00 | 6,66E-02 | -7,04E+02 |
| PENRM | [MJ] | 2,49E+01 | 0,00E+00 | -3,87E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | -2,10E+01 | 0,00E+00 | 0,00E+00 |
| PENRT | [MJ] | 1,26E+03 | 3,37E+01 | -2,53E+00 | 0,00E+00 | 9,55E+03 | 0,00E+00 | 0,00E+00 | 4,18E+00 | -1,78E+01 | 6,66E-02 | -7,04E+02 |
| SM | [kg] | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| RSF | [MJ] | 1,61E-01 | 8,06E-05 | 7,66E-06 | 0,00E+00 | 3,68E-02 | 0,00E+00 | 0,00E+00 | 2,45E-05 | 1,05E-04 | 3,46E-07 | 2,88E-01 |
| NRSF | [MJ] | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| FW | [$m^3$] | 7,49E-01 | 3,08E-03 | 5,32E-04 | 0,00E+00 | 3,50E+01 | 0,00E+00 | 0,00E+00 | 5,80E-04 | 5,69E-03 | 6,93E-05 | 2,88E-01 |
| Caption | PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water | | | | | | | | | | | |

| Waste Categories and Output Flows per Light System | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B1-B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| HWD | [kg] | 9,55E+00 | 4,64E-02 | 2,12E-02 | 0,00E+00 | 5,83E+01 | 0,00E+00 | 0,00E+00 | 6,10E-03 | 5,26E-02 | 7,39E-05 | -7,68E+00 |
| NHWD | [kg] | 1,99E+02 | 7,30E-01 | 3,48E+00 | 0,00E+00 | 2,13E+03 | 0,00E+00 | 0,00E+00 | 1,29E-01 | 1,48E+00 | 1,69E-03 | -1,27E+02 |
| RWD | [kg] | 2,39E-03 | 5,58E-06 | 4,19E-07 | 0,00E+00 | 4,83E-02 | 0,00E+00 | 0,00E+00 | 1,35E-06 | 7,43E-06 | 1,03E-08 | -1,35E-03 |
| CRU | [kg] | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| MFR | [kg] | 1,00E-03 | 0,00E+00 | 3,76E-01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 4,57E+00 | 0,00E+00 | 0,00E+00 |
| MER | [kg] | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| EEE | [MJ] | 2,23E+00 | 0,00E+00 | 5,45E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 2,81E+00 | 0,00E+00 | 0,00E+00 |
| EET | [MJ] | 4,46E+00 | 0,00E+00 | 1,10E+01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 5,48E+00 | 0,00E+00 | 0,00E+00 |
| Caption | HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy | | | | | | | | | | | |

| BIOGENIC CARBON CONTENT PER LIGHT SYSTEM | | |
|---|---|---|
| **Parameter** | **Unit** | **At the factory gate** |
| Biogenic carbon content in product | [kg C] | 0 |
| Biogenic carbon centent in accompanying packagaing | [kg C] | 2,20 |
| Note | 1 kg biogenic carbon is equivalent to 44/12 kg of $CO_2$ | |

# Additional information

### LCA interpretation

The most contributing process to the results is the energy use in module B6. This is due to the energy demand over a 20 year period, which is calculated to be 3831 kWh for the NIGHTLITE product. The most important and contributing raw materials are the electronics and the aluminum parts for the product.

### Technical information on scenarios

**Transport to the building site (A4)**

| Scenario information | Value | Unit |
|---|---|---|
| Fuel type | Diesel | - |
| Fuel consumption | 0,0013 | L/tkm |
| Vehicle type | Lorry | - |
| Transport distance | 65,22 | km |
| Capacity utilisation (including empty runs) | 50 | % |
| Gross density of products transported | N/A | $kg/m^3$ |
| Capacity utilisation volume factor | N/A | - |

**Installation of the product in the building (A5)**

| Scenario information | Value | Unit |
|---|---|---|
| Ancillary materials | | kg |
| Water use | - | $m^3$ |
| Other resource use | - | kg |
| Energy type and consumption | - | kWh |
| Waste materials | 3,51 | kg |
| Output materials | - | kg |
| Direct emissions to air, soil or water | - | kg |

**Reference service life**

| RSL information | | Unit |
|---|---|---|
| Reference service Life | 20 | Years |
| Declared product properties | | As appropriate |
| Design application parameters | | As appropriate |
| Assumed quality of work | | As appropriate |
| Outdoor environment | | As appropriate |
| Indoor environment | | As appropriate |
| Usage conditions | | As appropriate |
| Maintenance | | As appropriate |

**Use (B1-B7)**

| Scenario information | Value | Unit |
|---|---|---|
| **B6 – Use of energy** | | |
| Type of energy carrier | 3831 | kWh |
| Power output of equipment | 90 | kW |
| Characteristic performance | | As appropriate |
| Further assumptions for scenario development | | As appropriate |

**End of life (C1-C4)**

| Scenario information | Value | Unit |
|---|---|---|
| Collected separately | | kg |
| Collected with mixed waste | | kg |
| For reuse | | kg |
| For recycling | 4,92 | kg |
| For energy recovery | 4,93 | kg |
| For final disposal | 0,43 | kg |
| Assumptions for scenario development | | As appropriate |

**Re-use, recovery and recycling potential (D)**

| Scenario information/Materiel | Value | Unit |
|---|---|---|
| Displaced material | 3,77 | kg |
| Energy recovery from waste incineration | 31,4 | MJ |

### Indoor air

*The EPD does not give information on release of dangerous substances to indoor air because the horizontal standards on the relevant measurements are not available. Read more in EN15804+A1 chapter 7.4.1.*

### Soil and water

*The EPD does not give information on release of dangerous substances to soil and water because the horizontal standards on the relevant measurements are not available. Read more in EN15804+A1 chapter 7.4.2.*

# References

| | |
|---|---|
| **Publisher** | www.epddanmark.dk<br>Template version 2024.1 |
| **Programme operator** | Danish Technological Institute<br>Gregersensvej<br>DK-2630 Taastrup<br>www.teknologisk.dk |
| **LCA-practitioner** | *Jón Jacobsen and Lasse Langstrup Hägerstrand*<br>*Transition ApS*<br>*Regnbuepladsen 7, 5.sal 1550 København V* |
| **LCA software /background data** | *SimaPro 9.6.0.0*<br>*Ecoinvent 3.10 + EN 15804 reference package 3.1* |
| **3rd party verifier** | Mie Ostenfeldt<br><br>Ostenfeldt Consulting,<br>mie@ostenfeldtconsulting.dk |

**General programme instructions**
General Programme Instructions, version 2.0, spring 2020
www.epddanmark.dk

**EN 15804**
DS/EN 15804 + A2:2019 - "Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products"

**PCR Part B:**
*Requirements on the EPD for Luminaires, lamps and components for luminaires, version 7*

**EN 15942**
DS/EN 15942:2011 – " Sustainability of construction works – Environmental product declarations – Communication format business-to-business"

**ISO 14025**
DS/EN ISO 14025:2010 – " Environmental labels and declarations – Type III environmental declarations – Principles and procedures"

**ISO 14040**
DS/EN ISO 14040:2008 – " Environmental management – Life cycle assessment – Principles and framework"

**ISO 14044**

DS/EN ISO 14044:2008 – ” Environmental management – Life cycle assessment – Requirements and guidelines”