# Environmental Product Declaration

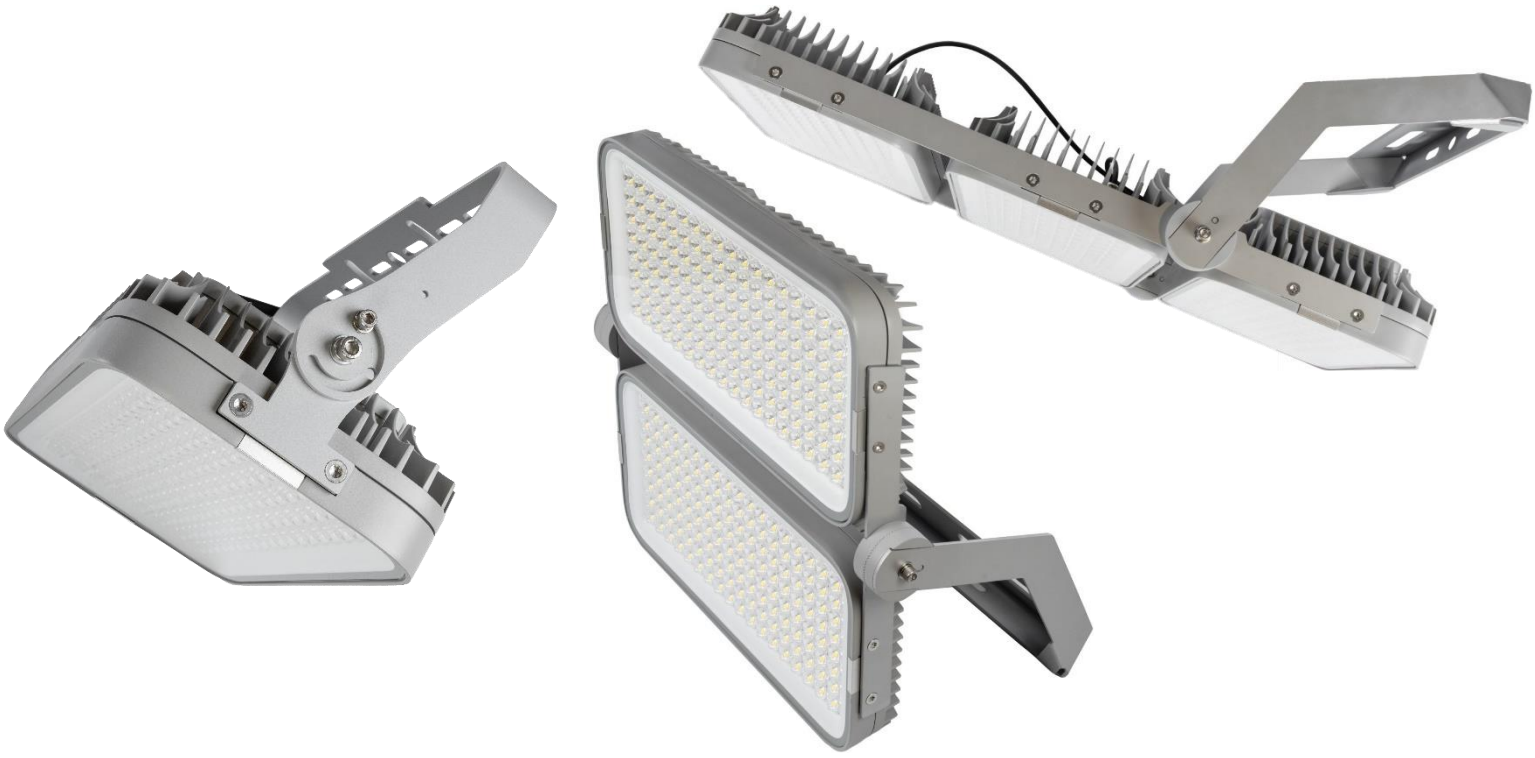
In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

## *GEO FL L*

from

***Pedrobeat AS***

| | |
|---|---|
| Programme: | The International EPD System, www.environdec.com |
| Programme operator: | EPD International AB |
| Type of EPD: | EPD of multiple products, based on a representative product |
| EPD registration number: | EPD-IES-0031109:001 |
| Version date: | 2026-04-07 |
| Validity date: | 2031-04-06 |
| | *An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com* |



# GENERAL INFORMATION

| Programme Information | |
|---|---|
| **Programme:** | The International EPD® System |
| **Address:** | EPD International AB<br>Box 210 60<br>SE-100 31 Stockholm<br>Sweden |
| **Website:** | www.environdec.com |
| **E-mail:** | support@environdec.com |

| Product Category Rules (PCR) |
|---|
| **CEN standard EN 15804 serves as the Core Product Category Rules (PCR)** |
| **Product Category Rules (PCR): PCR 2019:14 Construction products (version 2.0.1)** |
| **PCR review was conducted by: The Technical Committee of the International EPD® System. Chair of the PCR review is Rob Rouwette. The review panel may be contacted via info@environdec.com.** |

| Third-party Verification |
|---|
| Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:<br><br>☒ EPD verification by individual verifier<br><br>Third-party verifier: prof. Ing. Silvia Vilčeková, Ph.D., Silcert, s.r.o.<br><br>Approved by: The International EPD® System |
| Procedure for follow-up of data during EPD validity involves third party verifier:<br><br>☐ Yes ☒ No |

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison.
For further information about comparability, see EN 15804 and ISO 14025.

# INFORMATION ABOUT EPD OWNER

Owner of the EPD: Pedrobeat AS
Address: Harku 27, 11612 Tallinn Estonia
Contact: Ave Keenan, ave.keenan@lightholm.com
Address and contact information of the LCA practitioner commissioned by the EPD owner
Mg.sc.ing. Evita Kairiša, Lightholm
“Ezisi”, Marupe Rural Territory, Marupe Municipality, Latvia
Contact information: evita.kairisa@lightholm.com

Description of the organisation:

Since 2014, Lightholm has been a trusted leader in innovative industrial lighting solutions, delivering expertise across diverse needs—from streets and sports facilities to complex environments like harbors and oil rigs. Designed in Sweden and crafted in the EU, its products embody Nordic innovation and European precision.

Lightholm stands out for its client-focused approach, anticipating needs, tailoring solutions, and providing agile, bespoke service with unmatched care. The company is committed to sustainability, creating energy-efficient lighting that reduces light pollution and carbon footprints while ensuring long-lasting performance.

Lightholm formerly known as PBLC, the lighting division of Pedrobeat AS, Lightholm continues to simplify complex lighting solutions with efficiency and expertise.

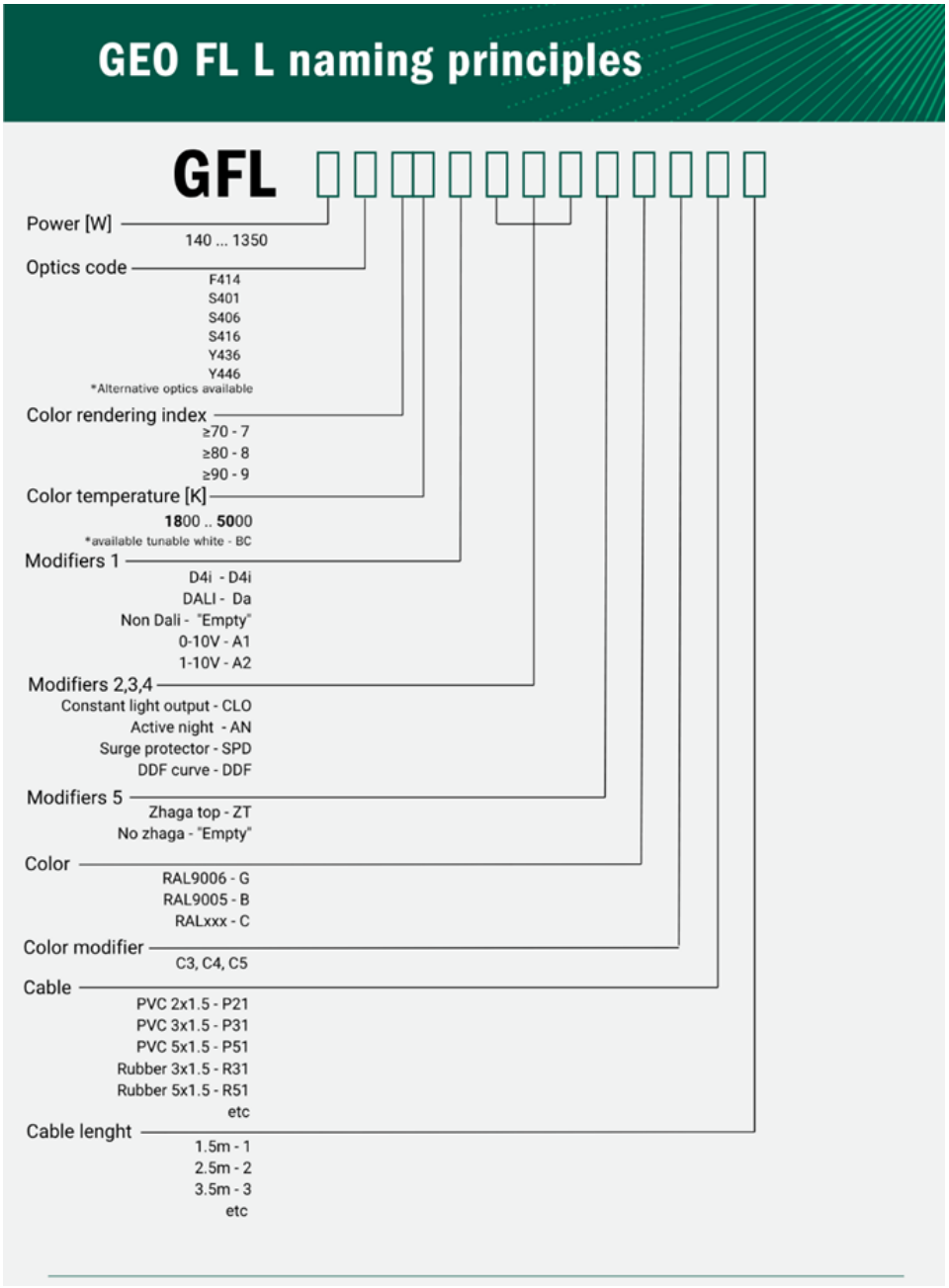
Product-related or management system-related certifications: Manufacturing unit is certified for ISO 9001 and ISO 14001. LED luminaires are manufactured to fulfil the requirements of IEC 60598-1, IEC 60598-2-3, IEC 60598-2-5.

# PRODUCT INFORMATION

Product name: GEO FL L

Included products: The GEO FL L product family covers power levels from 140 W to 1350 W and offers a wide variety of optics designed for different lighting applications. The range includes both single-module, two-module, and three-module versions, with multiple correlated colour temperature (CCT) and colour rendering index (CRI) options available. These variations are described in detail in the illustration “GEO FL L naming principles.”

Product identification:




UN CPC code: 4653 Lighting equipment

Product description: The GEO Floodlight L represents a new generation of LED floodlighting, designed for maximum flexibility and energy efficiency. With its modular architecture, it delivers powerful, uniform illumination across a wide range of applications, from industrial areas and parking lots to stadiums, arenas, airports, and seaports.

Built to endure demanding outdoor environments, it combines robust construction with a sleek, functional design that simplifies installation and maintenance. As an energy-efficient outdoor lighting solution, the GEO Floodlight reduces power consumption while maintaining exceptional brightness and uniformity.

For GEO FL L, technical parameters are as follows:

| | GEO FL L 1M | GEO FL L 2M | GEO FL L 3M |
|---|---|---|---|
| Product | Floodlight with LED module | | |
| Rated voltage | 220 – 240 Vac | | |
| Rated frequency | 50/60 Hz | | |
| Rated power | 140 - 450 W | 500 – 900W | 1200 – 1350 W |
| Ambient temperature range | ta: -40...40°C | | |
| Classification | Class I, Class II | | |
| Degree of protection | IP66, IK09 | | |

GFL 200 F414 740 G C4 R31.1 - is declared as a representative product, based on production volumes.

Name and location of production site(s): “Ezisi”, Marupe Rural Territory, Marupe Municipality, Latvia

References to any relevant websites for more information or explanatory materials: www.lightholm.com

# CONTENT DECLARATION

| Product content | Mass, kg | Post-consumer recycled material, mass-% of product | Biogenic material, mass-% of product | Biogenic material, kg C/product or declared unit |
|---|---|---|---|---|
| Aluminum | 9,8300 | 0 | 0 | 0 |
| Glass | 1,7600 | 0 | 0 | 0 |
| Neoprene rubber | 0,0560 | 0 | 0 | 0 |
| Steel | 0,0480 | 0 | 0 | 0 |
| Stainless steel | 2,7760 | 0 | 0 | 0 |
| Polycarbonate | 0,1800 | 0 | 0 | 0 |
| PCB | 0,4400 | 0 | 0 | 0 |
| LED Driver | 0,9500 | 0 | 0 | 0 |

| | | | | |
|---|---|---|---|---|
| Polymethyl methacrylate | 0,3600 | 0 | 0 | 0 |
| Cable | 0,1500 | 0 | 0 | 0 |
| Brass | 0,1000 | 0 | 0 | 0 |
| TOTAL | 16,6500 | 0 | 0 | 0 |

| Packaging materials | Mass, kg | Mass-% (versus the product) | Biogenic material, kg C/product or declared unit |
|---|---|---|---|
| Cardboard box (kg) | 0,540 | 3,24 | 0,2484 |
| Paper packaging (kg) | 0,010 | 0,06 | 0,0046 |
| Plastics packaging (kg) | 0,015 | 0,09 | 0,0000 |
| Wood pallets (kg) | 0,938 | 5,63 | 0,4127 |
| TOTAL | 1,503 | 9,02 | 0,6657 |

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of $CO_2$.

| Hazardous substances from the candidate list of SVHC | EC No. | CAS No. | Mass-% per product or declared unit |
|---|---|---|---|
| No substances included in the Candidate List of Substances of Very High Concern for authorization under the REACH regulations are present in this product either above the threshold for registration with the European Chemicals Agency or above 0,1% weight. | | | |

# LCA INFORMATION

Declared unit: 1 piece of the luminaire, equals to 16,650 kg.

Conversion factor: The conversion factor to mass of 1 kg is 0,060. To convert the results per 1 kg, the values must be multiplied by this factor.

Reference service life: 100 000 h

Time representativeness: Site specific data from producer is based on 1 year average for process data (reference year 2024). Time scope less than 10-years was applied for background data. Time scope less than 2 years was applied for specific data.

Geographical scope: Global, Europe, Latvia

Database(s) and LCA software used: Software LCA for Experts (version 10.9.1.19). Ecoinvent database (version 3.11.), EPD of LED driver.

Description of system boundaries:
The system boundary is cradle to grave and module D (A+B+C+D) according to EN 15804 + A2/AC:2021. It covers the production of raw materials, all relevant transport down to the factory gate, manufacturing of luminaire GEO FL L by Pedrobeat AS, transport from the Pedrobeat AS plant to the site (582 km truck, 465 km ship), installation of luminaire including product unpacking, operational energy of use of luminaire (considered European residual electricity grid mix), deconstruction of the luminaire, transport of deconstructed materials, waste processing and recycling of used luminaire.

System diagram:

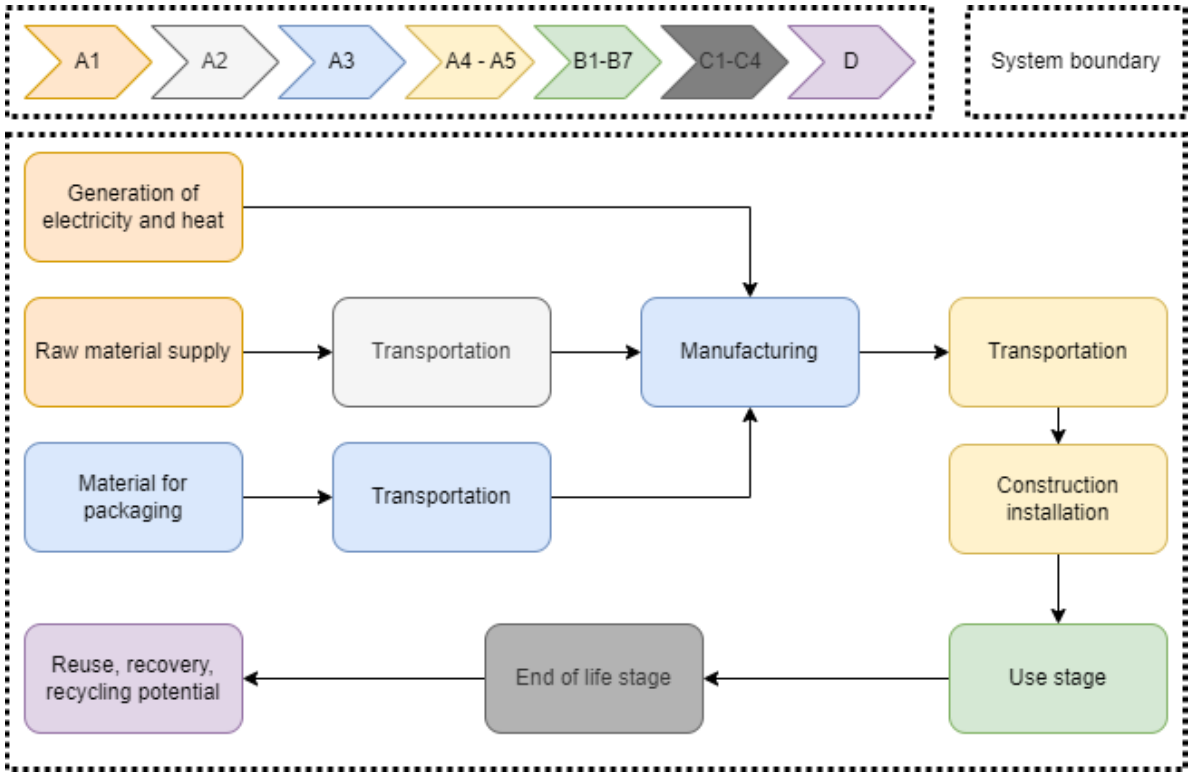



*Figure 1 System boundary of the LCA study conducted on production of GEO FL L*

More information:
Cut off rules: The cut-off criterion was chosen based on the used PCR. According to the used PCR, more than 99% of flows were included.

Allocations: As a general allocation rule the production of 1 piece of product was chosen. Common inputs (electricity, thermal energy, water), material inputs, transport and common outputs (waste generated) are allocated to this product, i.e. to declared unit of this product.

97% of aluminium scrap in aluminium ingot production is used in production of a luminaire. No secondary fuels are used in production.

Information about declared modules:
**Module A1** covers the production of materials and components for Pedrobeat AS and includes fuels and energy carriers (electricity, natural gas). This consists of the production of input materials.
**Module A2** covers the transport of material into the site of production Pedrobeat AS Generic DB processes with site-specific parameters for distance were used.

**Module A3** covers on-site operated processes dealing with GEO FL L production and packaging. These processes are under the operational control of Pedrobeat AS and these are specific processes modelled based on data collection.
**Module A4** covers the transport of product from the site of production Pedrobeat AS to the site of installation (considered weighted average 582 km by truck and 465 km by ship). Generic DB processes with site-specific parameters for distance were used. According to PCR a weighted average of transportation modes and distances, based on transportation to several customers or markets, representing the geographical scope of the EPD was used in module A4.
**Module A5** covers the phase of treatment and disposal of waste generated from the unpacking and installation of GEO FL L. Default processes according to the PCR were used for recycling of packaging materials. It is assumed energy recovery from plastic and material recycling of wood and paper.
**Module B6** covers operational energy use during the use phase of luminaires (considered European residual electricity grid mix).

It is assumed, that product is to 100% sent to recycling. According to the PCR, the share of the product that is recycled is lower than 100%. In this scenario, losses occur in the recycling process; therefore, 5% of the metals are assumed to be landfilled.
**Module C1** covers estimated energy for deconstruction related to the mass of deconstructed material. According to PCR 1,1 kWh/t of energy carrier Diesel was used for deconstruction of luminaire.
**Module C2** covers the transport of material into recycling facility. Generic DB processes with estimated general distances were used according to PCR. Distance for the transport of material for recycling was set according to PCR at 80 km.
**Module C3** covers the processing for loading and unloading at sorting facility, sorting, treatment of materials before recycling and recycling of aluminium, steel, stainless steel and copper of used luminaire according to PCR.
**Module C4** covers the process for disposal/landfilling for steel, stainless steel, copper and aluminium.
**Module D** covers declared benefits and loads regarding recycling potential of steel, stainless steel, aluminium, copper and energy recovery from incineration of other materials from used luminaire and used packaging.

Electricity mix: DB process of Latvian residual grid mix is used for consumed electricity in production process in Pedrobeat AS The used dataset has impact of 0,43 kg $CO_2$ eq./kWh for GWP-GHG indicator.

Characterisation factors: Characterisation factors are based on Environmental Footprint 3.1. (EF 3.1).

Data quality of processes contributing with more than 10% to the GWP-GHG results of modules A1-A3:

| Process | Source Type | Source | Reference year | Data category |
|---|---|---|---|---|
| Production of LED driver | EPD | Supplier EPD | <5 years old | Primary |
| Production of PCB | Database | Ecoinvent 3.11 | 2024 | Secondary |
| Production of aluminium | Database | Ecoinvent 3.11 | 2024 | Secondary |

The data quality assessment has been carried out in accordance with EN 15941 and the applicable PCR requirements. The assessment covers geographical, technical, and temporal representativeness of the data and includes all relevant datasets contributing to at least 80% of the results for each declared environmental impact indicator. Primary data from the production process (including raw materials, auxiliary materials, and energy consumption) have been complemented with high-quality secondary

data from recognized database (Ecoinvent 3.11). Based on this evaluation, the overall data quality is considered good and compliant with EN 15941.

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

| | Product stage | | | Construction process stage | | Use stage | | | | | | | End of life stage | | | | Resource recovery stage |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Raw material supply | Transport | Manufacturing | Transport | Construction installation | Use | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | De-construction demolition | Transport | Waste processing | Disposal | Reuse-Recovery-Recycling-potential |
| **Module** | **A1** | **A2** | **A3** | **A4** | **A5** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| Modules declared | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Geography | GLO | GLO | LV | EU | EU | EU | EU | EU | EU | EU | EU | EU | EU | EU | EU | EU | EU |
| Specific data used | 3,32% | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Variation – products | -0,0%;+203,59% | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Variation – sites | 0% | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.

# ENVIRONMENTAL PERFORMANCE

## LCA results of the product(s) - main environmental performance results

### Mandatory impact category indicators according to EN 15804

| Results per 1 piece of luminaire GEO FL L | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B6** | **C1** | **C2** | **C3** | **C4** | **D** |
| GWP-fossil | kg $CO_2$ eq. | 1,46E+02 | 1,17E+00 | 6,28E-03 | 5,26E+03 | 2,19E-03 | 1,40E-01 | 3,34E-02 | 4,92E-03 | -3,57E+01 |
| GWP-biogenic | kg $CO_2$ eq. | -3,66E-01 | 6,69E-04 | 3,65E-01 | 1,71E+02 | 7,12E-05 | 8,59E-05 | 3,89E-04 | 2,32E-05 | 2,82E+00 |
| GWP-luluc | kg $CO_2$ eq. | 3,07E-01 | 4,40E-04 | 9,85E-06 | 1,55E+01 | 6,47E-06 | 5,04E-05 | 3,64E-05 | 1,25E-06 | -3,95E-01 |
| GWP-total | kg $CO_2$ eq. | 1,46E+02 | 1,18E+00 | 3,71E-01 | 5,45E+03 | 2,27E-03 | 1,41E-01 | 3,38E-02 | 4,94E-03 | -3,33E+01 |
| ODP | kg CFC 11 eq. | 2,03E-06 | 2,52E-08 | 1,06E-10 | 9,79E-05 | 4,08E-11 | 3,07E-09 | 5,44E-10 | 1,65E-10 | -5,83E-07 |
| AP | mol $H^+$ eq. | 1,23E+00 | 5,26E-03 | 5,63E-05 | 3,03E+01 | 1,26E-05 | 4,65E-04 | 3,37E-04 | 5,52E-05 | -2,63E-01 |
| EP-freshwater | kg P eq. | 8,03E-02 | 8,11E-05 | 3,19E-06 | 5,05E+00 | 2,11E-06 | 9,91E-06 | 1,17E-05 | 8,37E-06 | -3,92E-02 |
| EP-marine | kg N eq. | 1,86E-01 | 1,62E-03 | 2,04E-05 | 4,88E+00 | 2,03E-06 | 1,59E-04 | 1,36E-04 | 1,39E-05 | -4,16E-02 |
| EP-terrestrial | mol N eq. | 1,93E+00 | 1,76E-02 | 2,17E-04 | 4,28E+01 | 1,78E-05 | 1,72E-03 | 1,46E-03 | 1,49E-04 | -4,35E-01 |
| POCP | kg NMVOC eq. | 6,41E-01 | 6,96E-03 | 6,17E-05 | 1,37E+01 | 5,71E-06 | 7,37E-04 | 4,12E-04 | 5,39E-05 | -1,43E-01 |
| ADP-minerals&metals* | kg Sb eq. | 1,07E-02 | 3,20E-06 | 4,55E-08 | 7,10E-02 | 2,96E-08 | 3,95E-07 | 1,69E-07 | 8,27E-09 | -1,21E-03 |
| ADP-fossil* | MJ | 2,06E+03 | 1,71E+01 | 1,20E-01 | 1,31E+05 | 5,48E-02 | 2,06E+00 | 5,70E-01 | 1,16E-01 | -5,32E+02 |
| WDP* | $m^3$ | 4,41E+01 | 1,00E-01 | 2,19E-03 | 3,40E+03 | 1,42E-03 | 1,23E-02 | 8,20E-03 | -5,89E-02 | -3,75E+01 |
| Acronyms | 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 = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption | | | | | | | | | |

** Disclaimer:*
*The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.*

## Additional mandatory and voluntary impact category indicators

| Results per 1 piece of luminaire GEO FL L | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B6** | **C1** | **C2** | **C3** | **C4** | **D** |
| GWP-GHG[1] | kg $CO_2$ eq. | 1,46E+02 | 1,17E+00 | 6,29E-03 | 5,28E+03 | 2,20E-03 | 1,41E-01 | 3,34E-02 | 4,92E-03 | -3,61E+01 |

## Resource use indicators

| Results per 1 piece of luminaire GEO FL L | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B6** | **C1** | **C2** | **C3** | **C4** | **D** |
| PERE | MJ | 2,71E+02 | 2,59E-01 | 2,05E-02 | 3,28E+04 | 1,37E-02 | 3,18E-02 | 7,48E-02 | 2,23E-03 | -1,54E+02 |
| PERM | 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 |
| PERT | MJ | 2,71E+02 | 2,59E-01 | 2,05E-02 | 3,28E+04 | 1,37E-02 | 3,18E-02 | 7,48E-02 | 2,23E-03 | -1,54E+02 |
| PENRE | MJ | 2,04E+03 | 1,71E+01 | 1,20E-01 | 1,31E+05 | 5,48E-02 | 2,06E+00 | 5,70E-01 | 1,16E-01 | -5,32E+02 |
| PENRM | MJ. | 1,88E+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 |
| PENRT | MJ | 2,06E+03 | 1,71E+01 | 1,20E-01 | 1,31E+05 | 5,48E-02 | 2,06E+00 | 5,70E-01 | 1,16E-01 | -5,32E+02 |
| SM | kg | 7,46E+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 | 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 |
| 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 |
| FW | $m^3$ | 1,05E+00 | 2,33E-03 | 5,11E-05 | 7,92E+01 | 3,30E-05 | 2,86E-04 | 1,91E-04 | -1,37E-03 | -8,74E-01 |
| Acronyms | 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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water | | | | | | | | | |

## Waste indicators

| Results per 1 piece of luminaire GEO FL L | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B6** | **C1** | **C2** | **C3** | **C4** | **D** |
| Hazardous waste disposed | kg | 2,90E+01 | 1,78E-02 | 1,01E-04 | 1,42E+02 | 5,94E-05 | 2,12E-03 | 4,10E-04 | 1,36E-04 | -1,79E+01 |
| Non-hazardous waste disposed | kg | 1,38E+02 | 1,64E-01 | 8,14E-04 | 1,17E+03 | 4,86E-04 | 1,98E-02 | 3,26E-03 | 1,62E+00 | -2,36E+01 |
| Radioactive waste disposed | kg | 6,81E-03 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |

1 This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic $CO_2$ is set to zero.

## Output flow indicators

| Results per 1 piece of luminaire GEO FL L | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B6** | **C1** | **C2** | **C3** | **C4** | **D** |
| Components for re-use | 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 |
| Material for recycling | kg | 1,43E+00 | 0,00E+00 | 1,48E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 1,66E+01 | 0,00E+00 | 0,00E+00 |
| Materials for energy recovery | 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 |
| Exported energy, electricity | MJ | -2,63E-04 | 0,00E+00 | -2,70E-03 | 0,00E+00 | 0,00E+00 | 0,00E+00 | -8,72E-03 | 0,00E+00 | 0,00E+00 |
| Exported energy, thermal | MJ | -4,53E-04 | 0,00E+00 | -4,65E-03 | 0,00E+00 | 0,00E+00 | 0,00E+00 | -1,50E-02 | 0,00E+00 | 0,00E+00 |

# ADDITIONAL ENVIRONMENTAL INFORMATION

**Conversion factors B6**

For the conversion of B6 results for a products with a different power consumption use a conversion factor from the table below.

| | B6 conversion factor (for 1 module) |
|---|---|
| ≤140W | 0,7000 |
| 141W – 150W | 0,7500 |
| 151W – 160W | 0,8000 |
| 161W – 170W | 0,8500 |
| 171W – 180W | 0,9000 |
| 181W – 190W | 0,9500 |
| 191W – 200W | 1,0000 |
| 201W – 210W | 1,0500 |
| 211W – 220W | 1,1000 |
| 221W – 230W | 1,1500 |
| 231W – 240W | 1,2000 |
| 241W – 250W | 1,2500 |
| 251W – 260W | 1,3000 |
| 261W – 270W | 1,3500 |
| 271W – 280W | 1,4000 |
| 281W – 290W | 1,4500 |
| 291W – 300W | 1,5000 |
| 301W – 310W | 1,5500 |
| 311W – 320W | 1,6000 |
| 321W – 330W | 1,6500 |
| 331W – 340W | 1,7000 |
| 341W – 350W | 1,7500 |
| 351W – 360W | 1,8000 |
| 361W – 370W | 1,8500 |
| 371W – 380W | 1,9000 |
| 381W – 390W | 1,9500 |
| 390W – 400W | 2,0000 |
| 401W – 410W | 2,0500 |
| 411W – 420W | 2,1000 |
| 421W – 430W | 2,1500 |
| 431W – 440W | 2,2000 |
| 441W – 450W | 2,2500 |

# ABBREVIATIONS

| Abbreviation | Definition |
|---|---|
| **General Abbreviations** | |
| EN | European Norm (Standard) |
| EPD | Environmental Product Declaration |
| EF | Environmental Footprint |
| GPI | General Programme Instructions |
| ISO | International Organization for Standardization |
| LCA | Life Cycle Assessment |
| PCR | Product Category Rules |
| c-PCR | Complementary Product Category Rules |
| CEN | European Committee for Standardization |
| CLC | Co-location centre |
| CPC | Central product classification |
| GHS | Globally harmonized system of classification and labelling of chemicals |
| GRI | Global Reporting Initiative |
| **Environmental Impact Indicators (EN 15804)** | |
| GHG | Greenhouse gas |
| GWP | Global Warming Potential (kg $CO_2$ eq.) |
| GWP-fossil | Global Warming Potential from fossil sources (kg $CO_2$ eq.) |
| GWP-biogenic | Global Warming Potential from biogenic sources (kg $CO_2$ eq.) |
| GWP-luluc | Global Warming Potential from land use and land use change (kg $CO_2$ eq.) |
| GWP-total | Total Global Warming Potential (kg $CO_2$ eq.) |
| GWP-GHG | Global Warming Potential for greenhouse gases (kg $CO_2$ eq.) |
| ODP | Ozone Depletion Potential (kg CFC-11 eq.) |
| AP | Acidification Potential (mol $H^+$ eq.) |
| EP | Eutrophication Potential |
| EP-freshwater | Freshwater eutrophication potential (kg P eq.) |
| EP-marine | Marine eutrophication potential (kg N eq.) |
| EP-terrestrial | Terrestrial eutrophication potential (mol N eq.) |
| POCP | Photochemical Ozone Creation Potential (kg NMVOC eq.) |
| ADP | Abiotic Depletion Potential |
| ADP-minerals&metals | Abiotic depletion potential for non-fossil resources (kg Sb eq.) |
| ADP-fossil | Abiotic depletion potential for fossil resources (MJ) |
| WDP | Water Deprivation Potential ($m^3$) |
| **Resource Use Indicators** | |
| PERE | Use of renewable primary energy excluding renewable primary energy resources used as raw materials (MJ) |
| PERM | Use of renewable primary energy resources used as raw materials (MJ) |
| PERT | Total use of renewable primary energy resources (MJ) |
| PENRE | Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials (MJ) |
| PENRM | Use of non-renewable primary energy resources used as raw materials (MJ) |
| PENRT | Total use of non-renewable primary energy resources (MJ) |
| SM | Use of secondary material (kg) |
| RSF | Use of renewable secondary fuels (MJ) |
| NRSF | Use of non-renewable secondary fuels (MJ) |
| FW | Use of net fresh water ($m^3$) |
| Waste Indicators | |
| HW | Hazardous Waste (disposed) (kg) |
| NHW | Non-Hazardous Waste (disposed) (kg) |
| RW | Radioactive Waste (disposed) (kg) |
| **Output Flow Indicators** | |
| CFR | Components for Reuse (kg) |
| MR | Material for Recycling (kg) |
| MER | Materials for Energy Recovery (kg) |
| EEE | Exported Energy, Electricity (MJ) |

| | |
|---|---|
| EET | Exported Energy, Thermal (MJ) |
| **Lifecycle Stages / Modules** | |
| A1 | Raw material supply |
| A2 | Transport |
| A3 | Manufacturing |
| A4 | Transport to site |
| A5 | Construction/Installation |
| B1 | Use |
| B2 | Maintenance |
| B3 | Repair |
| B4 | Replacement |
| B5 | Refurbishment |
| B6 | Operational energy use |
| B7 | Operational water use |
| C1 | Deconstruction/Demolition |
| C2 | Transport to waste processing |
| C3 | Waste processing |
| C4 | Disposal |
| D | Reuse-Recovery-Recycling potential |
| **Other Relevant Terms** | |
| SVHC | Substances of Very High Concern |
| EC No. | European Community Number |
| CAS No. | Chemical Abstracts Service Number |
| MJ | Megajoule |
| kg | Kilogram |
| $m^3$ | Cubic Meter |
| NMVOC | Non-Methane Volatile Organic Compounds |
| Sb eq. | Antimony Equivalents |
| P eq. | Phosphorus Equivalents |
| N eq. | Nitrogen Equivalents |
| CFC-11 eq. | Chlorofluorocarbon-11 Equivalents |
| $CO_2$ eq. | Carbon Dioxide Equivalents |
| kg C | Kilograms of Carbon |
| kg $CO_2$ eq. | Kilograms of Carbon Dioxide Equivalent |
| ND | Not Declared |

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