WEVER & DUCRÉ LIGHTING

# Environmental *product* declaration

EPD of multiple products, based on a representative product in accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/ AC:2021 for:

## DEEP IQ ceiling recessed

from Wever & Ducré

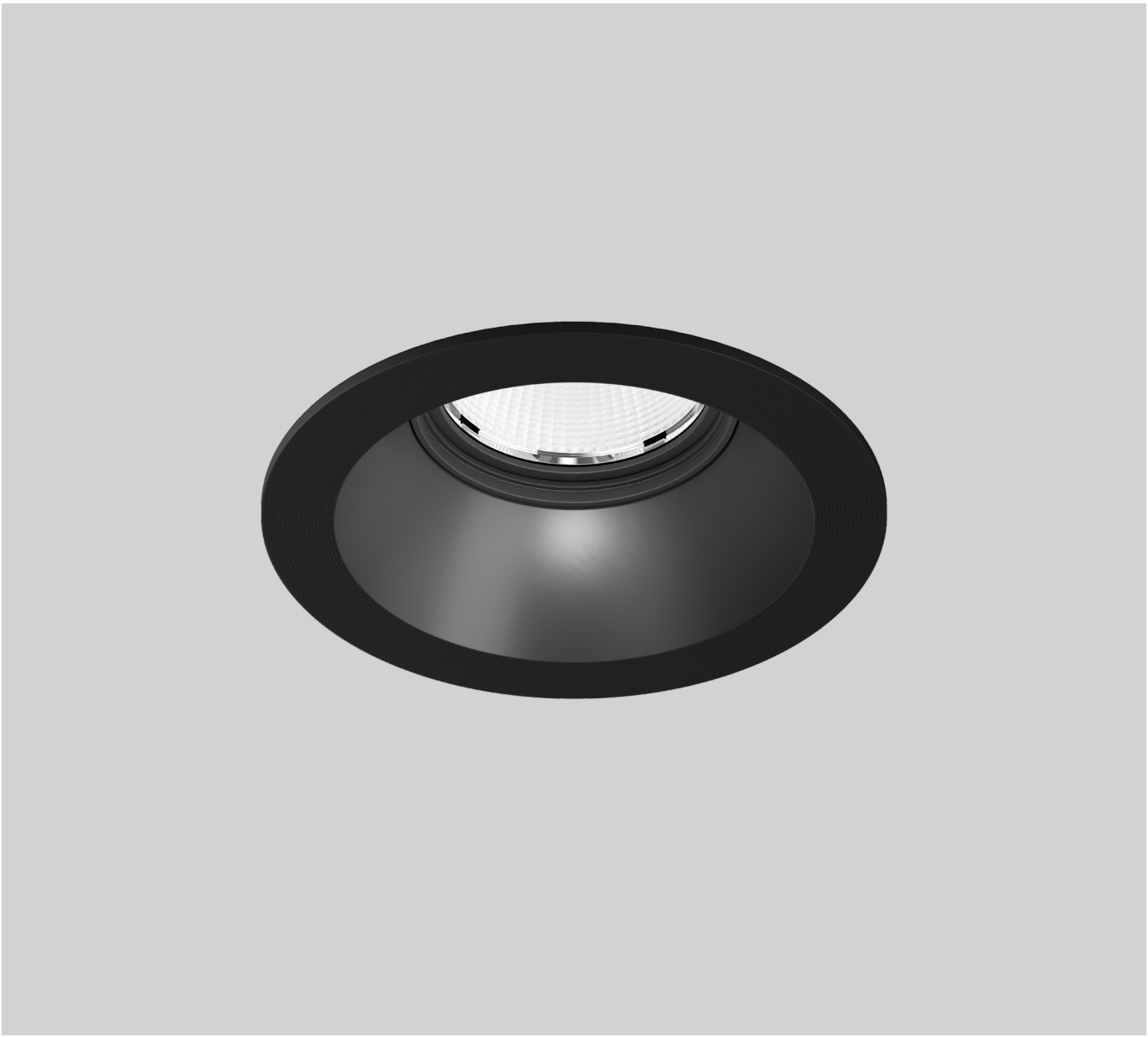
**INCLUDING MULTIPLE VARIANTS OF DEEP IQ**
Included products are specified on page 4

Products recently on the market – Results of this EPD shall be used with care as the LCI data is not yet based on 1 year of production which may result in increased uncertainty.

**PROGRAMME**
The International EPD® System
www.environdec.com

**PROGRAMME OPERATOR**
EPD International AB

| | |
|---|---|
| **EPD REGISTRATION NUMBER** | EPD-IES-0028577:001 |
| **VERSION DATE** | 2026-02-16 |
| **VALIDITY DATE** | 2031-02-15 |



This EPD follows additional requirements for construction products considered as Electronic or Electric Equipment. 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.*

INTERNATIONAL EPD SYSTEM

ECO PLATFORM EPD VERIFIED

**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 |

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, 2025-06-05.
UN CPC code(s): 4653 (Ver. 2.1) Lighting Equipment

**PCR REVIEW WAS CONDUCTED BY**
The Technical Committee of the International EPD® System.
See www.environdec.com for a list of members.

Review Chair: Rob Rouwette (chair), Noa Meron (co-chair).

The review panel may be contacted via support@environdec.com

**LIFE CYCLE ASSESSMENT (LCA) ACCOUNTABILITY**
XAL GmbH, Auer-Welsbach-Gasse 36, 8055 Graz, Austria

**INDIVIDUAL EPD VERIFICATION WITHOUT A PRE-VERIFIED LCA/EPD TOOL.**
**THIRD-PARTY VERIFIER:**

Rubén Carnerero
IK INGENIERIA
Avd. Cervantes, 51 - 5º - Dpto 7
48970 Basauri (Bizkaia)
r.carnerero@ik-ingenieria.com

Procedure for follow-up of data during EPD validity involves third-party verifier:
☒ Yes ☐ No

**APPROVED BY**
The International EPD® System

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.


# Company *information*

**DESCRIPTION OF THE ORGANISATION**

**EXCITING BELGIAN DESIGN LIGHTING FOR EVERYONE DELIVERED FAST**

We all know it, the famous glimpse at the ceiling during which you think: “Well, everyone really does have that light”. That’s why we strive to achieve lighting solutions that first and foremost fit the description: unique. Who inspires us in the process? From people like you, who share our enthusiasm for beautiful things and attach as much importance to noble design as to high-quality workmanship. Does it sound passionate? Well, that’s what it is. After all, life is simply far too short for boring light fixtures.

Name and location of production site(s):
The production sites are in China (TBL), in Graz (Wever & Ducré GmbH, Austria) and in Kortrijk (Wever & Ducré bv)

The production facilities operate in a complementary manner with each product passing through the same facilities.

More information
weverducre.com

**OWNER OF THE EPD**
**WEVER & DUCRÉ BV**
Spinnerijstraat 99/21
8500 Kortrijk
BELGIUM

epd@weverducre.com

**PRODUCT NAME**

DEEP IQ ceiling recessed

**PRODUCT IDENTIFICATION**

Round recessed downlight.
This EPD covers multiple products of the DEEP IQ Family:

- DEEP IQ 1.0 (reference product)
- DEEP ADJUST IQ 1.0
- DEEP petit IQ 1.0
- DEEP ADJUST petit IQ 1.0

All variants are available in different colours. Housings in Black (B), White (W), and Silk Grey (SG) are made of ASA, while another version is available made from Recycled PET (RP). Scaling factors for all variants can be found in the Annex of the EPD.

**PRODUCT DESCRIPTION**

Round ceiling recessed downlight made from ASA or recycled PET; 3D printed by IQ LUX; installation without tools using blade springs; suitable for ceiling thickness of min. 8 mm; recessed depth 77 mm; with COB (Chip on Board) technology for maximum efficiency; CRI ≥ 90; beam angle 40°; degree of protection IP20; Class 3.

The products are compatible with various LED drivers. For this LCA, drivers recommended on the official product page have been added.

**TECHNICAL SPECIFICATIONS**

| SPECIFICATION | DEEP IQ 1.0 | DEEP ADJUST IQ 1.0 | DEEP petit IQ 1.0 | DEEP ADJUST petit IQ 1.0 |
|---|---|---|---|---|
| Power | 5.87 W | 5.87 W | 3.26 W | 3.26 W |
| Luminous efficacy | Up to 118 lm/W | Up to 118 lm/W | Up to 98 lm/W | Up to 98 lm/W |
| Colour temperature | 2700 K, 3000 K | 2700 K, 3000 K | 2700 K, 3000 K | 2700 K, 3000 K |
| Electrical | DALI, dim | DALI, dim | DALI, dim | DALI, dim |
| Physical | Diameter 95 mm<br>Height 66 mm | Diameter 94 mm<br>Height 60 mm | Diameter 80 mm<br>Height 61 mm | Diameter 81 mm<br>Height 63 mm |

Technical data was tested in house according to following standards:
EN 13032-1: 2004 +A1: 2012
EN 13032-4: 2015 +A1: 2019
CIE S 025/E: 2015
IES LM-79-19: 2019

**UN CPC CODE**
4653 (Ver. 2.1) Lighting Equipment

# Content *declaration*

**CONTENT DECLARATION PER DECLARED UNIT**

| PRODUCT COMPONENTS | WEIGHT, KG | WEIGHT-% (VERSUS TOTAL WEIGHT) | POST-CONSUMER MATERIAL, WEIGHT-% | BIOGENIC MATERIAL, WEIGHT-% / DECLARED UNIT | BIOGENIC MATERIAL, KG C /DECLARED UNIT |
|---|---|---|---|---|---|
| Aluminum | 0.048 | 33.28 | 0.00 | 0.00 | 0.00 |
| Polyphenylene ether (PPE) | 0.020 | 14.19 | 0.00 | 0.00 | 0.00 |
| ASA | 0.016 | 11.16 | 0.00 | 0.00 | 0.00 |
| Steel | 0.009 | 6.51 | 0.00 | 0.00 | 0.00 |
| Epoxy-Resin | 0.008 | 5.56 | 0.00 | 0.00 | 0.00 |
| Polycarbonate | 0.006 | 4.13 | 0.00 | 0.00 | 0.00 |
| Brass | 0.006 | 3.88 | 0.00 | 0.00 | 0.00 |
| Copper | 0.005 | 3.43 | 0.00 | 0.00 | 0.00 |
| Glass fibers | 0.004 | 3.13 | 0.00 | 0.00 | 0.00 |
| Copper in alloy | 0.004 | 2.46 | 0.00 | 0.00 | 0.00 |
| Polyamide 6 (PA6) | 0.003 | 2.32 | 0.00 | 0.00 | 0.00 |
| Polyvinyl chloride (PVC) | 0.003 | 2.28 | 0.00 | 0.00 | 0.00 |
| Diisononyl phthalate (DINP) | 0.002 | 1.12 | 0.00 | 0.00 | 0.00 |
| Others (<1%) | 0.009 | 6.56 | 0.00 | 0.18 | 0.0001 |
| **TOTAL** | **0.143** | **100.00** | **0.00** | **0.18** | **0.0001** |

| PACKAGING MATERIALS* | WEIGHT, KG | WEIGHT-% (VERSUS THE PRODUCT) | WEIGHT BIOGENIC CARBON, KG C / DECLARED UNIT |
|---|---|---|---|
| Paper | 0.008 | 5.54 | 0.004 |
| Cardboard | 0.049 | 34.17 | 0.025 |
| **TOTAL** | **0.057** | **39.71** | **0.029** |

The products do not contain any REACH and RoHS SVHC substances in amounts greater than 0.1 % (1000 ppm).

*Disclaimer: The packaging material table includes only product packaging. Transport packaging also included in the LCA.

## DECLARED UNIT

The declared unit is one piece of DEEP IQ 1.0 in the colour Black (B), including the LED-DALI Converter . The weight of the product per declared unit is 0.143 kg. 3000 K. In the following report, “DEEP IQ 1.0” will be used in short for the declared unit.

For better comparison with other types of luminaires, conversion factors are also available to convert the results to 1000 lumens during a reference lifetime of 35000 hours. This reference value is proposed by the PEP Category rules (PSR-0014-ed2.0-EN-2023 07 13). The conversion factors are available under “Additional environmental information“.

The principles of “Modularity” and “polluter pay” have been followed.

## REFERENCE SERVICE LIVE

10.8 years

## TIME REPRESENTATIVENESS

2024 - 2025*

## DATABASE AND LCA SOFTWARE USED

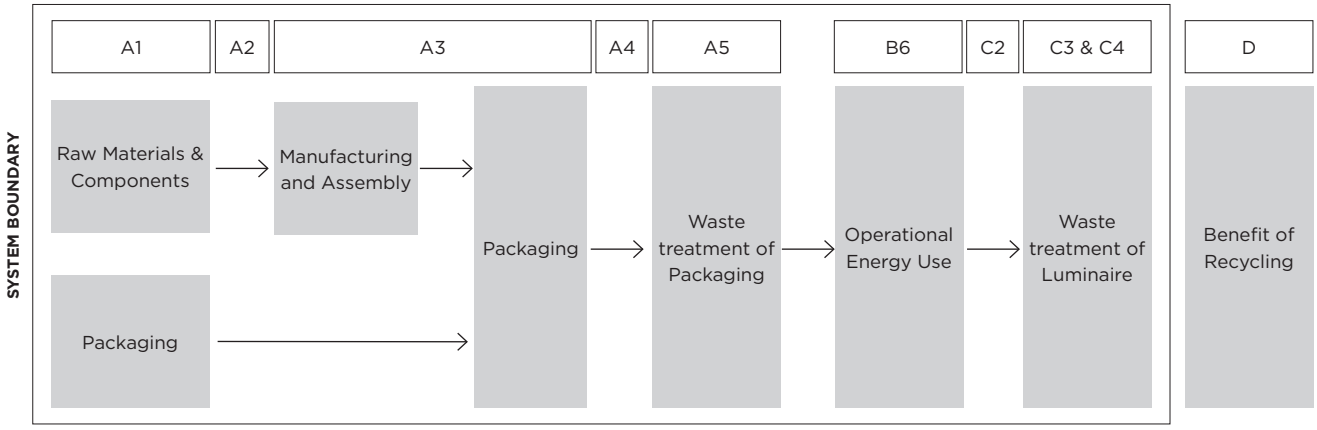
LCA for Experts 10.9.1.19

## SYSTEM BOUNDARIES

Cradle to gate with options, modules C1-C4, module D and with optional modules

*Some primary data (BoM and supplier data) is from a period < 12 months. It will be reviewed once one year of production is effective to confirm that the data is still representative.

## SYSTEM DIAGRAM




## ALLOCATION

Allocation was performed to determine the quantities of flows commonly associated with the factory, including electricity for general operations and packaging, the use of packaging materials (such as wooden pallets and polyethylene film), and packaging waste from purchased components.

## PRODUCT STAGE (A1 – A3)

Raw materials are found in the components used for the luminaire production. The raw materials and the necessary process steps have been modelled using LCA for Experts 10.9.1.19. The engine production is completed in Dongguan town, the 3D-Printing of the housing is done in Graz, Austria. Finished assembly and transportation to Belgium to add the LED-converter and from Belgium sales to the world. The corresponding electricity mix and natural gas have been used for manufacturing. Production losses are close to zero and therefore not included in the LCA. Transportation of all the components is incorporated. For the components which are delivered from China, aggregated data has been used, since transportation involved various routes and transport vehicles. It is calculated that 24% are delivered by plane and 76% are delivered by ship from Dongguan to Belgium. Packaging for the components has been accounted for using a worst-case approach.

## TRANSPORT TO BUILDING (A4)

The transport is calculated from Brussel, Belgium to the capitals of the countries with sales shares >4% (Brussel, Paris, Amsterdam, Berlin, Rome). The product market includes countries all over the world.

| | |
|---|---|
| Weighted distance | 433 km |
| Truck used | Class EURO 6, 26-28 t |
| Fuel type | Diesel (0.00287 l/100 kkm) |

## INSTALLATION INTO BUILDING (A5)

No emissions occur during the installation. This module includes the waste treatment of the packaging.

Packagingwaste incl. transport packaging:

| Material | Weight (kg) |
|---|---|
| Cardboard | 0.063 |
| Paper | 0.009 |

## OPERATIONAL ENERGY USE (B6)

Electricity consumption during the use stage is modelled based on the technical parameters of the luminaires and is representative for a weighted average of the following applications – restaurant (35%), hotel (25%), office (15%), retail (25%), with an average lifetime of 10.8 years. Geography of the electricity mix is modelled by sales shares and is representative for European countries (98% - EU-28) and rest of world countries (2%). For the rest of world countries, an electricity mix for China is used following a worst-case approach.

The energy consumption is calculated using the formula from EN 15193:2007:
**Energy consumption [kWh] = {Pa x FCP x FO x (FD x tD + FN x tN) + Pp x ty} x 1/1.000 x a**

The results and additional Use Phase Information is presented in the table below:

| Scenario | DEEP IQ 1.0 | Unit |
|---|---|---|
| Electricity use (10.8 years) | 319.08 | kWh |
| Active power | 3.75 | W |
| Passive power | 0 | W |
| Total active time | 40312.50 | hours |
| Total passive time | 0.50 | hours |
| Light control | 7.2 W DALI | - |
| Presence control | No | - |

## END-OF-LIFE STAGE (C1-C4)

The product is presumed to be decomposed manually; therefore, no emissions should occur in C1. In accordance with PCR 2.0.1, the following transport distances are used for end-of-life waste treatment:

- Waste not destined for incineration – 80 km
- Waste destined for incineration – 130 km

Based on official statistics and literature, waste treatment options are taken into account for Europe and rest of the world countries.

| Scenario | DEEP IQ 1.0 | Unit |
|---|---|---|
| Collected separately | 0.144 | kg |
| Collected with mixed (construction) waste | - | kg |
| For reuse | - | kg |
| For recycling | 0.065 | kg |
| For energy recovery | 0.026 | kg |
| For final disposal | 0.052 | kg |

## MODULE D

According to the guidelines of EN 15804+A2 and the PCR from EPD International, calculations are made for Module D. The loads and benefits result from the export of secondary materials and the energy which comes from incineration and landfilling. In Module D also the benefits from the product packaging waste are included.

| Scenario | DEEP IQ 1.0 | Unit |
|---|---|---|
| Materials for recycling | 0.123 | kg |
| Materials for export of secondary fuels | - | kg |
| Materials for incineration | 0.0 | kg |

## CUT-OFF RULES

Consistent with the PCR, a minimum of 95% of total inflows (mass and energy) are included. In addition, materials and processes with insignificant contributions of less than 1% are also included. For the use and end-of-life stage, scenarios are used, factoring in geographical conditions (such as electricity mix) and applications (waste treatment practices).

The following LCA modules have been excluded:
- B1: For the use stage (B1), no energy and material inputs, or emissions are involved.
- B2-B5: During the reference service life no maintenance (B2), repair (B3), replacement (B4) or refurbishment (B5) is expected.
- B7: The use of the product does not require water consumption (B7).

The following processes have been excluded:
- Manufacture of equipment used in production, buildings or any other capital goods;
- The transportation of personnel to the plant;
- Transportation of personnel within the plant;
- Research and development activities;
- Long-term emissions.

## DATA QUALITY

This LCA study reflects the production for 2025, while overhead electricity consumption is based on 2024 data. Components are sourced from external suppliers, and their manufacturing processes are modeled using LCA for Experts, applying the most suitable representative geographical conditions and applications. Geographical representativeness is global, mainly China and Europe. Since the included products are only recently on the market, LCI data is not based on a full year of production. Results of this EPD shall be used with care. Besides production data, data quality is very good / good.

## ELECTRICITY GRID

For the manufacturing in Dongguan, China, the corresponding electricity grid mix as stated on the invoice is used: Hard coal (39.7%), Hydro (27.6%), Photovoltaic (12.2%), Wind (11.4%), Nuclear (4.7%), other RE (4.4%). For the manufacturing in Graz, Austria, the corresponding electricity grid mix as stated on the invoice is used: Biomass (65.64%), Solar (25.28%), other RE (9.08%).

## ENVIRONMENTAL IMPACT OF THE ELECTRICITY USED IN CN AND AUT

| | CN | AUT |
|---|---|---|
| $CO_2$ eq. [kg/kWh] | 0.435 | 0.033 |

**MODULES DECLARED, GEOGRAPHICAL SCOPE, SHARE OF SPECIFIC DATA (IN GWP-GHG RESULTS) AND DATA VARIATION (IN GWP-GHG RESULTS):**

| | Product stage | | | 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 | ND | ND | ND | ND | ND | x | ND | x | x | x | x | x |
| Geography | GLO | GLO | CN, BEL, AUT | GLO | GLO | GLO | GLO | GLO | GLO | GLO | GLO | GLO | GLO | GLO | GLO | GLO | GLO |
| Specific data used | 12.04% | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Variation – products | -35% / +2% | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Variation – sites | 0% | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Acronyms | GLO = Global, CN = China, BEL = Belgium, AUT = Austria | | | | | | | | | | | | | | | | |

**PRIMARY DATA USED**

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.

**CALCULATION OF PRIMARY DATA USED FOR MODULE A1-A3:**

| PROCESS | SOURCE TYPE | SOURCE | REFERENCE YEAR | DATA CATEGORY | SHARE OF PRIMARY DATA OF GWP-GHG RESULTS FOR A1-A3 |
|---|---|---|---|---|---|
| Others (<10% each) | Collected Data | EPD Owner | 2024 | Primary data | 12.04% |
| Total share of primary data of GWP-GHG results for A1-A3 | | | | | 12.04% |

# Results of the Environmental *performance indicators*

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.

Usage of results from A1-A3 without considering the results of module C is not encouraged.

**MANDATORY IMPACT CATEGORY INDICATORS ACCORDING TO EN 15804+A2 (BASED ON EF 3.1)**

| | | RESULTS PER DECLARED UNIT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **INDICATOR** | **Unit** | **A1 – A3** | **A4** | **A5** | **B6** | **C1** | **C2** | **C3** | **C4** | **D** |
| GWP – fossil | kg CO2 eq. | 3.12E+00 | 9.90E-03 | 1.39E-03 | 1.03E+02 | 0.00E+00 | 1.32E-03 | 7.83E-02 | 5.00E-04 | -4.35E-01 |
| GWP – biogenic | kg $CO_2$ eq. | -1.34E-01 | 0.00E+00 | 1.33E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.02E-04 |
| GWP – luluc | kg $CO_2$ eq. | 4.95E-03 | 2.53E-04 | 7.70E-06 | 3.40E-01 | 0.00E+00 | 1.41E-05 | 5.85E-06 | 1.18E-06 | -7.43E-04 |
| **GWP – total** | **kg $CO_2$ eq.** | **2.99E+00** | **1.02E-02** | **1.35E-01** | **1.03E+02** | **0.00E+00** | **1.34E-03** | **7.83E-02** | **5.01E-04** | **-4.35E-01** |
| ODP | kg CFC 11 eq. | 1.83E-09 | 1.89E-15 | 2.49E-15 | 2.28E-09 | 0.00E+00 | 1.61E-16 | 4.72E-14 | 1.36E-15 | -5.85E-12 |
| AP | mol H+ eq. | 1.66E-02 | 1.39E-05 | 6.39E-06 | 2.31E-01 | 0.00E+00 | 2.14E-06 | 1.88E-05 | 3.42E-06 | -1.60E-03 |
| EP – freshwater | kg P eq. | 2.61E-05 | 1.85E-08 | 5.90E-08 | 2.14E-04 | 0.00E+00 | 3.69E-09 | 8.40E-09 | 8.02E-10 | -1.07E-07 |
| EP – marine | kg N eq. | 3.12E-03 | 5.49E-06 | 2.97E-06 | 5.51E-02 | 0.00E+00 | 8.73E-07 | 5.26E-06 | 8.59E-07 | -3.10E-04 |
| EP – terrestrial | mol N eq. | 3.39E-02 | 6.12E-05 | 2.65E-05 | 6.17E-01 | 0.00E+00 | 9.30E-06 | 8.62E-05 | 9.41E-06 | -3.33E-03 |
| POCP | kg NMVOC eq. | 9.01E-03 | 1.28E-05 | 9.05E-06 | 1.38E-01 | 0.00E+00 | 1.85E-06 | 1.40E-05 | 2.63E-06 | -8.67E-04 |
| ADP – minerals & metals* | kg Sb eq. | 2.07E-04 | 1.32E-09 | 8.11E-11 | 2.09E-05 | 0.00E+00 | 9.07E-11 | 7.57E-10 | 4.52E-11 | -1.15E-05 |
| ADP – fossil* | MJ | 4.02E+01 | 1.27E-01 | 1.88E-02 | 2.07E+03 | 0.00E+00 | 1.74E-02 | 5.66E-02 | 7.24E-03 | -6.17E+00 |
| WDP* | $m^3$ | 7.31E-01 | 3.63E-05 | 1.28E-03 | 2.61E+01 | 0.00E+00 | 5.48E-06 | 8.20E-03 | 5.67E-05 | -3.81E-02 |
| 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 results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

**MANDATORY AND VOLUNTARY IMPACT CATEGORY INDICATORS**

| | | RESULTS PER DECLARED UNIT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **INDICATOR** | **Unit** | **A1 – A3** | **A4** | **A5** | **B6** | **C1** | **C2** | **C3** | **C4** | **D** |
| GWP – GHG[1] | kg $CO_2$ eq. | 3.12E+00 | 1.02E-02 | 1.39E-03 | 1.03E+02 | 0.00E+00 | 1.34E-03 | 7.83E-02 | 5.01E-04 | -4.36E-01 |
| PM | disease inc. | 2.23E-07 | 1.33E-10 | 4.98E-11 | 1.99E-06 | 0.00E+00 | 2.04E-11 | 2.09E-10 | 4.10E-11 | -2.05E-08 |
| IRP – HE** | kg U235-eq | 1.12E-01 | 1.41E-05 | 3.99E-05 | 5.28E+01 | 0.00E+00 | 3.18E-06 | 6.52E-04 | 1.09E-05 | -2.58E-02 |
| ETP – fw* | CTUe | 2.02E+01 | 1.45E-01 | 1.79E-02 | 3.47E+02 | 0.00E+00 | 2.26E-02 | 1.83E-02 | 4.67E-03 | -2.08E+00 |
| HTP – c* | CTUh | 1.54E-09 | 2.07E-12 | 3.37E-13 | 3.30E-08 | 0.00E+00 | 3.04E-13 | 1.72E-12 | 3.91E-13 | -2.53E-10 |
| HTP – nc* | CTUh | 3.35E-08 | 7.87E-11 | 2.23E-11 | 6.91E-07 | 0.00E+00 | 1.72E-11 | 1.13E-10 | 3.84E-11 | -3.42E-09 |
| SQP | dimension-less | 2.53E+01 | 6.66E-02 | 5.26E-03 | 8.17E+02 | 0.00E+00 | 7.74E-03 | 1.94E-02 | 1.38E-03 | 1.37E+01 |
| Acronyms | PM = particulate matter emissions. IRP-HE = ionizing radiation potential-human exposure. ETP-fw = ecotoxicity (freshwater). HTP-c = human toxicity potential. cancer effects. HTP-nc = human toxicity potential. non-cancer effects. SQP = land use related impacts. | | | | | | | | | |

[1] The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

# Results of the Environmental *performance indicators*

## RESOURCE USE INDICATORS

| | | RESULTS PER DECLARED UNIT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **INDICATOR** | **Unit** | **A1 – A3** | **A4** | **A5** | **B6** | **C1** | **C2** | **C3** | **C4** | **D** |
| PERE | MJ | 1.68E+01 | 1.06E-02 | 2.22E-03 | 1.40E+03 | 0.00E+00 | 1.28E-03 | 2.62E-02 | 1.13E-03 | -7.71E-01 |
| PERM | MJ | 1.29E+00 | 0.00E+00 | -1.27E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | -2.47E-02 | 0.00E+00 | 0.00E+00 |
| PERT | MJ | 1.80E+01 | 1.06E-02 | -1.26E+00 | 1.40E+03 | 0.00E+00 | 1.28E-03 | 1.48E-03 | 1.13E-03 | -7.71E-01 |
| PENRE | MJ | 4.02E+01 | 1.27E-01 | 1.88E-02 | 2.07E+03 | 0.00E+00 | 1.74E-02 | 5.66E-02 | 7.24E-03 | -6.17E+00 |
| PENRM | MJ | 1.01E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | -1.01E+00 | 0.00E+00 | 0.00E+00 |
| PENRT | MJ | 4.12E+01 | 1.27E-01 | 1.88E-02 | 2.07E+03 | 0.00E+00 | 1.74E-02 | -9.53E-01 | 7.24E-03 | -6.17E+00 |
| 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 | 4.78E-02 |
| 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 | $m^3$ | 2.11E-02 | 7.67E-06 | 3.07E-05 | 1.10E+00 | 0.00E+00 | 6.18E-07 | 2.01E-04 | 1.70E-06 | -2.20E-03 |

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 DECLARED UNIT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **INDICATOR** | **Unit** | **A1 – A3** | **A4** | **A5** | **B6** | **C1** | **C2** | **C3** | **C4** | **D** |
| Hazardous waste disposed | kg | 2.69E-08 | 6.01E-12 | 3.10E-12 | 2.68E-06 | 0.00E+00 | 6.31E-13 | 3.32E-11 | 8.89E-13 | 2.42E-10 |
| Non-hazardous waste disposed | kg | 2.75E-01 | 1.82E-05 | 5.59E-03 | 1.59E+00 | 0.00E+00 | 2.29E-06 | 8.41E-03 | 3.00E-02 | -9.92E-02 |
| Radioactive waste disposed | kg | 9.75E-04 | 1.47E-07 | 2.61E-07 | 3.20E-01 | 0.00E+00 | 2.29E-08 | 4.49E-06 | 8.92E-08 | -2.50E-04 |

## OUTPUT FLOW INDICATORS

| | | RESULTS PER DECLARED UNIT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **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 | 3.59E-02 | 0.00E+00 | 7.09E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.05E-02 | 0.00E+00 | 0.00E+00 |
| Materials for energy reco-very | kg | 0.00E+00 | 0.00E+00 | 5.75E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.64E-02 | 0.00E+00 | 0.00E+00 |
| Exported energy. electricity | 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 |
| Exported ener-gy. thermal | 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 |

# Results of the Environmental *performance indicators*

## ADDITIONAL LCA RESULTS

Results for additional scenarios for End-of-Life modules.
Mandatory impact category indicators according to EN 15804 + A2
(based on EF 3.1)

| | | 100% RECYCLING | | | | 100% INCINERATION | | | | 100% LANDFILL | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **INDICATOR** | **Unit** | **C2** | **C3** | **C4** | **D** | **C2** | **C3** | **C4** | **D** | **C2** | **C3** | **C4** | **D** |
| GWP-fossil | kg $CO_2$ eq. | 3.70E-03 | 3.87E-02 | 8.09E-06 | -5.60E-01 | 7.54E-04 | 1.88E-01 | 8.09E-06 | -1.60E-01 | 1.48E-03 | 0.00E+00 | 2.81E-03 | -5.30E-02 |
| GWP-biogenic | kg $CO_2$ eq. | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.02E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.02E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.02E-04 |
| GWP-luluc | kg $CO_2$ eq. | 3.95E-05 | 2.67E-05 | 1.51E-08 | -9.19E-04 | 8.04E-06 | 1.19E-05 | 1.51E-08 | -1.57E-04 | 1.58E-05 | 0.00E+00 | 7.20E-06 | -2.04E-06 |
| GWP-total | kg $CO_2$ eq. | 3.74E-03 | 3.87E-02 | 8.10E-06 | -5.61E-01 | 7.62E-04 | 1.88E-01 | 8.10E-06 | -1.60E-01 | 1.50E-03 | 0.00E+00 | 2.82E-03 | -5.25E-02 |
| GWP-GHG | kg $CO_2$ eq. | 3.74E-03 | 3.87E-02 | 8.10E-06 | -5.61E-01 | 7.62E-04 | 1.88E-01 | 8.10E-06 | -1.60E-01 | 1.50E-03 | 0.00E+00 | 2.82E-03 | -5.30E-02 |
| ODP | kg CFC 11 eq. | 4.52E-16 | 1.66E-13 | 1.93E-17 | -7.88E-12 | 9.20E-17 | -6.53E-14 | 1.93E-17 | -1.40E-12 | 1.81E-16 | 0.00E+00 | 8.36E-15 | -2.15E-13 |
| AP | mol H+ eq. | 6.00E-06 | 3.02E-05 | 5.82E-08 | -2.46E-03 | 1.22E-06 | 4.94E-05 | 5.82E-08 | -2.09E-04 | 2.41E-06 | 0.00E+00 | 1.83E-05 | -5.57E-05 |
| EP-freshwater | kg P eq. | 1.04E-08 | 7.19E-08 | 1.39E-11 | -1.23E-06 | 2.11E-09 | 8.67E-09 | 1.39E-11 | -2.14E-07 | 4.15E-09 | 0.00E+00 | 4.41E-07 | -1.13E-07 |
| EP-marine | kg N eq. | 2.45E-06 | 9.81E-06 | 1.49E-08 | -4.27E-04 | 4.98E-07 | 1.72E-05 | 1.49E-08 | -5.36E-05 | 9.81E-07 | 0.00E+00 | 4.43E-06 | -1.58E-05 |
| EP-terrestrial | mol N eq. | 2.61E-05 | 1.18E-04 | 1.63E-07 | -4.59E-03 | 5.30E-06 | 2.48E-04 | 1.63E-07 | -5.83E-04 | 1.04E-05 | 0.00E+00 | 4.85E-05 | -1.61E-04 |
| POCP | kg NMVOC eq. | 5.19E-06 | 2.51E-05 | 4.52E-08 | -1.25E-03 | 1.06E-06 | 4.57E-05 | 4.52E-08 | -1.94E-04 | 2.08E-06 | 0.00E+00 | 1.37E-05 | -9.07E-05 |
| ADP-minerals&metals* | kg Sb eq. | 2.54E-10 | 2.45E-09 | 8.43E-13 | -2.80E-05 | 5.18E-11 | 4.55E-11 | 8.43E-13 | -1.24E-06 | 1.02E-10 | 0.00E+00 | 2.29E-10 | -8.31E-09 |
| ADP-fossil* | MJ | 4.89E-02 | 1.72E-01 | 1.08E-04 | -8.69E+00 | 9.94E-03 | 1.57E-01 | 1.08E-04 | -3.23E+00 | 1.96E-02 | 0.00E+00 | 4.30E-02 | -1.34E+00 |
| WDP* | $m^3$ | 1.54E-05 | 6.49E-03 | 9.00E-07 | -8.39E-02 | 3.13E-06 | 2.62E-02 | 9.00E-07 | -1.40E-02 | 6.16E-06 | 0.00E+00 | 3.28E-04 | -1.80E-03 |

| | |
|---|---|
| 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 results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

# Additional Environmental *information*

**SCALING FACTORS FOR OTHER VARIANTS**

The different variants for DEEP IQ luminaires are very similar but show some differences in their construction. Those differences have been accounted for in the LCA.
The results of the environmental performance indicators above can be scaled to the corresponding variants with the following conversion factors:

| VARIANT | COLOUR | DRIVER USED | SYSTEM POWER [W] | A1–A3 | A4 | A5 | B6 | C1–C4 | D |
|---|---|---|---|---|---|---|---|---|---|
| DEEP IQ 1.0 | W / B / SG | 7.2W DALI | 6.75 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| | W / B / SG | 7.5W dim | 7.72 | 0.83 | 1.00 | 1.00 | 1.00 | 0.96 | 0.98 |
| | RP | 7.2W DALI | 6.75 | 0.99 | 1.01 | 1.00 | 1.00 | 1.09 | 1.01 |
| | RP | 7.5W dim | 7.72 | 0.81 | 1.01 | 1.00 | 1.00 | 1.05 | 0.99 |
| DEEP ADJUST IQ 1.0 | W / B / SG | 7.2W DALI | 6.75 | 1.02 | 1.11 | 1.06 | 1.00 | 1.64 | 1.04 |
| | W / B / SG | 7.5W dim | 7.72 | 0.85 | 1.11 | 1.06 | 1.00 | 1.59 | 1.03 |
| | RP | 7.2W DALI | 6.75 | 0.99 | 1.13 | 1.06 | 1.00 | 1.76 | 1.05 |
| | RP | 7.5W dim | 7.72 | 0.82 | 1.13 | 1.06 | 1.00 | 1.72 | 1.04 |
| DEEP PETIT IQ 1.0 | W / B / SG | 8W DALI | 3.75 | 0.83 | 0.87 | 0.98 | 0.62 | 0.85 | 0.60 |
| | W / B / SG | 10W dim | 4.29 | 0.65 | 0.87 | 0.98 | 0.62 | 0.81 | 0.59 |
| | RP | 8W DALI | 3.75 | 0.82 | 0.88 | 0.98 | 0.62 | 0.92 | 0.61 |
| | RP | 10W dim | 4.29 | 0.65 | 0.88 | 0.98 | 0.62 | 0.87 | 0.59 |
| DEEP ADJUST PETIT IQ 1.0 | W / B / SG | 8W DALI | 3.75 | 0.84 | 0.87 | 0.77 | 0.62 | 1.32 | 0.63 |
| | W / B / SG | 10W dim | 4.29 | 0.67 | 0.87 | 0.77 | 0.62 | 1.28 | 0.62 |
| | RP | 8W DALI | 3.75 | 0.83 | 0.92 | 0.77 | 0.62 | 1.67 | 0.66 |
| | RP | 10W dim | 4.29 | 0.65 | 0.92 | 0.77 | 0.62 | 1.63 | 0.64 |

The maximum scaling factor of -35% for the A1-A3 stages is primarily attributed to the difference in driver weights matched with the product. As electronic components constitute a major environmental hotspot, the driver weight range results in a 1.55-fold mass difference. This directly correlates with the significant variation in resource use and emissions, aligning with ISO 14025 requirements for reporting product family variability

# Additional Environmental *information*

**RESULTS FOR 1000 LUMENS DURING A REFERENCE LIFE OF 35000 HOURS (AS PER REFERENCE OF PEP-ECO PASSPORT PSR-0014-ED2.0-EN-2023 07 13).**

A conversion factor can be used for converting the results to 1000 lumens during a reference life of 35000 hours.

| VARIANT (3000K) | COLOUR | DRIVER USED | lm/W | A1–A3 | A4 | A5 | B6 | C1–C4 | D |
|---|---|---|---|---|---|---|---|---|---|
| DEEP IQ 1.0 | W / B / SG | 7.2W DALI | 117 | 1.27 | 1.27 | 1.27 | 1.31 | 1.27 | 1.27 |
| | W / B / SG | 7.5W dim | 102 | 1.27 | 1.27 | 1.27 | 1.31 | 1.27 | 1.27 |
| | RP | 7.2W DALI | 117 | 1.27 | 1.27 | 1.27 | 1.31 | 1.27 | 1.27 |
| | RP | 7.5W dim | 102 | 1.27 | 1.27 | 1.27 | 1.31 | 1.27 | 1.27 |
| DEEP ADJUST IQ 1.0 | W / B / SG | 7.2W DALI | 117 | 1.27 | 1.27 | 1.27 | 1.31 | 1.27 | 1.27 |
| | W / B / SG | 7.5W dim | 102 | 1.27 | 1.27 | 1.27 | 1.31 | 1.27 | 1.27 |
| | RP | 7.2W DALI | 117 | 1.27 | 1.27 | 1.27 | 1.31 | 1.27 | 1.27 |
| | RP | 7.5W dim | 102 | 1.27 | 1.27 | 1.27 | 1.31 | 1.27 | 1.27 |
| DEEP PETIT IQ 1.0 | W / B / SG | 8W DALI | 97 | 2.74 | 2.74 | 2.74 | 2.84 | 2.74 | 2.74 |
| | W / B / SG | 10W dim | 85 | 2.74 | 2.74 | 2.74 | 2.84 | 2.74 | 2.74 |
| | RP | 8W DALI | 97 | 2.74 | 2.74 | 2.74 | 2.84 | 2.74 | 2.74 |
| | RP | 10W dim | 85 | 2.74 | 2.74 | 2.74 | 2.84 | 2.74 | 2.74 |
| DEEP ADJUST PETIT IQ 1.0 | W / B / SG | 8W DALI | 97 | 2.74 | 2.74 | 2.74 | 2.84 | 2.74 | 2.74 |
| | W / B / SG | 10W dim | 85 | 2.74 | 2.74 | 2.74 | 2.84 | 2.74 | 2.74 |
| | RP | 8W DALI | 97 | 2.74 | 2.74 | 2.74 | 2.84 | 2.74 | 2.74 |
| | RP | 10W dim | 85 | 2.74 | 2.74 | 2.74 | 2.84 | 2.74 | 2.74 |

**INFORMATION RELATED TO THE SECTORIAL EPD**
This EPD is not sectoral.

**VERSION HISTORY**
This is the first version of the EPD.

# Abbreviations

ADPE – Abiotic depletion potential non-fossil resources
ADPF – Abiotic depletion potential fossil resources
AP – Acidification potential, accumulated exceedance
AUT – Austria
CB – Certification Body
CRU – Components for re-use
d/i – direct / indirect
DALI – Digital Adressable Lighting Interface
EEE – Exported electrical energy
EET – Exported thermal energy
EPD – Environmental Product Declaration
EP-freshwater – Eutrophication potential freshwater
EP-marine – Eutrophication potential marine
EP-terrestrial – Eutrophication potential terrestrial
ETP-fw – Eco toxicity freshwater
FW – Net use of fresh water
GLO – Global
GWP-biogenic – Global warming potential biogenic
GWP-fossil – Global warming potential fossil fuels
GWP-GHG – Global warming potential
GWP-luluc – Global warming potential land use and land use change
GWP-total – Global warming potential total
HTTP-c – Human toxicity, cancer effect
HTTP-nc – Human toxicity, non-cancer effects
HWD – Hazardous waste disposed
IRP – Ionizing radiation, human health
LCA – Life Cycle Assessment
MER – Materials for energy recovery
MFR – Materials for recycling
NHWD – Non–harzardous waste disposed
NRSF – Use of non–renewable secondary fuels
ODP – Depletion potential of the stratospheric ozone layer
PCR – Product Category Rules
PENRE – Use of non renewable primary energy as energy carrier
PENRM – Use of non renewable primary energy resources used as raw materials
PENRT – Total use of non renewable primary energy resource
PERE – Use of renewable primary energy as energy carrier
PERM – Use of renewable primary energy resources used as raw materials
PERT – Total use of renewable primary energy
PM – Particulate matter emissions
PMMA – Polymethylmetacrylate
POCP – Photochemical ozone creation potential
PSR – Product Specific Rules
RE – Renewable Energy
RSF – Use of renewable secondary fuels
RWD – Radioactive waste disposed
SLO – Slovenia
SM – Use of secondary material
SQP – Land use related impacts/Soil quality
UN CPC – United Nations Central Product Classification
WDP – Water (user) deprivation potential

# References

EN 15804:2012+A2:2019 /AC:2021 Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products.

EN 15193-1:2017+A1:2021 Energy performance of building – Energy requirements for lighting

European court of auditors. EU actions and existing challenges on electronic waste. Review No. 4. 2021

General Programme Instructions of the International EPD. System. Version 5.0.1.

ISO 14020:2000 – Environmental labels and declarations – General principles

ISO 14025:2006 - Environmental labels and declarations - Type III environmental declarations - Principles and procedures

ISO 14040:2021 Environmental management — Life cycle assessment — Principles and framework

ISO 14044:2021 Environmental management — Life cycle assessment — Requirements and guidelines

LCA Background Report. DEEP IQ. XAL GmbH. 2026-02-05

LCA for Experts 10.9.1.19 (Sphera)

PCR-ed4-EN-2021 09 062021. P.E.P. Association. Product Category Rules for Electrical. Electronic and HVAC-R Products

Product category rules (PCR) 2019:14 Construction products version 2.0.1. 2025-06-05. The EPD International. 2025

PSR-0014-ed2.0-EN-2023 07 13. PSR SPECIFIC RULES FOR LUMINAIRES. According to PSRmodele-ed2-EN-2021 11 18.