Environmental *product* declaration

EPD of multiple products, based on a representative product in accordance with ISO 14025:2017 and EN 15804:2012+A2:2019/ AC:2021 for:

DEEP | DEEPER PAR16/LOXONE

REFERENCE PRODUCT
DEEP 1.0 PAR16

from Wever & Ducré

INCLUDING ALL PAR16 & LOXONE VARIANTS OF DEEP FAMILY
Included products are specified on page 4

PROGRAMME
The International EPD® System
www.environdec.com

PROGRAMME OPERATOR
EPD International AB

EPD REGISTRATION NUMBER	EPD-IES-0024569:001
PUBLICATION DATE	2025-06-18
VALID UNTIL	2030-06-17

This EPD follows additional requirements for construction products considered as Electronic or Electric Equipment. An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at *www.environdec.com*

EPD® THE INTERNATIONAL EPD® SYSTEM

ECO PLATFORM EPD VERIFIED

PROGRAMME INFORMATION

Programme System	The International EPD®
Address	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website	www.environdec.com
E-mail	info@environdec.com

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)

PRODUCT CATEGORY RULES (PCR)
PCR 2019:14 Construction products version 1.3.4, 2024-04-30
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: Claudia A. Peña, University of Concepción, Chile.

The review panel may be contacted via the Secretariat
www.environdec.com/contact

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

**INDEPENDENT THIRD-PARTY VERIFICATION OF THE DECLARATION
AND DATA, ACCORDING TO ISO 14025:2006, VIA**

☒ EPD verification by individual verifier

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

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 registered in different EPD programs, or not compliant with EN 15804:2012+A2:2019/AC:2021, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same 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/declared units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterization factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804:2012+A2:2019/AC:2021 and ISO 14025:2006.

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)

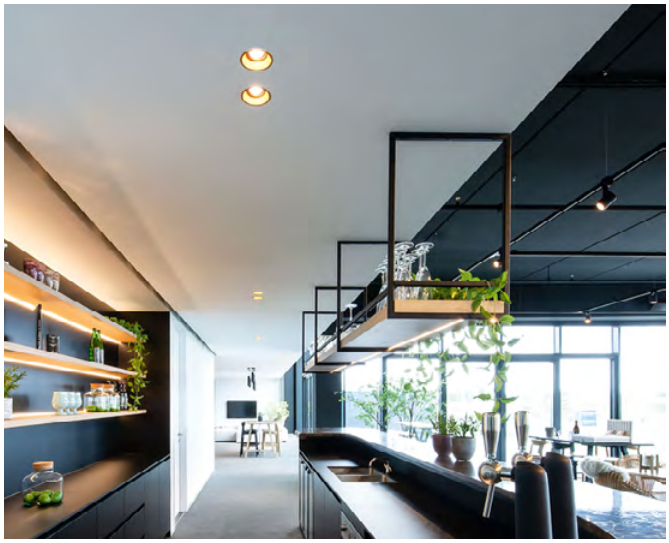
The production facilities operate in a complementary manner with each product passing through the same facilities.

More information
weverducre.com

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

office@weverducre.com

Product *information*



PRODUCT NAME

DEEP | DEEPER PAR16 / LOXONE

PRODUCT IDENTIFICATION

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

- DEEP 1.0 PAR16 (reference product)
- DEEP IP44 1.0 PAR16
- DEEPER 1.0 PAR16
- DEEPER IP44 1.0 PAR16
- DEEP ADJUST 1.0 PAR16
- DEEP ADJUST 2.0 PAR16
- DEEP ADJUST TRIMLESS PAR16
- DEEP ADJUST ASYM 1.0 PAR16
- DEEP 1.0 LOXONE
- DEEP IP44 1.0 LOXONE
- DEEPER 1.0 LOXONE
- DEEPER IP44 1.0 LOXONE
- DEEP ADJUST 1.0 LOXONE
- DEEP ADJUST 2.0 LOXONE
- DEEP ADJUST TRIMLESS 1.0 LOXONE
- DEEP ADJUST ASYM 1.0 LOXONE

The products are compatible with various PAR16 bulbs. For this LCA, bulbs recommended on the official product page have been added.

UN CPC CODE

- 4653 (Ver. 2.1) Lighting Equipment

PRODUCT IDENTIFICATION

CEILING RECESSED DOWNLIGHT
Premium downlight made of die-cast aluminium, available with or without trim (trimless), in adjustable or fixed versions. Finishes include matte or smooth surfaces available in multiple colours.

FLEXIBLE INSTALLATION
Tool-free installation via wire springs or aluminium plaster kit. Suitable for ceiling thicknesses from 4–38 mm, with optional plaster kit for specific setups. Recessed depth ranges from 50–130 mm.

TECHNOLOGY & VARIANTS
Available in different types – LED, Loxone, or PAR16. LED and Loxone versions feature high-efficiency COB (Chip on Board) technology, with beam angles between 31°–60° and high color rendering (CRI ≥ 90, MacAdam ≤ 3 SDCM).

ADJUSTABILITY & COMPATIBILITY
The fixture of DEEP AJUST variants is 355° rotatable and 35° tiltable. Compatible sockets include GU5.3 and GU10 for MR16 and PAR16 light sources.

PROTECTION & LIGHT SOURCE
Available in IP20, IP44, or IP65 protection classes. Light source may be replaceable or non-replaceable depending on the version.

DECLARED UNIT

The declared unit is one piece of DEEP 1.0 PAR16 2700 K including the Bulb. This product has been chosen as the reference due to the highest share of sales. The weight of the product per declared unit is 0.209 kg..

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.

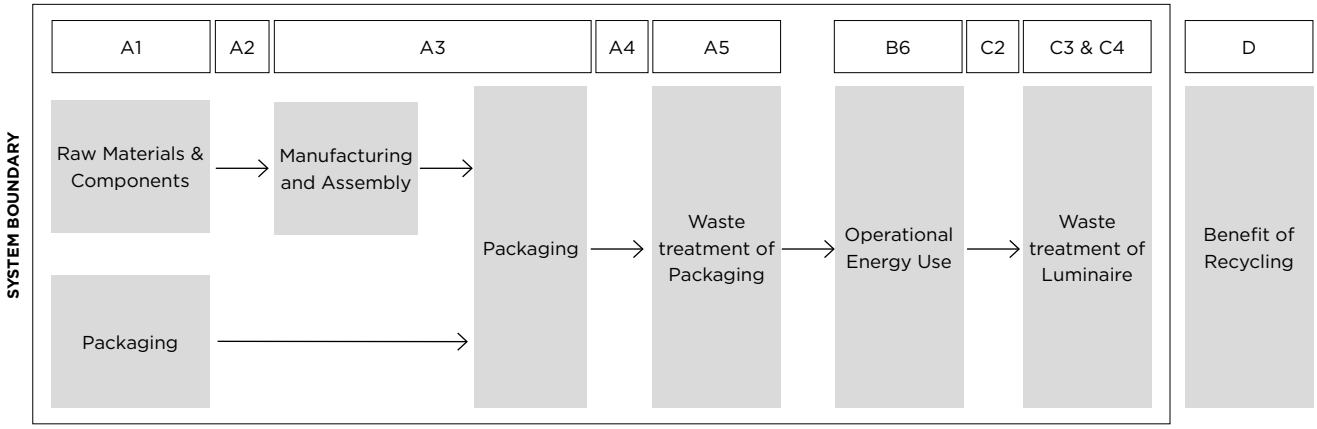
REFERENCE SERVICE LIVE
11.4 years

TIME REPRESENTATIVENESS
2024

DATABASE AND LCA SOFTWARE USED
LCA for Experts 10.9.0.31

SYSTEM BOUNDARIES
Cradle to grave and module D

SYSTEM DIAGRAM



ALLOCATION

Allocation by sales shares was done to identify the associated quantity of flows that are common for the factory: electricity and Natural gas for general factory needs and packaging, use of packaging materials and packaging waste from delivered 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 10.9.0.31. The final assembly of the luminaire is done in Dongguan, China. Products are then transported to Belgium and from there sold to costumers. 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 components manufactured in China, it is assumed that 24% are delivered by plane and 76% are delivered by ship route 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	0.043
Paper	0.007

USE, MAINTENANCE, REPAIR, REPLACEMENT AND REFURBISHMENT (B1, B2, B3, B4, B5)

These stages include the use, maintenance, repair, replacement and refurbishment of the product, which do not contribute to the environmental impacts of the product's functional unit.

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 – residential (55%), restaurant (7%), hotels (21%), office (9%), retail (4%), education (2%), sports (2%) with an average lifetime of 11.4 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 1.0 PAR16	UNIT
Electricity use (11.4 years)	273.8	kWh
Active power	6.5	W
Passive power	0	W
Total active time	42123.00	hours
Total passive time	57741.00	hours
Presence control	No	-

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

OPERATIONAL WATER USE (B7)

No water is consumed during the use stage. Therefore, this stage does not contribute to the environmental impacts of the product's functional unit

END-OF-LIFE STAGE (C1-C4)

The product is presumed to be decomposed manually; therefore, no emissions should occur. For the corresponding waste destinations, the following distances are used:

- To recycling facility – 250 km
- To incineration facility – 50 km
- To landfill – 100 km for metal and electronic parts, 20 km for plastic parts and packaging waste

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

SCENARIO	DEEP 1.0 PAR16	UNIT
Collected separately	0.209	kg
Collected with mixed (construction) waste	-	kg
For reuse	-	kg
For recycling	0.110	kg
For energy recovery	0.045	kg
For final disposal	0.054	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 1.0 PAR16	UNIT
Materials for recycling	0.15	kg
Materials for export of secondary fuels	-	kg
Materials for incineration	0.05	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 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

Based on site specific information, this LCA study reflects the production for 2024. Components are supplied by external vendors, therefore manufacturing processes are modelled using LCA for Experts, with the best fitting representative geographical conditions and applications.

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%).

ENVIRONMENTAL IMPACT OF THE ELECTRICITY USED IN CN	
CO_2 eq. [kg/kWh]	0.435

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	x	x	x	x	x	x	x	x	x	x	x	x
Geography	GLO	GLO	CN, BEL	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO
Specific data used	11.2%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	+216%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acronyms	GLO = Global, CN = China, BEL = Belgium																

PRODUCT COMPONENTS	**WEIGHT, KG**	**WEIGHT-% (VERSUS TOTAL WEIGHT)**	**POST-CONSUMER MATERIAL, WEIGHT-%**	**BIOGENIC MATERIAL, WEIGHT-% / DECLARED UNIT**	**BIOGENIC MATERIAL, KG C /DECLARED UNIT**
Aluminum	0.103	49.22	0.00	0.00	0.00
Polycarbonate	0.016	7.66	0.00	0.00	0.00
Polymethylmethacrylate (PMMA)	0.009	4.31	0.00	0.00	0.00
Copper	0.016	7.57	0.00	0.00	0.00
Nylon 6.6 (PA66)	0.015	7.03	0.00	0.00	0.00
Steel	0.011	5.39	0.00	0.00	0.00
Epoxy-Resin	0.010	4.65	0.00	0.00	0.00
Polytetrafluorethylene (PTFE)	0.010	4.94	0.00	0.00	0.00
Ceramic	0.005	2.42	0.00	0.00	0.00
Glass fibers	0.005	2.22	0.00	0.00	0.00
Copper in alloy	0.003	1.22	0.00	0.00	0.00
Tin	0.002	1.16	0.00	0.00	0.00
Others (<1%)	0.005	2.21	0.00	0.00	0.00
TOTAL	**0.209**	**100.00**	**0.00**	**0.00**	**0.00**

PACKAGING MATERIALS*	**WEIGHT, KG**	**WEIGHT-% (VERSUS THE PRODUCT)**	**WEIGHT BIOGENIC CARBON, KG C / DECLARED UNIT**
Paper	0.006	4.32	0.0032
Cardboard	0.017	11.47	0.0084
TOTAL	**0.023**	**15.79**	**0.0116**

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.*

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 PIECE OF DEEP BIJOU 1.0 LED										
INDICATOR	**Unit**	**A1 – A3**	**A4**	**A5**	**B1 – B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP – fossil	kg CO2 eq.	3.58E+00	1.18E-02	1.60E-03	0.00E+00	8.46E+01	0.00E+00	0.00E+00	4.03E-03	1.19E-01	6.37E-04	-8.40E-01
GWP – biogenic	kg CO_2 eq.	-9.43E-02	0.00E+00	9.43E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GWP – luluc	kg CO_2 eq.	1.12E-03	2.21E-04	1.90E-05	0.00E+00	1.54E-02	0.00E+00	0.00E+00	6.87E-05	2.19E-06	2.26E-06	-1.02E-04
GWP – total	**kg CO_2 eq.**	**3.49E+00**	**1.20E-02**	**9.60E-02**	**0.00E+00**	**7.29E+01**	**0.00E+00**	**0.00E+00**	**4.09E-03**	**1.19E-01**	**6.39E-04**	**-8.40E-01**
ODP	kg CFC 11 eq.	9.43E-11	2.69E-15	1.76E-15	0.00E+00	1.64E-09	0.00E+00	0.00E+00	4.12E-16	4.57E-14	1.83E-15	-4.83E-12
AP	mol H+ eq.	1.72E-02	1.60E-05	5.31E-06	0.00E+00	2.57E-01	0.00E+00	0.00E+00	5.85E-06	2.14E-05	4.19E-06	-4.62E-03
EP – freshwater	kg P eq.	1.54E-05	3.10E-08	4.53E-08	0.00E+00	3.43E-04	0.00E+00	0.00E+00	1.75E-08	1.04E-08	1.23E-09	-9.51E-07
EP – marine	kg N eq.	3.62E-03	5.91E-06	2.37E-06	0.00E+00	4.31E-02	0.00E+00	0.00E+00	2.16E-06	4.94E-06	1.04E-06	-7.58E-04
EP – terrestrial	mol N eq.	3.92E-02	7.14E-05	2.24E-05	0.00E+00	4.55E-01	0.00E+00	0.00E+00	2.57E-05	9.84E-05	1.14E-05	-8.22E-03
POCP	kg NMVOC eq.	1.07E-02	1.52E-05	7.23E-06	0.00E+00	1.20E-01	0.00E+00	0.00E+00	5.54E-06	1.36E-05	3.21E-06	-2.19E-03
ADP – minerals & metals*	kg Sb eq.	6.81E-05	1.95E-09	1.17E-10	0.00E+00	1.66E-05	0.00E+00	0.00E+00	3.48E-10	9.40E-10	5.08E-11	-6.12E-05
ADP – fossil*	MJ	4.05E+01	1.50E-01	2.16E-02	0.00E+00	1.72E+03	0.00E+00	0.00E+00	5.34E-02	6.00E-02	9.91E-03	-1.00E+01
WDP*	m^3	6.76E-01	8.13E-05	9.24E-04	0.00E+00	1.67E+01	0.00E+00	0.00E+00	6.09E-05	1.13E-02	7.59E-05	-1.30E-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 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 PIECE OF DEEP BIJOU 1.0 LED										
INDICATOR	**Unit**	**A1 – A3**	**A4**	**A5**	**B1 – B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP – GHG[1]	kg CO_2 eq.	3.58E+00	1.20E-02	1.62E-03	0.00E+00	7.29E+01	0.00E+00	0.00E+00	4.09E-03	1.19E-01	6.39E-04	-8.40E-01
PM	disease inc.	1.73E-07	8.08E-11	4.27E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.64E-11	2.44E-11	2.17E-11	-3.53E-08
IRP – HE**	kg U235-eq	2.15E-02	1.05E-05	2.86E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.29E-06	2.01E-05	9.30E-06	-3.37E-02
ETP – fw*	CTUe	6.73E+00	6.19E-02	1.48E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.75E-02	2.18E-03	3.04E-03	-1.77E+00
HTP – c*	CTUh	1.06E-08	1.22E-12	3.45E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.51E-13	1.86E-13	6.61E-14	-3.84E-10
HTP – nc*	CTUh	1.28E-08	5.03E-11	1.99E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.56E-11	1.52E-11	2.35E-12	-4.62E-09
SQP	dimension-less	5.01E+00	5.11E-02	8.00E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.18E-02	1.67E-03	9.15E-04	7.19E+00

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 PIECE OF DEEP BIJOU 1.0 LED									
INDICATOR	**Unit**	**A1 – A3**	**A4**	**A5**	**B1 – B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	9.71E+00	1.63E-02	2.33E-03	0.00E+00	1.21E+03	0.00E+00	0.00E+00	4.51E-03	2.32E-02	1.47E-03	-4.00E+00
PERM	MJ	8.90E-01	0.00E+00	-8.90E-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	1.06E+01	1.63E-02	-8.88E-01	0.00E+00	1.21E+03	0.00E+00	0.00E+00	4.51E-03	2.32E-02	1.47E-03	-4.00E+00
PENRE	MJ	4.05E+01	1.50E-01	2.16E-02	0.00E+00	1.72E+03	0.00E+00	0.00E+00	5.34E-02	6.00E-02	9.91E-03	-1.00E+01
PENRM	MJ	1.18E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.18E+00	0.00E+00	0.00E+00
PENRT	MJ	4.17E+01	1.50E-01	2.16E-02	0.00E+00	1.72E+03	0.00E+00	0.00E+00	5.34E-02	-1.12E+00	9.91E-03	-1.00E+01
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	1.52E-01
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	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	0.00E+00	0.00E+00
FW	m^3	1.70E-02	1.55E-05	2.29E-05	0.00E+00	5.72E-01	0.00E+00	0.00E+00	5.07E-06	2.73E-04	2.30E-06	-4.14E-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 PIECE OF DEEP BIJOU 1.0 LED									
INDICATOR	**UNIT**	**A1 – A3**	**A4**	**A5**	**B1 – B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	2.52E-08	6.39E-12	2.61E-12	0.00E+00	2.55E-06	0.00E+00	0.00E+00	1.73E-12	1.63E-11	1.83E-12	-2.04E-09
Non-hazardous waste disposed	kg	4.51E-01	2.48E-05	3.95E-03	0.00E+00	1.55E+00	0.00E+00	0.00E+00	8.30E-06	1.19E-02	3.50E-02	-2.88E-01
Radioactive waste disposed	kg	3.13E-04	2.03E-07	1.92E-07	0.00E+00	2.66E-01	0.00E+00	0.00E+00	6.90E-08	3.13E-06	1.28E-07	-5.35E-04

OUTPUT FLOW INDICATORS

		RESULTS PER PIECE OF DEEP BIJOU 1.0 LED									
INDICATOR	**UNIT**	**A1 – A3**	**A4**	**A5**	**B1 – B5**	**B6**	**B7**	**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	0.00E+00	0.00E+00
Material for recycling	kg	5.23E-02	0.00E+00	5.01E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.40E-02	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	4.06E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.80E-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	0.00E+00	0.00E+00
Exported energy. 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	0.00E+00	0.00E+00

Additional Environmental *information*

SCALING FACTORS FOR OTHER VARIANTS

The different variants of DEEP FAMILY 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		A1–A3	A4	A5	B6	C1–C4	D
DEEP 1.0	PAR16	1.00	1.00	1.00	1.00	1.00	1.00
DEEPER 1.0	PAR16	0.93	0.94	0.82	1.00	0.99	0.92
DEEP IP44 1.0	PAR16	1.08	1.19	1.47	1.00	1.05	1.08
DEEPER IP44 1.0	PAR16	0.97	1.07	1.10	1.00	1.04	0.95
DEEP ADJUST 1.0	PAR16	1.13	1.08	1.17	1.00	1.03	1.15
DEEP ADJUST 2.0	PAR16	1.81	1.66	2.18	2.00	1.19	1.89
DEEP ADJUST ASYM 1.0	PAR16	1.14	1.11	1.06	1.00	1.05	1.16
DEEP ADJUST TRIMLESS 1.0	PAR16	1.08	1.03	1.08	1.00	1.02	1.10
DEEP 1.0	LOXONE	1.34	0.97	1.39	1.03	0.28	1.22
DEEPER 1.0	LOXONE	1.27	0.91	1.22	1.03	0.27	1.14
DEEP IP44 1.0	LOXONE	1.43	1.16	1.86	1.03	0.33	1.30
DEEPER IP44 1.0	LOXONE	1.31	1.05	1.50	1.03	0.31	1.17
DEEP ADJUST 1.0	LOXONE	1.47	1.05	1.56	1.03	0.31	1.37
DEEP ADJUST 2.0	LOXONE	2.16	1.63	2.58	2.06	0.47	2.11
DEEP ADJUST ASYM 1.0	LOXONE	1.49	1.08	1.45	1.03	0.33	1.38
DEEP ADJUST TRIMLESS 1.0	LOXONE	1.42	1.00	1.48	1.03	0.30	1.32

For A1-A3, The 1.81-fold and 2.16-fold scaling factors arise from products incorporating two luminaires, doubling raw material consumption compared to single-unit variants. The proportional increase in materials inherently amplifies the environmental impact variance, consistent with the declared product family scope.

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.

		Conversion factors					
VARIANT (3000 K)		**A1 – A3**	**A4**	**A5**	**B6**	**C1 – C4**	**D**
DEEP 1.0	PAR16	2.15	2.15	2.15	2.11	2.15	2.15
DEEPER 1.0	PAR16	2.15	2.15	2.15	2.11	2.15	2.15
DEEP IP44 1.0	PAR16	2.15	2.15	2.15	2.11	2.15	2.15
DEEPER IP44 1.0	PAR16	2.15	2.15	2.15	2.11	2.15	2.15
DEEP ADJUST 1.0	PAR16	2.15	2.15	2.15	2.11	2.15	2.15
DEEP ADJUST 2.0	PAR16	1.08	1.08	1.08	1.06	1.08	1.08
DEEP ADJUST ASYM 1.0	PAR16	2.15	2.15	2.15	2.11	2.15	2.15
DEEP ADJUST TRIMLESS 1.0	PAR16	2.15	2.15	2.15	2.11	2.15	2.15
DEEP 1.0	LOXONE	2.47	2.47	2.47	2.43	2.47	2.47
DEEPER 1.0	LOXONE	2.00	2.00	2.00	1.96	2.00	2.00
DEEP IP44 1.0	LOXONE	2.00	2.00	2.00	1.96	2.00	2.00
DEEPER IP44 1.0	LOXONE	2.00	2.00	2.00	1.96	2.00	2.00
DEEP ADJUST 1.0	LOXONE	2.38	2.38	2.38	2.34	2.38	2.38
DEEP ADJUST 2.0	LOXONE	1.19	1.19	1.19	1.17	1.19	1.19
DEEP ADJUST ASYM 1.0	LOXONE	2.86	2.86	2.86	2.81	2.86	2.86
DEEP ADJUST TRIMLESS 1.0	LOXONE	2.38	2.38	2.38	2.34	2.38	2.38

INFORMATION RELATED TO THE SECTORIAL EPD

This EPD is not sectoral.

DIFFERENCES FROM PREVIOUS VERSIONS

This is the first version of the EPD.

References

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

EN 15193:2007 Energy performance of buildings - 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 4.0.

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 | DEEPER LED, 2025-05-22

LCA for Experts 10.9.0.31

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 1.3.4, 2024-04-30. The EPD International, 2024

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

PHOTO CREDITS

p. 4 © Kris Dekeijser
p. 4 © Kris Dekeijser