

Programme:

The International EPD[®] System:

www.environdec.com

In accordance with ISO 14025:2006 and

EN15804:2012+A2:2019/AC:2021 for:

Programme Operator:

EPD International AB

RETROFIT DOWNLIGHTS

EPD Registration Number:

EPD-IES-0016596

From Orlight Limited

EPD of multiple products, based on a representative product

Publication Date:

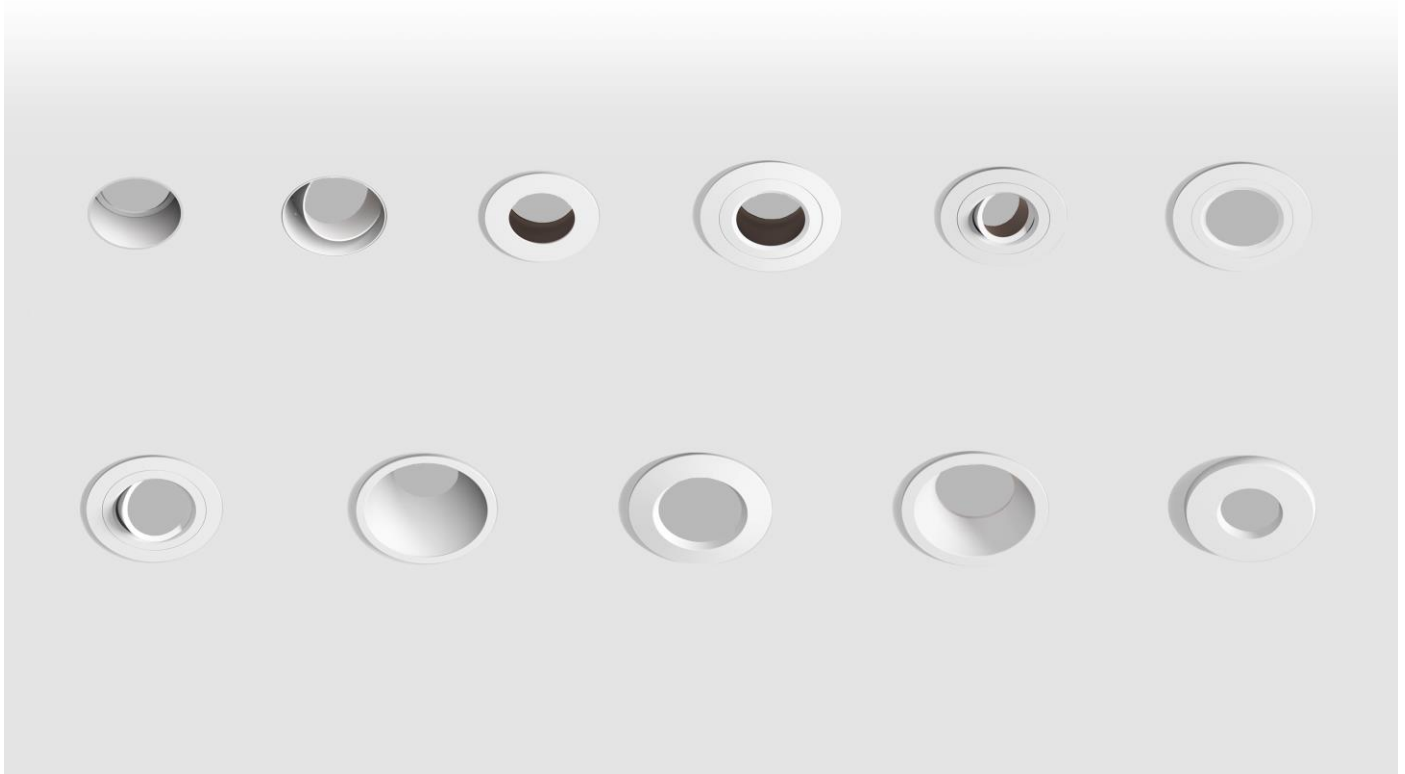
2024-11-27

Product model:

Valid Until:

2029-11-27

ORLCB, ORL1018, ORL009, ORL1009, ORL1019, ORL6009, ORL6019, ORLCL, STEAM, AQUA and SHOWER family



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



Programme Information:

Programme	The International EPD® System	Website	www.environdec.com
Address	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden	E-mail	info@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 (EN 15804: A2) (1.3.4)
This EPD follows additional requirements for construction products considered as Electronic or Electric Equipment

PCR review was conducted by:

The Technical Committee of the International EPD® System. See www.environdec.com/TC 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:

Jiliang Tao/Bin Xu, CTI Certification Co., Ltd

Third party verification:

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:

EPD verification by individual verifier

Third-party verifier: Rui Wang, IVL Swedish Environmental Research Institute

Approved by: The International EPD® System

Procedure for follow-up of data during EPD validity involves third party verifier:

Yes No

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

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, 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/functional 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 characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.



Owner of the EPD: ORLIGHT LIMITED **Contact:** Wilson Mendes **E-mail:** info@orlight.com

About Us

Orlight, your premier turn-key lighting supply partner. Established in 1997, Orlight has become a dominant force in the architectural lighting market, consistently adding value to our clients' propositions with unparalleled lighting products and services. Our unique approach to the ever-evolving industry has made us a trusted name among developers and construction firms.

Our Mission

We pride ourselves on being 100% in command of our supply chain, from quality control and product innovation to research, development and procurement. With no third-party involvement, we deliver superior products at competitive prices. Our substantial stock holdings in the UK and Europe ensure swift dispatch, minimising waiting times and providing a distinct advantage to our clients.

Market Sector and Credibility

Orlight caters to large-scale residential and commercial developments, in response to market demand, we expanded from a predominantly residential lighting business into the commercial lighting sector for data centres, office spaces and other commercial environments, which has proven a success for us. Our growing commercial product range combines high-specification LED technology with aesthetic appeal, ensuring first-class offerings that maintain critical performance values. Our reputation, built over more than 25 years, is reinforced by long-standing relationships with major developers and construction firms. We also serve a diverse portfolio of clients, with projects extending globally to the Middle East, Europe and China.

Sustainability Commitment

At Orlight, sustainability is a core value that informs all aspects of our business. We take our environmental responsibilities seriously, integrating eco-friendly practices throughout our supply chain and manufacturing processes. We are committed to reducing our carbon footprint and improving operational efficiency. We continuously seek ways to enhance our sustainability efforts, ensuring that our products are not only high-quality but also environmentally responsible.

Value Proposition and Deliverability

To streamline processes, we offer direct credit accounts to M&E Contractors, Electrical Installers and Construction Companies, now extending these facilities to North America, Europe and the Middle East. By eliminating third parties, we help clients control costs effectively. With stocks exceeding £10M and a fleet of vehicles, our FORS Gold Accredited operation guarantees high performance, safety and efficiency, reinforcing our commitment to a reliable Source to Site® service.

The Complete Project from Concept to Delivery

Orlight's Source to Site business model is rooted in value, quality and efficiency. Our comprehensive in-house departments provide a full spectrum of services, from initial design to bespoke product manufacturing and technical support. Our adaptability allows us to tackle various projects, including luxury Apartments, Commercial & Hospitality developments, Gyms, Spas, Data Centres and other areas located both internally and externally. This flexibility and control over our manufacturing process make Orlight a sought-after partner for high-end projects across London and beyond.

At Orlight, our commitment to innovation, quality, sustainability and client satisfaction drives us to deliver exceptional lighting solutions for every project. Join us in illuminating the future with excellence.

Product-related or management system-related certifications

- ISO 9001:2015 – Quality Management Service
- ISO 14001:2015 – Environmental Management System

Name and location of production site:

Dongguan, China

Product Name:

This EPD® represents Retrofit Downlight products, ORLCB, ORL1018, ORL009, ORL1009, ORL1019, ORL6009, ORL6019, ORLCL, STEAM, AQUA and SHOWER family from Orlight, including the following models:

(Note that these products do not include a light source and are used as a metal housing for retrofitting.)

ORLCB, ORL1018, ORL009, ORL1009, ORL1019, ORL6009, ORL6019, ORLCL Family



ORLCB



ORL1018



ORL009



ORL1009



ORL1019



ORL6009



ORL6019

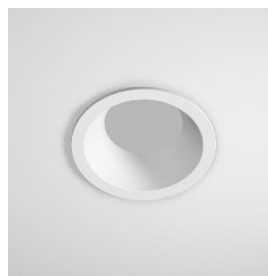


ORLCL

STEAM, AQUA and SHOWER Family



STEAMSPOT



AQUASPOT



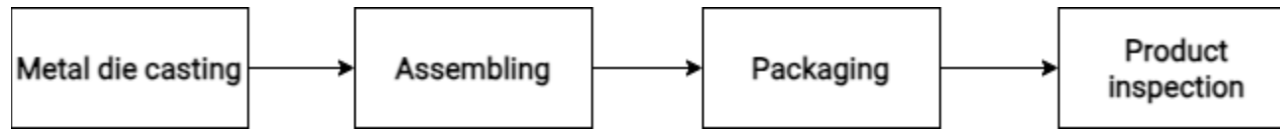
SHOWERSPOT

Product Information

Product Identification:

PRODUCT	VARIATION	MOUNTING	IP RATING	LOR
ORLCB	FIXED / ADJUSTABLE / ADJUSTABLE RECESSED	TRIMLESS / RECESSED	IP20 / IP44	UP TO 88
ORL1018	FIXED / ADJUSTABLE (SINGLE / TWIN / TRIPLE)	TRIMLESS	IP20 / IP44	UP TO 94
ORL009	FIXED / ADJUSTABLE	TRIMLESS / RECESSED	IP20 / IP44	UP TO 82
ORL1009	FIXED / FIRE RATED / HIGH SPEC / SLIM / SQUARE / SURFACE	RECESSED / SURFACE	IP20 / IP44	UP TO 86
ORL1019	ADJUSTABLE / FIRE RATED / HIGH SPEC / SLIM / SQUARE	RECESSED	IP20 / IP54	UP TO 74
ORL6009	FIXED	RECESSED	IP20 / IP44	UP TO 100
ORL6019	ADJUSTABLE	RECESSED	IP20	100
ORLCL	FIXED / ADJUSTABLE	RECESSED	IP20 / IP54	UP TO 88
STEAMSPOT	FIXED	RECESSED	IP65	78
AQUASPOT	FIXED / WALL WASH	RECESSED	IP65	UP TO 76
SHOWERSPOT	FIXED / FIRE RATED / SQUARE	RECESSED	IP65	UP TO 88
The test standard of products refers to: IES LM-79-08, ANSI C78.377-2017				

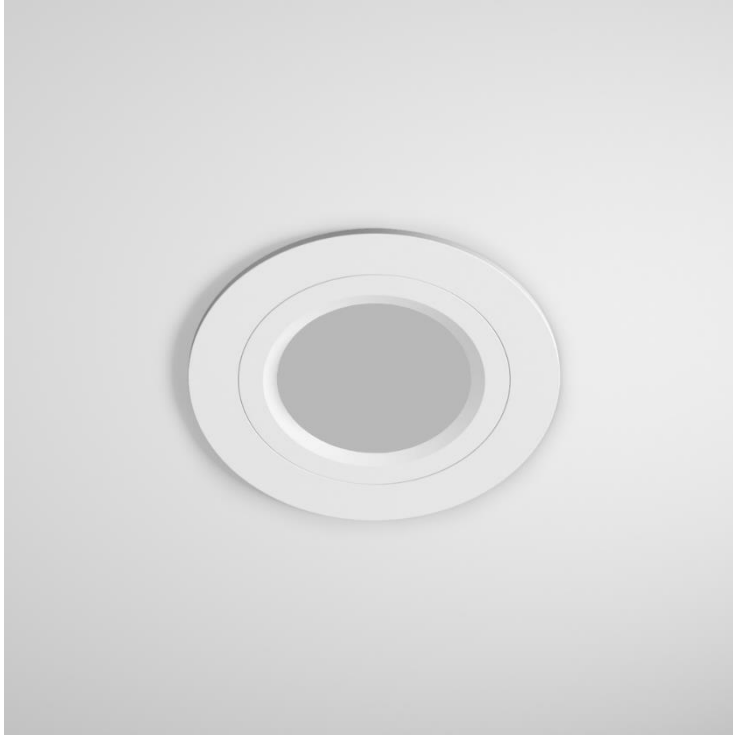
Manufacturing Process:



The Retrofit Downlight products of ORLCB, ORL1018, ORL009, ORL1009, ORL1019, ORL6009, ORL6019, ORLCL, STEAM, AQUA and SHOWER family from Orlight are manufactured in the same site and have the same major steps in the core manufacturing processes, including metal die casting, assembling, packaging, and product inspection etc. All products have the same structure and function, the difference is the type of light that can be installed and the appearance is different.

This EPD of multiple products is based on the representative product, which is **ORL6009-HS-AW-9016**, according to the sales revenue. This product does not contain a light source, the main body is the metal housing, which is designed to be retrofit so that the end user can purchase and use any lamp/engine on the market which has a 50mm diameter.

Product Description:



ORL6009-HS-AW-9016

The ORL6009, is a flush-mounted fixed magnetic downlight designed to seamlessly integrate with the ceiling, offering a minimalist and contemporary lighting solution. The downlight is crafted with both elegance and functionality. With its sleek profile, the ORL6009 sits flush with the ceiling surface, providing a clean and unobtrusive look that enhances the aesthetics of any space.

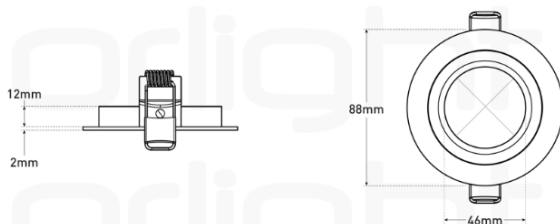
The downlight features an innovative outer retaining collar that ensures easy and secure installation. Maintenance of the ORL6009 is equally hassle-free. The downlight is made with a magnetic lamp retention mechanism, allowing for quick and easy lamp changes. Simply remove the centre body of the fixture to access the lamp. This magnetic mechanism not only simplifies maintenance but also ensures a secure and reliable hold, giving you peace of mind.

Available in two versions: IP20 and IP44. The IP20 version is ideal for general indoor use in living rooms, bedrooms, and offices, where protection against dust is sufficient. For areas that require additional protection against moisture, such as bathrooms and kitchens, the IP44 version is perfect, offering enhanced resistance to splashing water.

ORL6009-IP20

CIRCULAR
CUT OUT: 90mm

FIXED



UN CPC Code:

4653 Lighting Equipment

Geographical Scope:

Modules A1-A3: CN

Modules A4-A5: GLO

Modules B and C: UK

Declared Unit:

One piece of RETROFIT DOWNLIGHT product, the weight of the representative product per declared unit is 0.131 kg.

Reference service life:

3 Years

Time representativeness:

From 1st January 2023 to 31st December 2023

Database(s) and LCA software used:

Database Ecoinvent 3.10 and Simapro 9.6

Cut-off criteria:

In the event of insufficient input data or data gaps for a unit process, the cut-off criteria should be set at 1% for both renewable and non-renewable primary energy usage, as well as 1% for the total mass input of that unit process. The cumulative neglected input flows A1-A3, A4-A5, B1-B7, C1-C4 and module D, shall not exceed 5% of energy usage and mass. In addition, the consumption and emissions of roads and plants' infrastructure, capital goods, equipment of each process, personnel and living facilities in the plants were excluded.

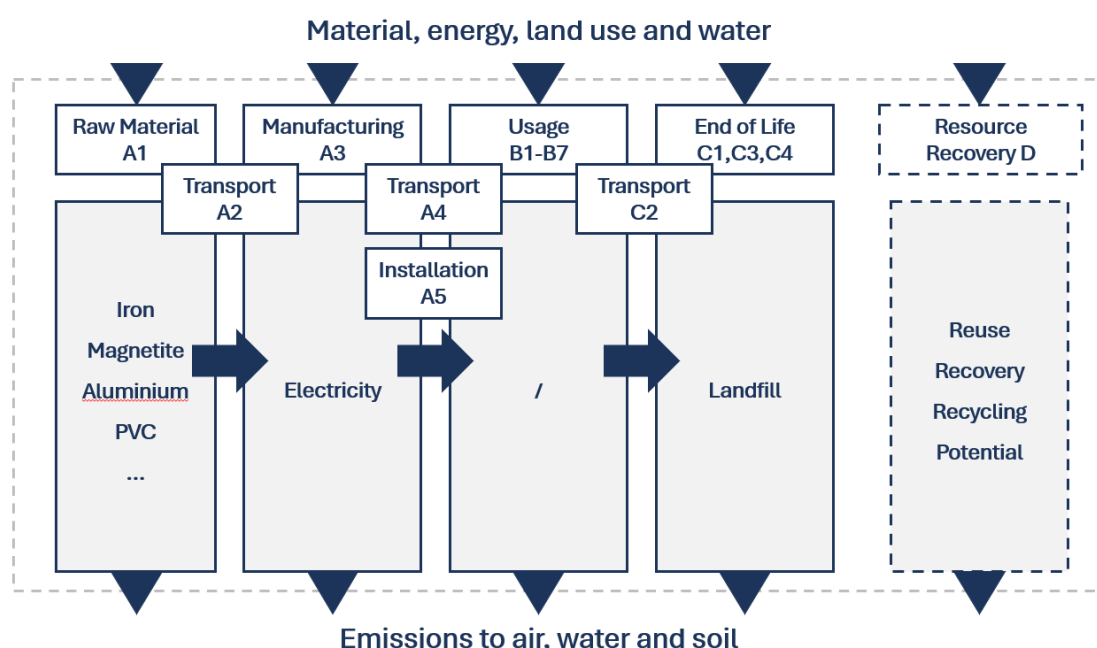
Allocation rules:

In this assessment, the allocation of energy consumption, resource use, emissions and wastes from the manufacturing process are based on economic values of the products when they leave the unit process, which is the revenue generated by RETROFIT DOWNLIGHT and other products, which are from the same manufacturing site of Orlight Limited. The revenue is the product annual average price multiplied by the output volume of products.

Description of system boundaries:

Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + C + D + A4–A5 and B1–B7)

System diagram:



Assumptions:

At construction process stage A5, the transportation of the product to the customer or building site is considered, with the transport distance assumed to be 100 km. The product is installed manually.

In Module B6 operational energy use, there is no operational energy consumption with this product because it does not contain a light source and is installed manually.

At end-of-life stage C2, an average distance of 100 km is assumed for transport to the recycling facility and landfill site.

Additional information:

In this EPD, the EN 15804 reference package is based on EF 3.1

In this EPD, the benefits of 100% of scrap metal and 65% of the rest part from Linear LED product are included in module D. The same approach has been applied to packaging materials because all the packaging materials are 100% recycled by Orlight.

The data for the generation of electricity applied in A3 is electricity mixes on the market, namely the China Southern Power Grid Mix in the Ecoinvent 3.10 (cut-off) database. Its GWP-GHG impact is 0.703 kgCO₂eq/kWh. The reference year of electricity dataset is 2014-2022.

Conversion Factor:

PRODUCT	WEIGHT (KG/DECLARED UNIT)	CONVERSION FACTOR
ORL6009-HS-AW-9016	0.131	0.131

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	X
Geography	CN	CN	CN	GLO	GLO	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	UK	
Specific data used	4.71%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Variation – products	-5.09%/35.31%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Content Information

The content information below is based on 1 piece of ORL6009-HS-AW-9016 product, which is the representative product within the ORL6009 family. The product weight is 0.131 kg, excluding packaging materials. As the share of bio-based/recycled material is unknown, this part of the content declaration is declared as 0% as a conservative estimation.

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Cast iron	0.019	0	0
Aluminium Alloy	0.011	0	0
Chromium steel 18/8	0.003	0	0
Polyvinyl Chloride	0.003	0	0
Steel, low-alloyed	0.002	0	0
Cast iron	0.003	0	0
Cast iron	0.05	0	0
Magnetite	0.009	0	0
TOTAL	0.1	0	0
Packaging materials	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
PE	0.001	0	0
PE	0.001	0	0
Paper	0.029	0	0
TOTAL	0.031	0	0

Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight-% per functional or declared unit
None	-	-	-

The product does not include in its life cycle any dangerous substances included in the "Very High Impact Candidate List for Authorization (SVHC)" in a percentage greater than 0.1% of the weight of the product.

Results of the environmental performance indicators

Mandatory impact category indicators according to EN 15804:

Results per declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-fossil	kg CO ₂ eq.	5.22E-01	2.50E-02	-2.63E-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	2.05E-03	0.00E+00	2.13E-04	-2.91E-01
GWP-biogenic	kg CO ₂ eq.	-3.19E-02	-7.33E-06	3.15E-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	1.20E-07	0.00E+00	2.91E-03	2.37E-04
GWP-luluc	kg CO ₂ eq.	1.09E-03	1.29E-05	-4.82E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.34E-07	0.00E+00	5.99E-08	-8.80E-04
GWP-total	kg CO ₂ eq.	4.91E-01	2.50E-02	5.12E-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	2.05E-03	0.00E+00	3.12E-03	-2.92E-01
ODP	kg CFC 11 eq.	6.48E-09	3.59E-10	-4.66E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.98E-11	0.00E+00	1.43E-12	-3.25E-09
AP	mol H ⁺ eq.	3.13E-03	6.97E-04	-1.95E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.29E-06	0.00E+00	7.17E-07	-2.05E-03
EP-freshwater	kg P eq.	1.58E-04	8.67E-07	-9.69E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.64E-07	0.00E+00	3.19E-07	-9.02E-05
EP-marine	kg N eq.	5.70E-04	1.74E-04	-5.08E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.49E-06	0.00E+00	6.00E-06	-3.47E-04
EP-terrestrial	mol N eq.	5.96E-03	1.94E-03	-5.16E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.80E-05	0.00E+00	2.23E-06	-3.66E-03
POCP	kg NMVOC eq.	1.88E-03	5.26E-04	-1.59E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.31E-05	0.00E+00	1.41E-06	-1.13E-03
ADP-minerals&metals*	kg Sb eq.	5.04E-06	2.75E-08	-6.34E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.39E-09	0.00E+00	1.48E-10	-4.23E-06
ADP-fossil*	MJ	5.64E+00	3.09E-01	-4.61E-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	2.91E-02	0.00E+00	1.35E-03	-2.59E+00
WDP*	m ³	1.34E-01	7.66E-04	-2.89E-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	1.39E-04	0.00E+00	-6.82E-04	-7.98E-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 use of the results of Modules A1-A3 (A1-A5 for services) without considering the results of Module C is discouraged. 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.																

* 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.

Results of the environmental performance indicators

Additional mandatory and voluntary impact category indicators:

Results per declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	5.23E-01	2.50E-02	-2.64E-02	0.00E+00	0.00E+00	2.05E-03	0.00E+00	2.13E-04	-2.92E-01	5.23E-01	2.50E-02	-2.64E-02	0.00E+00	0.00E+00	2.05E-03

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 CO₂ is set to zero.

Results of the environmental performance indicators

Resource use indicators:

Results per declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	6.65E-01	2.34E-03	-5.60E-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	3.81E-04	0.00E+00	4.09E-05	-2.85E-01
PERM	MJ	4.22E-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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	1.09E+00	2.34E-03	-5.60E-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	3.81E-04	0.00E+00	4.09E-05	-2.85E-01
PENRE	MJ	5.64E+00	3.09E-01	-4.61E-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	2.91E-02	0.00E+00	1.35E-03	-2.59E+00
PENRM	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	5.64E+00	3.09E-01	-4.61E-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	2.91E-02	0.00E+00	1.35E-03	-2.59E+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	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	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	M ³	4.27E-03	2.41E-05	-7.44E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.12E-06	0.00E+00	-1.58E-05	-2.76E-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															

Results of the environmental performance indicators

Waste indicators:

Results per declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.86E-04	1.62E-06	-1.15E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.98E-07	0.00E+00	8.40E-09	-1.64E-04
Non-hazardous waste disposed	kg	2.46E-02	1.77E-03	-3.12E-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	1.78E-03	0.00E+00	4.21E-03	-1.54E-02
Radioactive waste disposed	kg	4.71E-06	3.64E-08	-4.21E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.17E-09	0.00E+00	8.17E-10	-5.75E-07

Output flow indicators:

Results per declared unit																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	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	0.00E+00	0.00E+00	0.00E+00	1.27E-01
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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Results of the environmental performance indicators

The variation of mandatory impact category indicators according to EN 15804:

Variation from module A to C			
Indicator	Unit	Variation from module A to C	
GWP-fossil	kg CO ₂ eq.	-5.26%	37.03%
GWP-biogenic	kg CO ₂ eq.	-75.55%	138.68%
GWP-luluc	kg CO ₂ eq.	-2.04%	35.33%
GWP-total	kg CO ₂ eq.	-5.58%	37.50%
ODP	kg CFC 11 eq.	-47.04%	45.19%
AP	mol H ⁺ eq.	-5.46%	38.15%
EP-freshwater	kg P eq.	-5.10%	36.37%
EP-marine	kg N eq.	-8.38%	36.86%
EP-terrestrial	mol N eq.	-7.94%	36.63%
POCP	kg NMVOC eq.	-8.15%	36.07%
ADP-minerals&metals*	kg Sb eq.	10.89%	56.49%
ADP-fossil*	MJ	-7.02%	35.69%
WDP*	m ³	-3.43%	49.65%
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		

ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations - Principles and procedures.

ISO 14040:2006 Environmental management - Life cycle assessment - Principles and frameworks.

ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines.

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

EPD System PCR 2019:14 Construction products, version 1.3.4

General Programme Instructions of the International EPD® system. Version 5.0

LIFE CYCLE ASSESSMENT of RETROFIT DOWNLIGHTS for Environmental Product Declaration (LCA report)

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