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:

PASTILLE
W242

from W+

Including multiple products of Pastille collection. 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-0034061:001
Version date	2026-09-08
Validity date	2031-09-07

Wastberg+
T +46 10 16 15 010
info@wastberg.com
wastberg.com

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.

EPD INTERNATIONAL EPD SYSTEM
ECO PLATFORM EPD VERIFIED

Programme information

Programme
The International EPD® System

Address
EPD International AB
Box 210 60
SE-100 31 Stockholm
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 eview 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:

Elisabet Amat Guasch
GREENIZE Projects
eamat@greenize.es

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 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.

Owner of the EPD
Wastberg+
Box 5085
200 71 Malmö
Sweden

Contact
epd@wastberg.com

Description of the organisation:
We create well-being through good light.

Working closely with leading architects and designers, we develop holistic lighting for humans and spaces.

Name and location of production site:
The production site is located in Dongguan, Guangdong, China.

More information:
wastberg.com

Product Name
Pastille

Product Identification
This EPD covers multiple products of the Pastille collection:

– Pastille Base W242B2 (reference product)
– Pastille Clamp W242CL1
– Pastille Clamp W242CL2
– Pastille Pin W242P2
– Pastille Bracket W242BR1
– Pastille Bracket W242BR2
– Pastille Floor W242F2

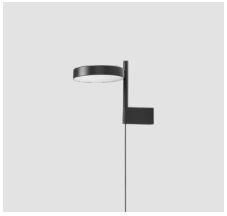
All variants are available in different colours with jet black, olive green, oxide red, raw aluminium, telegray 4, and traffic white. Scaling factors for all variants can be found in Additional Environmental information section.

This EPD covers multiple variants of the Pastille collection:

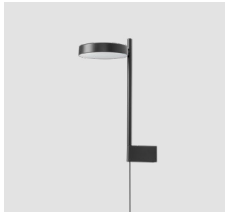
PASTILLE
BASE
W242B2

PASTILLE
PIN
W242P2

PASTILLE
FLOOR
W242F2



PASTILLE
BRACKET SHORT
W242BR1



PASTILLE
BRACKET LONG
W242BR2

PASTILLE
CLAMP SHORT
W242CL1

PASTILLE
CLAMP LONG
W242CL2

DIRECT LIGHT

Pastille builds on pure geometric simplicity: a luminous disc attached to a thin vertical line. Designed as an invitation to interaction, its generous light can be fluidly rotated and directed, shifting seamlessly from bright, comfortable clarity to a soft, ambient glow.

The Pastille Collection includes seven variants: the desk version W242B2 with a steel base for reliable stability; the clamp mounted W242CL1 and W242CL2 for quick, flexible placement on desks and shelves, W242CL2 featuring a longer pole for a higher, wider sweep; the pin version W242P2 for smooth desk integration with no visible cable; the side bracket W242BR1 and W242BR2 for smooth wall mounting with no visible cable, an W242BR2 with a longer pole for extended illumination; the floor standing W242F2, ideal for a reading corner, bedside, or ambient accent.

Design: Sam Hecht and Kim Colin

TECHNICAL SPECIFICATIONS	**PASTILLE** BASE W242B2	**PASTILLE** PIN W242P2	**PASTILLE** FLOOR W242F2
Power	7.4 W	7.4 W	7.4 W
Luminous efficiency	Up to 64 lm/W	Up to 64 lm/W	Up to 64 lm/W
Colour temperature	2700 K	2700 K	2700 K
Light control	Integrated dimmer switch	Integrated dimmer switch	Integrated dimmer switch
Physical	Length 201 mm Width 195 mm Height 404 mm	Length 196mm Width 170 mm Height 444 mm	Length 240 mm Width 192 mm Height 1101 mm

TECHNICAL SPECIFICATIONS	**PASTILLE** CLAMP SHORT W242CL1	**PASTILLE** CLAMP LONG W242CL2	**PASTILLE** BRACKET SHORT W242BR1	**PASTILLE** BRACKET LONG W242BR2
Power	7.4 W	7.4 W	7.4 W	7.4 W
Luminous efficiency	Up to 64 lm/W	Up to 64 lm/W	Up to 64 lm/W	Up to 64 lm/W
Colour temperature	2700 K	2700 K	2700 K	2700 K
Light control	Integrated dimmer switch	Integrated dimmer switch	Integrated dimmer switch	Integrated dimmer switch
Physical	Length 192 mm Width 170 mm Height 266 mm	Length 192 mm Width 170 mm Height 481 mm	Length 279 mm Width 170 mm Height 264 mm	Length 279 mm Width 170 mm Height 482 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(s):
4653 (Ver. 2.1) Lighting Equipment

CONTENT DECLARATION PER DECLARED UNIT

The content declaration refers to the reference product.

PRODUCT COMPONENTS	WEIGHT, KG	WEIGHT-% (VERSUS TOTAL WEIGHT)	POST-CONSUMER MATERIAL, WEIGHT-%	BIOGENIC MATERIAL, WEIGHT-% / DECLARED UNIT	BIOGENIC MATERIAL, KG C / DECLARED UNIT
Steel	0.925	54.97	0.00	0.00	0.00
Aluminum	0.497	29.57	42.00	0.00	0.00
Polycarbonate	0.102	6.09	0.00	0.00	0.00
EPDM	0.047	2.82	0.00	0.00	0.00
Epoxy-Resin	0.027	1.60	0.00	0.00	0.00
Aluminum oxide	0.024	1.40	0.00	0.00	0.00
Copper	0.022	1.33	0.00	0.00	0.00
Others (<1%)	0.037	2.22	0.00	0.00	0.00
Total	**1.682**	**100.00**	**12.41**	**0.00**	**0.00**

PACKAGING MATERIALS*	WEIGHT, KG	WEIGHT-% (VERSUS THE PRODUCT)	WEIGHT BIOGENIC CARBON, KG C / DECLARED UNIT
Cardboard	0.825	49.02	0.417
Paper	0.665	39.56	0.344
Plastic	0.066	3.93	0.000
Total	**1.556**	**92.50**	**0.761**

*Disclaimer: The packaging material table includes only product packaging. Transport packaging also included in the LCA.
The products do not contain any REACH and RoHS SVHC substances in amounts greater than 0.1 % (1 000 ppm).

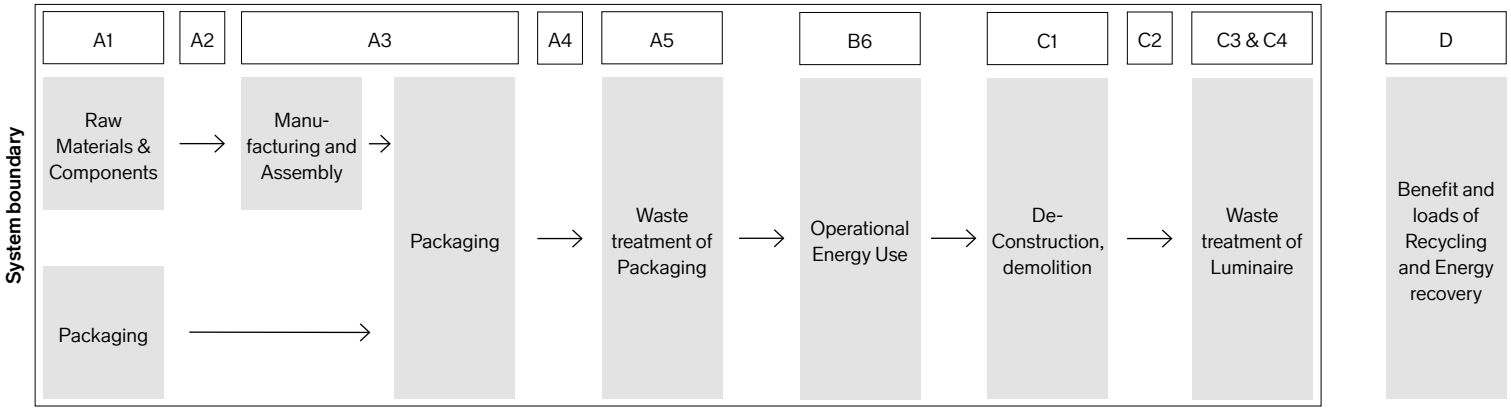
Declared unit
The declared unit is one piece of Pastille Base W242B2, CCT 2700 K. This product has been chosen as the reference due to the highest share of sales. The weight of the product per declared unit is 1.682 kg.

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
10.3 years
Time representativeness
2025- 2026
Database and LCA software used
LCA for Experts 10.9.6.1
System boundaries
Cradle to gate with options, modules C1-C4, module D and with optional modules A4, A5, B6

System diagram



Allocation
Raw materials are assigned directly based on the specific Bill of Materials. Factory-wide shared inputs such as electricity and natural gas are allocated to products using internal sales data. Transport packaging is modelled using average packaging data.

Product stage (A1-A3)
The raw materials and corresponding manufacturing processes were modelled using LCA for Experts. Transportation of raw materials, components, and packaging materials to the production sites is included in the assessment. Average transport distances and appropriate transport modes were applied.
Manufacturing is carried out in Dongguan, China, while final assembly and packaging take place in Belgium from where the products are distributed to customers. Due to varying transport routes, aggregated transportation data was used for the shipment from China to Belgium. It was assumed that 24% of products are transported by air freight and 76% by sea freight.
Electricity consumption associated with all manufacturing processes was modelled using the respective regional electricity mixes. No electricity consumption is considered for the final assembly and packaging operations in Belgium, as these activities are performed manually.
Recycled content is based on supplier-specific data. In accordance with the EN 15804 cut-off approach, post-consumer recycled materials enter the product system burden-free, with only the impacts associated with the recycling processes being considered.

Transport to building (A4)
The transport is calculated from Brussel to the capitals of the countries with expected sales shares >4% (Sweden, Germany, Denmark, United Kingdom, Belgium, Switzerland).

Weighted distance	936 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.
Packaging waste incl. transport packaging:

Material	Weight (kg)
Cardboard	1.046
Paper	0.679
Plastic	0.066
Wood pallet	0.011

Operational energy use (B6)
Electricity consumption during the use stage is modelled based on the technical parameters and reference service life of 10.3 years. The operating hours are based on the average application areas in accordance with EN 15193-1:2017+A1:2021. The products are mainly installed in shops, offices and other commercial premises. An average European Electricity grid mix has been used to calculate B6.

The electricity consumption per product unit is calculated using the formula:
Energy consumption [kWh] = {Pa × 1 kW / 1000 W x operating hours p/a [h] x reference service lifetime [y]}

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

SCENARIO	**PASTILLE** BASE W242B2	**UNIT**
Electricity use (10.3 years)	262.96	kWh
Power	7.4	W
Operating hours (h/y)	3450	hours
Dimmable	Integrated dimmer switch	-
Presence controll	No	-

End-of-life stage (C1-C4)
The product is presumed to be decomposed manually; therefore, no emissions 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	PASTILLE BASE W242B2	UNIT
Collected separately	1.682	kg
Collected with mixed (construction) waste	-	kg
For reuse	-	kg
For recycling	0.841	kg
For energy recovery	0.219	kg
For final disposal	0.622	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. The post-consumer recycled content of components is not included in module D to avoid double-counting. In Module D also the benefits from the product packaging waste are included.

SCENARIO	PASTILLE BASE W242B2	UNIT
Materials for recycling	1.633	kg
Materials for export of secondary fuels	-	kg
Materials for incineration	0.424	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.

The following 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).

Data quality
This LCA study reflects the production for 2025-2026, while overhead electricity consumption is based on 2025 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. 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 (32.2%), Hydro (22.4 %), Photovoltaic (28.8 %), Wind (9.2 %), Nuclear (3.8 %), other RE (3.6 %).

ENVIRONMENTAL IMPACT OF THE ELECTRICITY USED IN CN	
CO_2 eq. [kg/kWh]	0.382

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	ND	ND	ND	ND	ND	x	ND	x	x	x	x	x
Geography	GLO	GLO	CN, BEL	EUR	EUR	-	-	-	-	-	EUR	-	EUR	EUR	EUR	EUR	EUR
Share of primary data	32.95%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	-53% / +65%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acronyms	GLO = Global, CN = China, BEL = Belgium, EUR = Europe																

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
Transport of raw materials to manufacturing site	Collected Data	EPD Owner, Suppliers	2025-2026	Primary data	22.60%
Electricity used in manufacturing	Collected Data	EPD Owner	2025-2026	Primary data	9.94%
Others	Collected Data	EPD Owner	2025-2026	Primary data	0.41%
Total share of primary data of GWP-GHG results for A1-A3					32.95%

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 CO_2 eq.	2.04E+01	3.47E-01	6.01E-01	8.76E+01	0.00E+00	1.31E-02	1.35E-01	1.14E-02	-3.90E+00
GWP – biogenic	kg CO_2 eq.	-3.25E+00	0.00E+00	3.25E+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.	7.31E-03	3.86E-03	1.64E-03	2.60E-01	0.00E+00	5.73E-05	5.57E-05	1.70E-05	-4.80E-03
GWP – total	**kg CO_2 eq.**	**1.71E+01**	**3.51E-01**	**3.85E+00**	**8.78E+01**	**0.00E+00**	**1.32E-02**	**1.35E-01**	**1.15E-02**	**-3.91E+00**
ODP	kg CFC 11 eq.	7.54E-09	1.72E-13	3.22E-12	3.81E-09	0.00E+00	2.75E-15	4.06E-13	6.69E-14	-5.48E-11
AP	mol H+ eq.	1.24E-01	5.05E-04	1.50E-03	2.08E-01	0.00E+00	2.08E-05	1.07E-04	7.32E-05	-2.45E-02
EP – freshwater	kg P eq.	3.63E-04	6.96E-07	1.65E-05	9.19E-05	0.00E+00	3.42E-08	1.50E-07	9.22E-07	-7.55E-05
EP – marine	kg N eq.	2.58E-02	2.05E-04	7.78E-04	5.09E-02	0.00E+00	8.41E-06	3.72E-05	1.77E-05	-3.38E-03
EP – terrestrial	mol N eq.	2.79E-01	2.27E-03	6.34E-03	6.00E-01	0.00E+00	9.09E-05	4.51E-04	1.94E-04	-3.60E-02
POCP	kg NMVOC eq.	7.39E-02	4.80E-04	1.46E-03	1.19E-01	0.00E+00	1.84E-05	9.33E-05	5.45E-05	-1.10E-02
ADP – minerals & metals*	kg Sb eq.	1.78E-04	2.98E-08	4.15E-07	2.17E-05	0.00E+00	9.78E-10	4.42E-09	9.27E-10	-9.92E-05
ADP – fossil*	MJ	2.65E+02	4.45E+00	7.81E+00	1.64E+03	0.00E+00	1.7c01	6.48E-01	1.84E-01	-5.76E+01
WDP*	m^3	5.63E+00	1.22E-03	9.53E-02	1.69E+01	0.00E+00	4.65E-05	3.64E-02	1.36E-03	-6.24E-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 declared unit								
Indicator	**Unit**	**A1 – A3**	**A4**	**A5**	**B6**	**C1**	**C2**	**C3**	**C4**	**D**
GWP – GHG1	kg CO_2 eq.	2.04E+01	3.51E-01	6.03E-01	8.78E+01	0.00E+00	1.32E-02	1.35E-01	1.15E-02	-3.91E+00
PM	disease inc.	1.84E-06	5.04E-09	1.15E-08	1.70E-06	0.00E+00	2.05E-10	1.30E-09	8.42E-10	-2.73E-07
IRP – HE**	kg U235-eq	6.96E-01	4.46E-04	2.73E-02	3.45E+01	0.00E+00	2.32E-05	1.02E-02	2.48E-04	-1.26E-01
ETP – fw*	CTUe	1.46E+02	3.85E+00	2.59E+00	3.83E+02	0.00E+00	1.49E-01	1.49E-01	1.66E-01	-2.24E+01
HTP – c*	CTUh	1.45E-08	6.89E-11	1.10E-10	2.59E-08	0.00E+00	2.97E-12	1.09E-11	3.47E-12	-3.42E-09
HTP – nc*	CTUh	3.87E-07	2.65E-09	9.62E-09	8.10E-07	0.00E+00	1.55E-10	4.65E-10	1.51E-10	-2.07E-08
SQP	dimensionless	2.76E+02	1.29E+00	8.02E+00	6.82E+02	0.00E+00	4.70E-02	1.90E-01	4.19E-02	-2.71E+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.

RESOURCE USE INDICATORS

		Results per declared unit								
Indicator	**Unit**	**A1 – A3**	**A4**	**A5**	**B6**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	1.05E+02	3.49E-01	2.30E+00	1.25E+03	0.00E+00	1.21E-02	3.73E-01	3.23E-02	-2.47E+01
PERM	MJ	2.92E+01	0.00E+00	-2.92E+01	0.00E+00	0.00E+00	0.00E+00	-4.02E-03	0.00E+00	0.00E+00
PERT	MJ	1.35E+02	3.49E-01	-2.69E+01	1.25E+03	0.00E+00	1.21E-02	3.69E-01	3.23E-02	-2.47E+01
PENRE	MJ	2.65E+02	4.45E+00	7.81E+00	1.64E+03	0.00E+00	1.75E-01	9.78E-01	1.84E-01	-5.88E+01
PENRM	MJ	6.23E+00	0.00E+00	-2.77E+00	0.00E+00	0.00E+00	0.00E+00	-3.45E+00	0.00E+00	0.00E+00
PENRT	MJ	2.71E+02	4.45E+00	5.04E+00	1.64E+03	0.00E+00	1.75E-01	-2.48E+00	1.84E-01	-5.88E+01
SM	kg	2.08E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E+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	1.51E-01	1.32E-04	5.32E-03	7.89E-01	0.00E+00	3.52E-06	8.74E-04	3.95E-05	-2.09E-02

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	1.04E-07	2.55E-10	1.21E-07	2.46E-06	0.00E+00	7.37E-12	9.26E-09	4.39E-11	-2.56E-08
Non-hazardous waste disposed	kg	2.01E+00	8.45E-04	5.32E-01	1.42E+00	0.00E+00	3.21E-05	3.52E-02	5.46E-01	-6.32E-01
Radioactive waste disposed	kg	3.45E-03	4.82E-06	1.80E-04	2.26E-01	0.00E+00	1.84E-07	6.52E-05	1.93E-06	-1.20E-03

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	4.27E-01	0.00E+00	8.96E-01	0.00E+00	0.00E+00	0.00E+00	7.37E-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	0.00E+00	0.00E+00	5.20E-01	0.00E+00	0.00E+00	0.00E+00	1.29E-01	0.00E+00	0.00E+00
Exported energy. thermal	MJ	0.00E+00	0.00E+00	9.42E-01	0.00E+00	0.00E+00	0.00E+00	2.99E-01	0.00E+00	0.00E+00

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**	**C2**	**C3**	**C4**	**C2**	**C3**	**C4**
GWP – fossil	kg CO_2 eq.	1.21E-02	1.19E-01	0.00E+00	1.97E-02	6.56E-01	0.00E+00	1.21E-02	0.00E+00	3.09E-02
GWP – biogenic	kg CO_2 eq.	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
GWP – luluc	kg CO_2 eq.	5.30E-05	1.24E-04	0.00E+00	8.62E-05	-3.88E-05	0.00E+00	5.30E-05	0.00E+00	4.59E-05
GWP – total	kg CO_2 eq.	1.22E-02	1.20E-01	0.00E+00	1.98E-02	6.56E-01	0.00E+00	1.22E-02	0.00E+00	3.10E-02
ODP	kg CFC 11 eq.	2.55E-15	1.76E-12	0.00E+00	4.14E-15	-3.57E-12	0.00E+00	2.55E-15	0.00E+00	1.81E-13
AP	mol H+ eq.	1.93E-05	1.53E-04	0.00E+00	3.13E-05	2.94E-04	0.00E+00	1.93E-05	0.00E+00	1.98E-04
EP – freshwater	kg P eq.	3.16E-08	3.52E-07	0.00E+00	5.14E-08	-1.87E-07	0.00E+00	3.16E-08	0.00E+00	2.49E-06
EP – marine	kg N eq.	7.78E-06	4.90E-05	0.00E+00	1.26E-05	1.26E-04	0.00E+00	7.78E-06	0.00E+00	4.77E-05
EP – terrestrial	mol N eq.	8.41E-05	5.75E-04	0.00E+00	1.37E-04	1.59E-03	0.00E+00	8.41E-05	0.00E+00	5.23E-04
POCP	kg NMVOC eq.	1.70E-05	1.21E-04	0.00E+00	2.76E-05	3.25E-04	0.00E+00	1.70E-05	0.00E+00	1.47E-04
ADP – minerals & metals*	kg Sb eq.	9.05E-10	1.50E-08	0.00E+00	1.47E-09	-2.30E-08	0.00E+00	9.05E-10	0.00E+00	2.50E-09
ADP – fossil*	MJ	1.61E-01	8.58E-01	0.00E+00	2.62E-01	1.76E+00	0.00E+00	1.61E-01	0.00E+00	4.97E-01
WDP*	m^3	4.30E-05	2.30E-02	0.00E+00	6.99E-05	2.08E-01	0.00E+00	4.30E-05	0.00E+00	3.68E-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 mandatory and voluntary impact category indicators

		100% RECYCLING			100% INCINERATION			100% LANDFILL		
Indicator	**Unit**	**C2**	**C3**	**C4**	**C2**	**C3**	**C4**	**C2**	**C3**	**C4**
GWP-GHG[1]	kg CO2 eq.	1.22E-02	1.20E-01	0.00E+00	1.98E-02	6.56E-01	0.00E+00	1.22E-02	0.00E+00	3.10E-02
PM	disease inc.	1.90E-10	1.45E-09	0.00E+00	3.09E-10	5.17E-09	0.00E+00	1.90E-10	0.00E+00	2.28E-09
IRP_HE**	kg U235-eq	2.14E-05	1.54E-02	0.00E+00	3.48E-05	1.94E-02	0.00E+00	2.14E-05	0.00E+00	6.71E-04
ETP-fw*	CTUe	1.38E-01	2.32E-01	0.00E+00	2.24E-01	2.89E-01	0.00E+00	1.38E-01	0.00E+00	4.48E-01
HTP-c*	CTUh	2.74E-12	1.64E-11	0.00E+00	4.46E-12	2.59E-11	0.00E+00	2.74E-12	0.00E+00	9.39E-12
HTP-nc*	CTUh	1.44E-10	6.44E-10	0.00E+00	2.33E-10	1.39E-09	0.00E+00	1.44E-10	0.00E+00	4.09E-10
SQP	dimensionless	4.35E-02	3.22E-01	0.00E+00	7.07E-02	2.40E-01	0.00E+00	4.35E-02	0.00E+00	1.13E-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.

Additional LCA results
Resource use indicators

		100% RECYCLING			100% INCINERATION			100% LANDFILL		
Indicator	**Unit**	**C2**	**C3**	**C4**	**C2**	**C3**	**C4**	**C2**	**C3**	**C4**
PERE	MJ	1.12E-02	5.81E-01	0.00E+00	1.82E-02	6.63E-01	0.00E+00	1.12E-02	0.00E+00	8.73E-02
PERM	MJ	0.00E+00	-4.02E-03	0.00E+00	0.00E+00	-4.02E-03	0.00E+00	0.00E+00	-4.02E-03	0.00E+00
PERT	MJ	1.12E-02	5.77E-01	0.00E+00	1.82E-02	6.59E-01	0.00E+00	1.12E-02	-4.02E-03	8.73E-02
PENRE	MJ	1.61E-01	1.83E+00	0.00E+00	2.62E-01	1.76E+00	0.00E+00	1.61E-01	0.00E+00	4.97E-01
PENRM	MJ	0.00E+00	-3.45E+00	0.00E+00	0.00E+00	-3.45E+00	0.00E+00	0.00E+00	-3.45E+00	0.00E+00
PENRT	MJ	1.61E-01	-1.63E+00	0.00E+00	2.62E-01	-1.70E+00	0.00E+00	1.61E-01	-3.45E+00	4.97E-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
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	m3	3.26E-06	7.16E-04	0.00E+00	5.30E-06	4.37E-03	0.00E+00	3.26E-06	0.00E+00	1.07E-04

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

		100% RECYCLING			100% INCINERATION			100% LANDFILL		
Indicator	**Unit**	**C2**	**C3**	**C4**	**C2**	**C3**	**C4**	**C2**	**C3**	**C4**
Hazardous waste disposed	kg	6.81E-12	1.82E-08	0.00E+00	1.11E-11	1.41E-09	0.00E+00	6.81E-12	0.00E+00	1.19E-10
Non-hazardous waste disposed	kg	2.97E-05	3.02E-02	0.00E+00	4.82E-05	1.72E-01	0.00E+00	2.97E-05	0.00E+00	1.47E+00
Raioatctive waste disposed	kg	1.70E-07	1.01E-04	0.00E+00	2.76E-07	1.14E-04	0.00E+00	1.70E-07	0.00E+00	5.21E-06

Output flow indicators

		100% RECYCLING			100% INCINERATION			100% LANDFILL		
Indicator	**Unit**	**C2**	**C3**	**C4**	**C2**	**C3**	**C4**	**C2**	**C3**	**C4**
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	0.00E+00	1.47E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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	0.00E+00	1.09E-01	0.00E+00	0.00E+00	7.06E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy. thermal	MJ	0.00E+00	2.55E-01	0.00E+00	0.00E+00	1.64E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Scaling factors for other variants
The different variants of Pastille are very similar but show some differences in their construction. Those differences have been accounted for in the LCA. The results of the GWP-GHG above can be scaled to the corresponding variants with the following conversion factors:

VARIANT	A1 – A3	A4	A5	B6	C1-C4	D
Pastille Base W242B2 (reference)	1.00	1.00	1.00	1.00	1.00	1.00
Pastille Clamp W242CL1	0.47	0.29	0.23	1.00	0.64	0.41
Pastille Clamp W242CL2	0.56	0.44	0.49	1.00	0.66	0.52
Pastille Pin W242P2	0.54	0.44	0.49	1.00	0.65	0.51
Pastille Clamp W242BR1	0.47	0.28	0.23	1.00	0.63	0.40
Pastille Clamp W242BR2	0.55	0.43	0.48	1.00	0.64	0.52
Pastille Floor W242F2	1.65	1.92	1.57	1.00	1.92	1.78

The maximum scaling factor of +65% A1-A3 is primarily attributed to the weight of the largest product, Pastille Floor W242F2. This directly correlates with the variation in resource use and emissions.

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	CCT	A1-A3	A4	A5	B6	C1-C4	D
Pastille Base W242B2	2700K	2.12	2.12	2.12	2.30	2.12	2.12
Pastille Clamp W242CL1	2700K	2.12	2.12	2.12	2.30	2.12	2.12
Pastille Clamp W242CL2	2700K	2.12	2.12	2.12	2.30	2.12	2.12
Pastille Pin W242P2	2700K	2.12	2.12	2.12	2.30	2.12	2.12
Pastille Clamp W242BR1	2700K	2.12	2.12	2.12	2.30	2.12	2.12
Pastille Clamp W242BR2	2700K	2.12	2.12	2.12	2.30	2.12	2.12
Pastille Floor W242F2	2700K	2.12	2.12	2.12	2.30	2.12	2.12

Information related to the sectorial EPD
This EPD is not sectoral.

Version History
Original Version of the EPD, 2026-09-08

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

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. PASTILLE. XAL GmbH. 2026-09-08

LCA for Experts 10.9.6.1 (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.

Smart EPD Part A Product Category Rules For Building And Construction Products and Services, Standard 1000, version 1.2 @Smart EPD, March 14, 2025