Environmental Product Declaration

Programme:
The International EPD® System
www.environdec.com

Programme operator:
EPD International AB

EPD registration number:	S-P-09590
Publication date:	2023-06-27
Revision date:	2025-09-19
Valid until:	2028-06-26

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

JUST 45 | JUST 55

from XAL GmbH

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

General information

Programme information

Programme: The International EPD® System

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Accountabilities for PCR, LCA and independent, third-party verification

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

Product Category Rules (PCR): PCR 2019:14 v.1.2.4 Construction products, valid until 2024-12-20, UN CPC code(s) – 46539 Other electric lamps and lighting fittings (including lamps and lighting fittings of a kind used for lighting public open spaces or thorough-fares)

PCR review was conducted by: The Technical Committee of the International EPD® System, Chair of the PCR review: Claudia A. Peña, info@environdec.com

Life Cycle Assessment (LCA)
LCA accountability: XAL GmbH, Auer-Welsbach-Gasse 36, 8055 Graz, Austria

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:
Prof. Ing. Vladimír Kočí, Ph.D., MBA
LCA Studio
Šárecká 5, 16000
Prague 6 - Czech Republic
www.lcastudio.cz

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 further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD

XAL GmbH
Auer-Welsbach-Gasse 36
8055 Graz
AUSTRIA

epd@xal.com

Description of the organisation

XAL is an internationally operating manufacturer of high-end luminaires and lighting solutions for shop, office, hotel and residential lighting. The headquarters of our company, which was founded in 1989, is located in Graz with production sites and sales subsidiaries in 15 countries and catering to projects worldwide.

It all begins with a passion for light. For 30 years, XAL has been working with lighting designers, architects and planner to develop custom luminaires of the highest technical standard, which impress with their style and aesthetics. There is always one goal: to push the boundaries of the technically feasible, enabling visionary designs. We can meet this challenge because our employees in our design labs as well as production and sales locations around the world deliver top performance. Being on-site for our customers is essential for mutual success. Thanks to organisational efficiency and high inhouse production depth, we can tailor our response to the needs of our customers and continuously expand our existing product portfolio. Meeting seemingly impossible challenges is our daily motivation and inspiration. From novel concept to luminaire innovation: a path created by crossing borders. SEE THE LIGHT.

Product-related or management system-related certifications

XAL is certified according to several management and CSR standards.

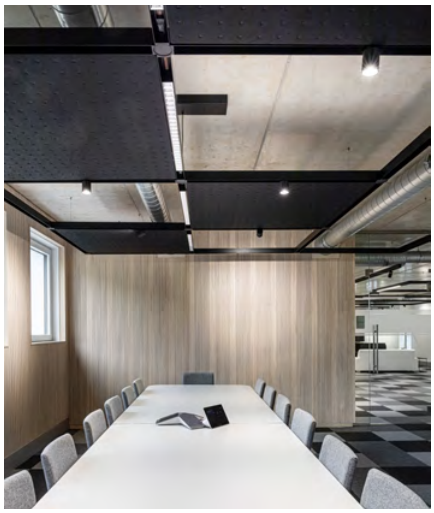
- **ISO 9001** – Quality management systems
- **ISO 14001** – Environmental management systems
- **ISO 45001** – Occupational health and safety management systems
- **Ecovadis** – regular evaluation of our corporate social responsibility based on objective criteria with a focus on the environment, labour and human rights, ethics and responsible procurement.
- **UN Global Compact initiative** – our interactions with each other and our stakeholders, our supply chain management and our resource strategies are guided by the principles of the UN Global compact.

Name and location of production site(s):

The production site is located in Murska Sobota (XAL Svetila d.o.o., Slovenia), some parts are processed at Dongguan (To Be Lighting Co. Ltd.,China) and in Graz (XAL GmbH, Austria).

More information: xal.com

Product information



Product name

JUST 45
JUST 55

Product identification

The JUST insets are held in place by magnetic force along the entire track. No tools are needed for installation. They offer the flexibility to be rotated, slid into various positions, and adjusted at any time. This innovative technology is implemented in both spotlights and suspended luminaires. The installation process remains tool-free, allowing for safe release and adjustment of spots, which can then be securely clicked back into place.

This EPD covers several variations of the JUST series

JUST 45
MOVE IT

JUST 55
MOVE IT

Product information

Product description

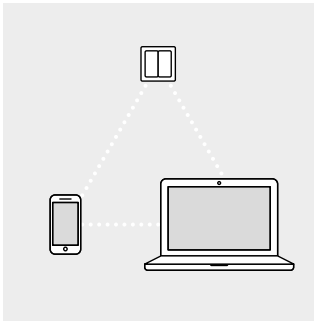
Cylindrical spotlight in aluminium; surface black powder coated; 360° rotatable and 90° tiltable; spotlight can be installed and moved without tools by means of magnetic holders+locking; power supplied via MOVE IT system track profile; hot plug protection; passive cooling of the LEDs through improved heat sink geometry; with COB (Chip on Board) technology for maximum efficiency; no appearance of multiple shadows, DALI single control.

The products covered by this EPD are not only thoroughly tested in our externally accredited in-house facilities but are also third-party tested: CB and ENEC are available.

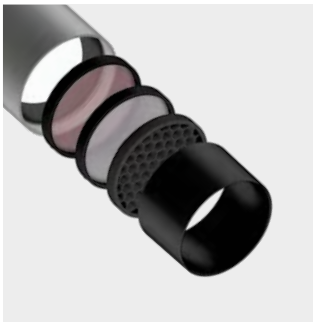
UN CPC code:

- UN CPC Version 2.1
- 46539

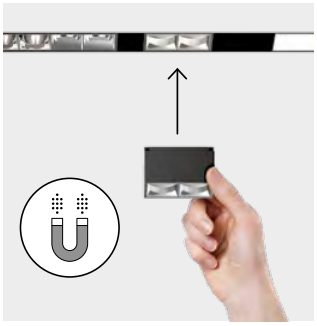
Other electric lamps and lighting fittings (including lamps and lighting fittings of a kind used for lighting public open spaces or thorough fares)



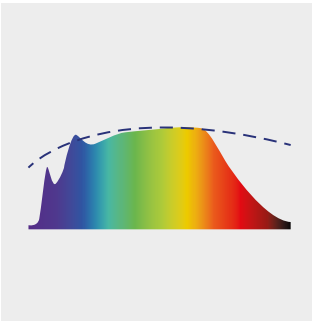
Control Options
Easy control of the luminaires



Optical Accessories
Accessories to adjust the luminaires



Magnetic Mounting
Installation and assembly are quick and easy



Full spectrum LED
Healthy and eye-friendly light

LCA information

Functional unit / declared unit

The declared unit is one piece of the JUST 45 including the LED-Converter. The JUST 45 is used for the MOVE IT TRACK 25/25S and 45. The spot variants of JUST 45 and JUST 55 were not taken into account.

The JUST 45 and JUST 55 use the same material and production technology, but there are differences in weight for the aluminium profile and packaging. Results can therefore be scaled for the JUST 55. The conversion factor for the JUST 55 model is available in the Annex.

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. The conversion factors are available in the Annex.

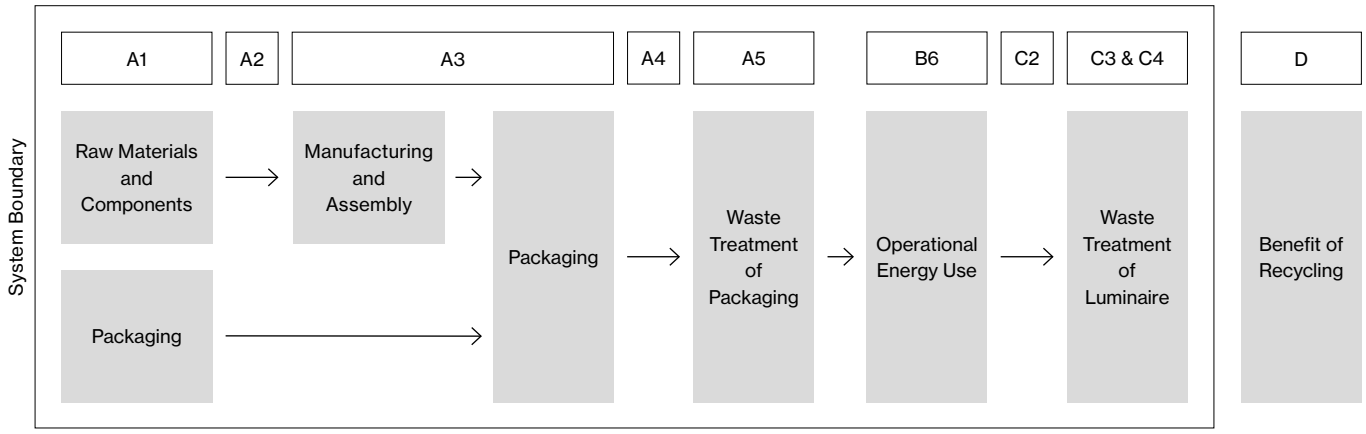
Reference service life:
13.25 years

Time representativeness: 2023

Database(s) and LCA software used:
GaBi 10.7.0.183

Description of system boundaries:
Cradle to gate with options: modules A1-A3, C1–C4, D and optional modules A4, A5 and B6.

System diagram



Product stage (A1-A3)

Raw materials are used for the component production of the JUST 45. Using GaBi, the raw materials and required process steps have been modeled. The components are supplied to Murska Sobota for assembly, while the components for the PCBA are delivered to Graz, where they are assembled. The model simulates the respective electricity mix for the assembly process in Graz. However, the final integration of the PCBA into the luminaire occurs at the facility in Murska Sobota. The model has simulated the electricity mix used in Murska Sobota and Graz, as electricity is required for the assembly. 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. Packaging for the components is accounted using a worst-case approach.

Transport to building (A4)

Transport is modelled for countries where the sales share is more than >4% and modelled to the capital cities (Berlin, Copenhagen, Zurich, London, Vienna, Rome and Stockholm).

Installation into building (A5)

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

Use phase (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 – office (60%), hotel (15%), restaurant (15%), and retail (10%). Geography of the electricity mix is modelled by sales shares and is representative for European countries (91.72% - EU-28) and rest of world countries (8.28%). For the rest of world countries, an electricity mix for China is used following a worst-case approach.

End-of-life stage (C1-C4)

The JUST 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.

LCA information

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.

Cut-off rule

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).

Electricity grid

For the PCBA assembly in Graz, Austria and for the manufacturing in Murska Sobota, Slovenia, the corresponding electricity grid mix as stated on the invoice is used:

Table 1: Murska Sobota electricity grid mix

Electricity sources	%
Coal	46.27%
Natural Gas	19.11%
Nuclear Power	12.47%
Hydro	10.23%
Other fossils (e.g. Waste Incineration)	6.42%
Solar	2.43%
Bioenergy (Biomass, Biofuel)	1.98%
Oil	0.73%
Wind	0.36%

Table 2: Graz electricity grid mix

Electricity sources	%
Hydro	87.3%
Wind	8.4%
Solar	2%
Biomass	1.4%
Other RE	0.9%

Data quality

Based on site specific information, this LCA study reflects the production for 2022. Components are supplied by external vendors, therefore manufacturing processes are modelled using GaBi, with the best fitting representative geographical conditions and applications.

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
Geography	GLO	GLO	AUT, SLO	RER	RER RoW						RER RoW		RER RoW	RER RoW	RER RoW	RER RoW	RER RoW
Specific data used	>90 % GWP-GHG						-	-	-	-	-	-	-	-	-	-	-
Variation – products	<10% GWP-GHG difference between product versions					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%					-	-	-	-	-	-	-	-	-	-	-	-
Acronyms	GLO = Global, RER = Europe, RoW = Rest of the world, AUT = Austria, SLO = Slovenia																

Content information

Content information

Product components	Weight. kg	Weight-% (versus total weight)	Post-consumer material. weight-%	Biogenic material. weight-% / declared unit	Biogenic material. kg C / declared unit
Aluminum	0.195	51.33	20.00	0.00	0.00
Polycarbonate	0.065	17.18	0.00	0.00	0.00
Steel	0.034	8.82	25.00	0.00	0.00
Copper	0.017	4.45	0.00	0.00	0.00
Ferrites	0.011	2.83	0.00	0.00	0.00
Silicone	0.010	2.66	0.00	0.00	0.00
Epoxy resin	0.010	2.52	0.00	0.00	0.00
Glass fibers	0.008	2.06	0.00	0.00	0.00
Nickel	0.004	1.13	0.00	0.00	0.00
Tin	0.003	0.86	0.00	0.00	0.00
Others (<1%)	0.023	6.16	0.00	0.00	0.00
TOTAL	**0.380**	**100**	**12.47**	**0.00**	**0.00**

Packaging materials*	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C / declared unit
Paper	0.022	5.82	0.012
PET	0.0003	0.09	0.000
Corrugated paper	0.367	96.44	0.354
TOTAL	**0.389**	**102.34**	**0.366**

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.

The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).

Mandatory impact category indicators according to EN 15804 + A2 (based on EF 3.1)

		Results per declared unit									
Indicator	**Unit**	**A1 – A3**	**A4**	**A5**	**B1 – B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP – fossil	kg CO_2 eq.	9.21E+00	1.45E-01	3.44E-02	0.00E+00	1.60E+02	0.00E+00	0.00E+00	8.82E-03	-5.34E-01	1.20E-03	-9.77E-01
GWP – biogenic	kg CO_2 eq.	-9.31E-01	-3.62E-01	5.84E-01	0.00E+00	1.38E+00	0.00E+00	0.00E+00	-1.23E-04	-1.39E-03	-1.38E-05	-4.28E-01
GWP – luluc	kg CO_2 eq.	3.72E-03	5.63E-04	1.22E-04	0.00E+00	3.26E-02	0.00E+00	0.00E+00	8.09E-05	9.07E-05	1.18E-06	-2.49E-04
GWP – total	**kg CO_2 eq.**	**8.29E+00**	**-2.17E-01**	**6.19E-01**	**0.00E+00**	**1.61E+02**	**0.00E+00**	**0.00E+00**	**8.78E-03**	**-5.36E-01**	**1.19E-03**	**-1.41E+00**
ODP	kg CFC 11 eq.	2.93E-10	1.41E-14	3.68E-14	0.00E+00	2.84E-09	0.00E+00	0.00E+00	7.65E-16	-4.15E-13	1.92E-15	-1.02E-12
AP	mol H+ eq.	5.55E-02	6.63E-04	1.01E-04	0.00E+00	5.18E-01	0.00E+00	0.00E+00	1.25E-05	7.62E-04	3.73E-06	-2.46E-03
EP – freshwater	kg P eq.	9.12E-05	2.78E-07	1.02E-06	0.00E+00	5.69E-04	0.00E+00	0.00E+00	3.19E-08	-1.70E-07	1.05E-09	-1.36E-07
EP – marine	kg N eq.	8.81E-03	2.81E-04	4.85E-05	0.00E+00	9.35E-02	0.00E+00	0.00E+00	4.61E-06	-3.80E-04	9.37E-07	-3.56E-04
EP – terrestrial	mol N eq.	9.47E-02	2.47E-03	4.29E-04	0.00E+00	9.90E-01	0.00E+00	0.00E+00	5.47E-05	-4.07E-03	1.03E-05	-4.07E-03
POCP	kg NMVOC eq.	2.61E-02	1.17E-03	1.51E-04	0.00E+00	2.61E-01	0.00E+00	0.00E+00	1.10E-05	-9.56E-04	2.93E-06	-1.00E-03
ADP – minerals & metals*	kg Sb eq.	3.65E-04	2.99E-08	1.24E-09	0.00E+00	2.80E-05	0.00E+00	0.00E+00	5.64E-10	5.10E-05	3.18E-11	-8.08E-08
ADP – fossil*	MJ	1.08E+02	2.25E+00	3.60E-01	0.00E+00	3.07E+03	0.00E+00	0.00E+00	1.19E-01	-1.02E+01	1.74E-02	-1.35E+01
WDP*	m^3	2.26E+00	3.86E-02	1.04E-02	0.00E+00	3.44E+01	0.00E+00	0.00E+00	1.01E-04	-2.91E-03	-1.58E-05	-3.41E-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.

Additional mandatory and voluntary impact category indicators

		Results per declared unit									
Indicator	**Unit**	**A1 – A3**	**A4**	**A5**	**B1 – B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP – GHG[1]	kg CO_2 eq.	7.35E+00	-5.79E-01	3.50E-02	0.00E+00	1.60E+02	0.00E+00	0.00E+00	8.66E-03	-5.37E-01	1.18E-03	-1.84E+00
PM	disease inc.	9.25E-07	8.02E-09	1.14E-09	0.00E+00	5.03E-06	0.00E+00	0.00E+00	1.01E-10	-6.54E-09	4.02E-11	-2.29E-08
IRP – HE**	kg U235-eq	2.75E-01	2.58E-04	8.02E-04	0.00E+00	4.10E+01	0.00E+00	0.00E+00	2.22E-05	-1.87E-01	2.99E-05	-1.86E-01
ETP – fw*	CTUe	5.63E+01	7.08E-01	2.60E-01	0.00E+00	1.18E+03	0.00E+00	0.00E+00	8.29E-02	-3.46E+00	4.94E-03	-3.60E+00
HTP – c*	CTUh	2.99E-08	1.05E-10	9.98E-12	0.00E+00	5.47E-08	0.00E+00	0.00E+00	1.69E-12	-3.08E-10	6.12E-13	-3.85E-10
HTP – nc*	CTUh	1.53E-07	6.33E-09	8.12E-10	0.00E+00	1.17E-06	0.00E+00	0.00E+00	8.95E-11	-1.42E-10	6.09E-11	-8.20E-09
SQP	dimension-less	5.12E+01	3.50E-01	9.37E-02	0.00E+00	1.29E+03	0.00E+00	0.00E+00	4.96E-02	2.25E-01	1.62E-03	6.82E+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**	**B1 – B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	3.29E+01	1.11E+00	3.77E-02	0.00E+00	1.98E+03	0.00E+00	0.00E+00	8.41E-03	-3.39E+00	1.56E-03	4.88E+00
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	3.29E+01	1.11E+00	3.77E-02	0.00E+00	1.98E+03	0.00E+00	0.00E+00	8.41E-03	-3.39E+00	1.56E-03	4.88E+00
PENRE	MJ	1.09E+02	2.25E+00	3.61E-01	0.00E+00	3.07E+03	0.00E+00	0.00E+00	1.19E-01	-1.02E+01	1.74E-02	-1.35E+01
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
PENRT	MJ	1.09E+02	2.25E+00	3.61E-01	0.00E+00	3.07E+03	0.00E+00	0.00E+00	1.19E-01	-1.02E+01	1.74E-02	-1.35E+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	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
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	6.42E-02	8.24E-04	2.62E-04	0.00E+00	1.05E+00	0.00E+00	0.00E+00	9.27E-06	-6.44E-03	1.96E-07	-9.07E-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**	**B1 – B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	8.99E-07	4.40E-10	5.78E-11	0.00E+00	-2.75E-07	0.00E+00	0.00E+00	4.41E-13	2.74E-09	1.43E-12	-2.55E-08
Non-hazardous waste disposed	kg	1.04E+00	7.38E-03	9.17E-02	0.00E+00	2.63E+00	0.00E+00	0.00E+00	1.72E-05	5.80E-02	2.49E-02	-1.85E-01
Radioactive waste disposed	kg	2.50E-03	1.95E-06	5.09E-06	0.00E+00	4.42E-01	0.00E+00	0.00E+00	1.54E-07	-8.38E-04	2.02E-07	-8.59E-04

Output flow indicators

		Results per declared unit										
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	5.22E-02	0.00E+00	4.78E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.99E-02	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	5.30E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.52E-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

Reference service life (per application)

	Office	Hospital	Hotel	Restaurant	Retail
RSL, years	60	0	15	15	10

Use phase (B6)

Scenario	JUST 45	Unit
Electricity use (14 years)	425.95	kWh
Active power	9.73	W
Passive power	0.2	W
Total active time	41406.25	hours
Total passive time	73663.75	hours
Dimmable	Non-dimmable, DALI-2 control	
DALI-2 control	-	
Presence control	No	-

End-of-Life (C1-C4)

Scenario (product)	JUST 45	Unit
Collected separately	0.380	kg
Collected with mixed (construction) waste	0	kg
For reuse	0	kg
For recycling	0.166	kg
For energy recovery	0.059	kg
For final disposal	0.155	kg

Module D

Scenario (contributing materials, incl. packaging)	JUST 45	Unit
Materials for recycling	4.03E-01	Unit
Materials for export of secondary fuels	0	kg
Materials for incineration	1.05E-01	kg
Materials for landfilling	0	kg

Additional environmental information

Annex

The conversion factors can be used for the JUST 55 and for converting the results to 1000 lumens during a reference life of 35000 hours. The JUST 55 uses the same materials and components. For this reason, the increase of environmental impact can be scaled using the given conversion factors.

Results for 1 sales unit

JUST	A1-A3: Production	A4: Transport	A5: Installation	B6: Use stage	C1-C4: End of life	D: Resource - recovery
45	1.00	1.00	1.00	1.00	1.00	1.00
55	1.32	0.93	0.97	2.08	1.05	1.61

Results for 1,000 lumens during a reference life of 35,000 hours produced by JUST luminaire

JUST	A1-A3: Production	A4: Transport	A5: Installation	B6: Use stage	C1-C4: End of life	D: Resource - recovery
45	1.47	1.47	1.47	1.24	1.47	1.47
55	0.66	0.66	0.66	0.56	0.66	0.66

References

General Programme Instructions of the International EPD® System. Version 4.0.

Product category rules (PCR) 2019:14 Construction products version 1.2.5, 2022, The EPD International, 2022

EN 15804:2012+A2:2029 Sustainability of construction works – Environmental product declarations - Core rules for the product category of construction products

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

ISO 14040 Environmental management – Life cycle assessment – Principles and framework

ISO 14044 Environmental management – Life cycle assessment – Requirements and guidelines

GaBi 10.7.0.183

Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE)

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

Photos

p. 2 **Restaurant De Koolputten**
Waasmunster, BE – by GMF Architecten
photography by Kris Dekeijser

p. 4 **Restaurant De Koolputten**
Waasmunster, BE – by GMF Architecten
photography by Kris Dekeijser

has-to-be gmbH
Radstad, AT –
photography by Catherine Roider Fotografie

Das Morgen
Vitznau, CH –
photography by Fotodesign Klaus Lorke