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:

OPAL JUT-OUT LIGHT INSET for **MOVE IT 45**

from XAL GmbH

Programme
The International EPD® System
www.environdec.com

Programme operator
EPD International AB

EPD registration number	EPD-IES-0015539:001
Publication date	2024-08-14
Valid until	2029-08-13

Included products
OPAL JUT-OUT light inset for MOVE IT 45, 605 mm (= representative product)
OPAL JUT-OUT light inset for MOVE IT 45, 1205 mm

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

General information

Programme information

Programme	The International EPD® System
Address	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
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CEN standard EN 15804 serves as the Core Product Category Rules (PCR)

Product category rules (PCR)
Product Category Rules (PCR): PCR 2019:14 Construction products version 1.3.4, 2024-04-30.
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

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

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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

Owner of the EPD

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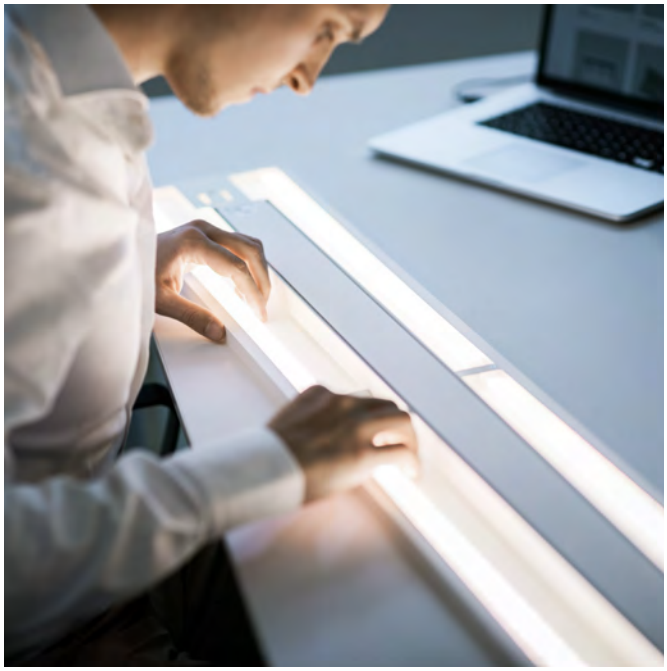


Description of the organisation

XAL is an internationally operating manufacturer of high-end luminaires and lighting solutions for shop, office, hotel and residential lighting. For 30 years, XAL has been working with lighting designers, architects and planners to develop custom luminaires of the highest technical standard, with a focus on style and aesthetics. While XAL mainly targets B2B costumers, we also provide our standard portfolio to B2C costumers.

With its headquarters in Graz, Austria, the XAL Group currently employs 1300 people worldwide and has 30 international subsidiaries. We are continuously working on further improving our products – whether in terms of durability, efficiency, the carbon footprint, or also with regard to the replaceability and reusability of components and materials.

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 Graz (XAL GmbH, Austria) and in Murska Sobota (XAL Svetila d.o.o., Slovenia).

More information
xal.com

Product information

Product name

OPAL JUT-OUT LIGHT INSET for **MOVE IT 45 (605mm)**

Product identification

The linear light insets of the MOVE IT 45 product family can be used in many different variations. Available with different optics, a wide range of beam characteristics can be generated. The micro-faceted reflector technology ensures precise light distribution and minimum glare that is unequalled. The downlight optics for generating round and angular light projections are available with several beam angles.

Product description

The linear light inset can be installed flexibly and without tools by means of magnetic holders + locking; sound absorbing accessories available. In the track system, spotlights, newly developed linear office inserts, and decorative luminaires can be combined. These are magnetically mounted and can be adjusted to spatial changes without the need for tools and flexibly.

Linear light fixture made of aluminum; light fixture is tool-free and movable via magnetic holder + locking mechanism; surface anodized; flush in the profile system; absolutely homogeneous illuminated, satin-finished PMMA cover; with CSP (Chip-Scale-Packaging) technology for highest efficiency; energy-efficient high-power LEDs with very good color rendering; Hot Plug protection. This product variant is available with 3000 K, 74 lm/W as well as 4000 K, 82 lm/W with respective lengths of 605 mm and 1205 mm. The 1205 variants use the same material and production technology. The 605 and 1205 variants only differ in the weight for the aluminium profile, plastic covers and the amount of reflectors and magnets.

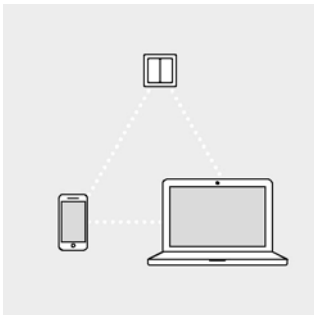
In addition, there is also the tunable white variant, 84 lm/W, 605 mm as well as tunable white, 77 lm/W, 1205 mm.

Article number	Type
050-3212538J	3000 K, 78 lm/W, 605 mm
050-3212638J	4000 K, 86 lm/W, 605 mm
050-3212D38J	tunable white, 88 lm/W, 605 mm
050-3214538J	3000 K, 78 lm/W, 1.205 mm
050-3214638J	4000 K, 86 lm/W, 1.205 mm
050-3214D38J	tunable white, 88 lm/W, 1.205 mm

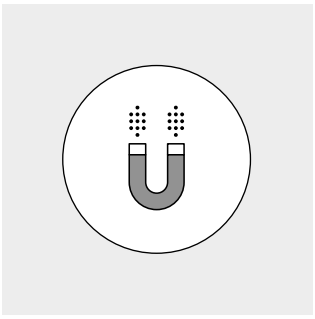
Other INSET 45 Variants

OPAL HIGH PERFORMANCE 605 / 1205 mm
MICROPRISMATIC 605 / 1205 mm

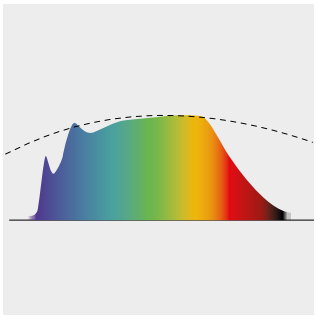
Product features



Control Options
Easy control of the luminaires



Magnetic Mounting
Installation and assembly are quick and easy



Full spectrum LED
Healthy and eye-friendly light

CB

The products covered by this EPD are thoroughly tested in our externally accredited in-house facilities. For the SASSO 60 CB is available.

UN CPC code
- 46539 (Ver. 2.1)

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

LCA information

Declared unit

The declared unit is one piece of the MOVE IT 45 LIGHT INSET (JUT-OUT) including the LED-Converter. The weight of the Product per declared unit is 0,809 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. The conversion factors are available under „Additional environmental information“.

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

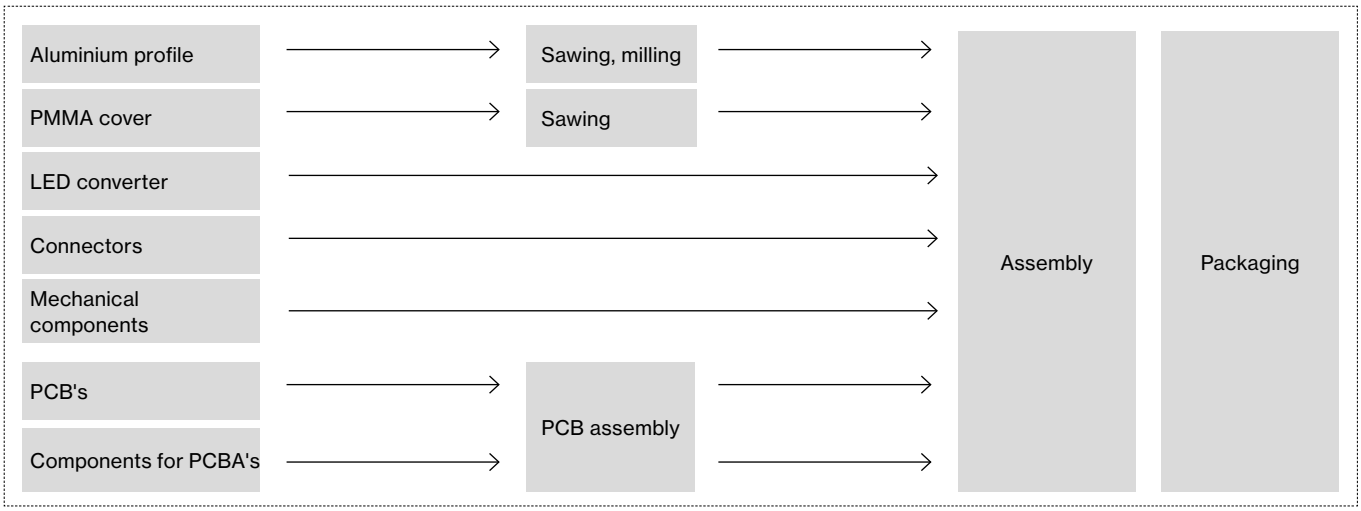
Reference service life:
13.25 years

Time representativeness:
2023

Database(s) and LCA software used:
LCA for Experts 10.7.1.28

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 found in the components used for the luminaire production. The raw materials and the necessary process steps have been modelled using LCA for Experts. The assembly of the LED engine and the final assembly of the luminaire is done in Murska Sobota, Slovenia. The corresponding electricity mix has been used for all manufacturing steps. 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 has been accounted for using a worst-case approach. The ESD-packaging is reused one time within the company, therefore only ½ of the weight is taken into account for the production and the recycling. Since connectors typically consist of various material compositions, the EPDs of XAL GmbH assume plastic/metal connectors with a ratio of 50/50.

Transport to building (A4)

The transport is calculated to the capitals of the countries with sales shares >4% (Berlin, Vienna, Zurich, Rome, Paris, Stockholm).

Weighted distance	780,20 km
Truck used	Class EURO 6, 26-28 t
Fuel type	Diesel (0.00287 l/100 km)

Installation into building (A5)

No emissions occur during the installation. This module includes the waste treatment of the packaging. For the transport-packaging, the euro pallet is reused 36 times, therefore only 1/36 of the weight is taken into account for the production and the end of life of the pallet.

Material	Weight (kg)
Cardboard	0,14659
Polyethylene film	0,00402
Wooden pallet	0,00251

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 – office (20%), hospital (5%), hotel (40%), restaurant (10%), and retail (25%) with an average lifetime of 12.5 years. Geography of the electricity mix is modelled by sales shares and is representative for European countries (88% - EU-

28) and rest of world countries (12%). 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 are presented in the additional information chapter.

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.

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 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 2023. 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 Graz, Austria, the corresponding electricity grid mix as stated on the invoice is used: Hydro (87.3%), Wind (8.4%), Solar (2%), Biomass (1.4%), other RE (0.9%).

For Murska Sobota, Slovenia, the electricity used is 100% from Hydro Power.

Environmental impact of the electricity used in AUT and SLO	
CO_2 emissions [g/kWh]	0,00
Radioactive waste [mg/kWh]	0,00

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 stagered
	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	AUT, SLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO	GLO
Specific data used	90%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	+51%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	N/A			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acronyms	GLO = Global, 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	4,34E-01	53,60%	0,00 %	0,00E+00	0,00E+00
Polymethyl-methacrylate	1,71E-01	21,10%	0,00 %	0,00E+00	0,00E+00
Neodymium	3,88E-02	4,79%	0,00 %	0,00E+00	0,00E+00
Polycarbonate	2,93E-02	3,62%	0,00 %	0,00E+00	0,00E+00
Polyethylen-eterephthalate	2,09E-02	2,58%	0,00 %	0,00E+00	0,00E+00
Epoxy resin	1,84E-02	2,27%	0,00 %	0,00E+00	0,00E+00
Steel	1,61E-02	1,99%	0,00 %	0,00E+00	0,00E+00
Copper	1,32E-02	1,63%	0,00 %	0,00E+00	0,00E+00
Ferrites	1,12E-02	1,39%	0,00 %	0,00E+00	0,00E+00
TOTAL	**8,08E-01**	**99,79 %**	**0,00 %**	**0,06 %**	**0,00E+00**

Packaging materials	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C / declared unit
Paper	1,09E-02	1,48 %	6,00E-03
Polyethylenterephtahalat (PET)	3,40E-03	0,46 %	-
Cardboard	1,95E-01	26,46 %	1,88E-01
TOTAL	**2,09E-01**	**28,40 %**	**1,94E-01**

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

Results of the environmental performance indicators

Mandatory impact category indicators according to EN 15804

		Results per OPAL JUT-OUT Inset (605mm)										
Indicator	**Unit**	**A1 – A3**	**A4**	**A5**	**B1 – B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP – fossil	kg CO_2 eq.	1,94E+01	1,01E-01	1,66E-02	0,00E+00	2,19E+02	0,00E+00	0,00E+00	1,48E-02	6,31E-01	6,82E-03	-5,36E+00
GWP – biogenic	kg CO_2 eq.	-8,97E-01	0,00E+00	8,97E-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
GWP – luluc	kg CO_2 eq.	8,70E-03	9,32E-04	7,17E-05	0,00E+00	3,35E-02	0,00E+00	0,00E+00	1,37E-04	1,09E-05	9,33E-06	-7,61E-04
GWP – total	**kg CO_2 eq.**	**1,85E+01**	**1,01E-01**	**9,14E-01**	**0,00E+00**	**2,19E+02**	**0,00E+00**	**0,00E+00**	**1,48E-02**	**6,31E-01**	**6,82E-03**	**-5,36E+00**
ODP	kg CFC 11 eq.	1,81E-10	8,82E-15	2,03E-14	0,00E+00	3,78E-09	0,00E+00	0,00E+00	1,30E-15	2,72E-13	1,33E-14	-5,15E-12
AP	mol H+ eq.	9,65E-02	1,44E-04	4,90E-05	0,00E+00	4,94E-01	0,00E+00	0,00E+00	2,13E-05	1,26E-04	3,31E-05	-2,08E-02
EP – freshwater	kg P eq.	1,22E-04	3,67E-07	4,91E-07	0,00E+00	7,55E-04	0,00E+00	0,00E+00	5,41E-08	6,37E-08	8,46E-09	-1,64E-06
EP – marine	kg N eq.	1,55E-02	5,31E-05	2,26E-05	0,00E+00	1,17E-01	0,00E+00	0,00E+00	7,83E-06	3,20E-05	8,40E-06	-3,14E-03
EP – terrestrial	mol N eq.	1,67E-01	6,30E-04	2,03E-04	0,00E+00	1,22E+00	0,00E+00	0,00E+00	9,29E-05	5,82E-04	9,23E-05	-3,44E-02
POCP	kg NMVOC eq.	4,64E-02	1,26E-04	6,97E-05	0,00E+00	3,15E-01	0,00E+00	0,00E+00	1,86E-05	8,70E-05	2,58E-05	-9,33E-03
ADP – minerals & metals*	kg Sb eq.	1,02E-03	6,54E-09	6,96E-10	0,00E+00	3,18E-05	0,00E+00	0,00E+00	9,64E-10	5,07E-09	4,03E-10	-1,07E-04
ADP – fossil*	MJ	2,65E+02	1,37E+00	1,85E-01	0,00E+00	4,41E+03	0,00E+00	0,00E+00	2,02E-01	3,60E-01	9,72E-02	-7,32E+01
WDP*	m^3	3,77E+00	1,16E-03	8,12E-03	0,00E+00	5,05E+01	0,00E+00	0,00E+00	1,71E-04	6,23E-02	2,58E-04	-3,36E-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.

Additional mandatory and voluntary impact category indicators

		Results per OPAL JUT-OUT Inset (605mm)										
Indicator	**Unit**	**A1 – A3**	**A4**	**A5**	**B1 – B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP – GHG[1]	kg CO_2 eq.	1,94E+01	1,01E-01	1,66E-02	0,00E+00	2,19E+02	0,00E+00	0,00E+00	1,48E-02	6,31E-01	6,82E-03	-5,36E+00
PM	disease inc.	1,25E-06	1,16E-09	3,77E-10	0,00E+00	4,51E-06	0,00E+00	0,00E+00	1,71E-10	1,41E-09	3,87E-10	-2,09E-07
IRP – HE**	kg U235-eq	1,63E+00	2,56E-04	4,41E-04	0,00E+00	1,12E+02	0,00E+00	0,00E+00	3,77E-05	3,05E-03	1,49E-04	-1,17E+00
ETP – fw*	CTUe	9,34E+01	9,64E-01	1,23E-01	0,00E+00	1,20E+03	0,00E+00	0,00E+00	1,42E-01	1,34E-01	3,86E-02	-1,74E+01
HTP – c*	CTUh	7,85E-09	1,94E-11	4,54E-12	0,00E+00	6,58E-08	0,00E+00	0,00E+00	2,86E-12	1,14E-11	5,30E-12	-2,16E-09
HTP – nc*	CTUh	2,52E-07	8,58E-10	3,70E-10	0,00E+00	1,05E-06	0,00E+00	0,00E+00	1,26E-10	8,27E-10	5,41E-10	-4,70E-08
SQP	dimension-less	1,42E+02	5,71E-01	5,48E-02	0,00E+00	1,68E+03	0,00E+00	0,00E+00	8,42E-02	1,17E-01	1,34E-02	7,17E+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 OPAL JUT-OUT Inset (605mm)										
Indicator	**Unit**	**A1 – A3**	**A4**	**A5**	**B1 – B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	8,54E+01	9,69E-02	2,07E-02	0,00E+00	2,57E+03	0,00E+00	0,00E+00	1,43E-02	1,42E-01	1,10E-02	-1,36E+01
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	8,54E+01	9,69E-02	2,07E-02	0,00E+00	2,57E+03	0,00E+00	0,00E+00	1,43E-02	1,42E-01	1,10E-02	-1,36E+01
PENRE	MJ	2,65E+02	1,37E+00	1,86E-01	0,00E+00	4,41E+03	0,00E+00	0,00E+00	2,02E-01	3,60E-01	9,73E-02	-7,33E+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	2,65E+02	1,37E+00	1,86E-01	0,00E+00	4,41E+03	0,00E+00	0,00E+00	2,02E-01	3,60E-01	9,73E-02	-7,33E+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	1,68E-01	1,07E-04	2,00E-04	0,00E+00	2,17E+00	0,00E+00	0,00E+00	1,57E-05	1,51E-03	1,02E-05	-4,87E-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 OPAL JUT-OUT Inset (605mm)										
Indicator	**Unit**	**A1 – A3**	**A4**	**A5**	**B1 – B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	2,57E-06	5,08E-12	5,59E-12	0,00E+00	-3,39E-07	0,00E+00	0,00E+00	7,48E-13	1,66E-11	6,87E-12	-2,39E-08
Non-hazardous waste disposed	kg	2,26E+00	1,98E-04	4,44E-02	0,00E+00	3,18E+00	0,00E+00	0,00E+00	2,92E-05	6,51E-02	2,77E-01	-1,16E+00
Radioactive waste disposed	kg	1,05E-02	1,77E-06	2,80E-06	0,00E+00	6,75E-01	0,00E+00	0,00E+00	2,62E-07	2,26E-05	1,11E-06	-5,31E-03

Output flow indicators

		Results per OPAL JUT-OUT Inset (605mm)										
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	1,59E-01	0,00E+00	2,44E-03	1,59E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,68E-01
Materials for energy recovery	kg	0,00E+00	0,00E+00	9,77E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,40E-01	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
60	0	15	15	10

Use phase (B6)

Scenario	JUT-OUT	Unit
Electricity use (13.25 years)	636,3	kWh
Active power	14,80	W
Passive power	0,20	w
Total active time	41406,25	hours
Total passive time	74663,75	hours
Dimmable	non-dimmable, DALI-2 control	-
Presence control	No	-

End-of-Life (C1 – C4)

Scenario	JUT-OUT	Unit
Collected separately	0,810	kg
Collected with mixed (construction) waste	-	kg
For reuse	-	kg
For recycling	0,228	kg
For energy recovery	0,240	kg
For final disposal	0,342	kg

Module D

Scenario	JUT-OUT	Unit
Materials for recycling	6,361E-01	kg
Materials for export of secondary fuels	0	kg
Materials for incineration	2,55E-01	kg
Materials for landfilling	2,71E-01	kg

Results for 1,000 lumens during a reference life of 35,000 hours produced by 1 OPAL HP luminaire
A conversion factor can be used for converting the results to 1000 lumens during a reference life of 35000 hours.

	A1 – A3: Production	A4: Transport	A5: Installation	B6: Use stage	C1 – C4: End of life	D: Resource - recovery
605	0,87	0,87	0,87	0,73	0,87	0,87
1205	0,43	0,43	0,43	0,37	0,43	0,43

Biogenic carbon content information

Biogenic carbon content	Quantity	Unit
Biogenic carbon content in the product	0,00E+00	kg C
Biogenic carbon content in the packaging	2,45E-01	kg C

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg CO_2

Annex

The JUT-OUT 605 mm and the 1205 mm Insets for MOVE IT 45 belong to an environmental homogenous family and fulfill the requirements established by the PEP-PCR-ed4-EN-2021 09 06. The 1205mm variants use the same material and production technology, but there are differences in weight for the aluminum profile and plastic covers, the amount of reflectors and magnets. These differences have been incorporated in the model and therefore the difference in the environmental impact can be scaled based on the JUT-OUT 605mm reference Product using the given conversion factors:

Reference Product

	OPAL HP 605	Unit
Power	14,80	W
Lumen	74,00	lm/W
Structure weight	0,52	kg
Weight of light source	0,04	kg
Weight of product excl. packaging	0,74	kg
Weight of packaging	0,37	kg
Weight of product incl. packaging	1,11	kg

Conversion Factors

Scenario	A1 – A3	A4	A5	B6	C1 – C4	D
605	1	1	1	1	1	1
1205	1,52	1,51	1,30	2,00	1,62	1,52

Information about the Product Family

	Power	Lumen	Structure weight	Weight of light source	Weight of packaging	Weight of product excl. packaging	Weight of product incl. packaging
	W	lm/W	kg	kg	kg	kg	kg
OPAL 605	14,80	74	0,521623	0,043	0,37	0,74	1,11
OPAL 1205	29,60	74	0,99896	0,058	0,48	1,19	1,68
JUT-OUT 605	14,80	78	0,594743	0,043	0,37	0,81	1,18
JUT-OUT 1205	29,60	78	1,12496	0,058	0,48	1,35	1,84
MICRO 605	25,40	59	0,601223	0,056	0,37	0,83	1,20
MICRO 1205	51,00	59	1,19896	0,0705164	0,48	1,38	1,87

References

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