

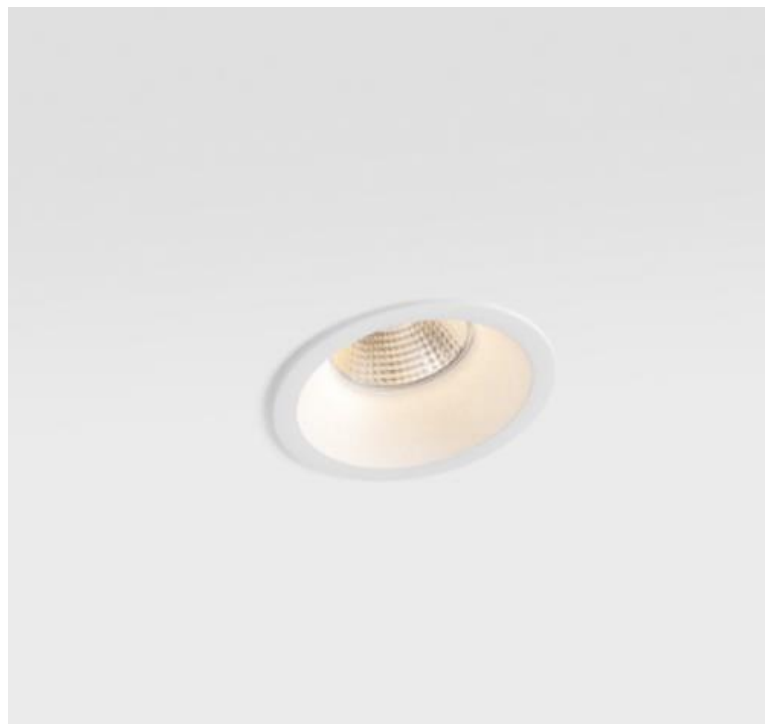
ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14021 / ISO 21930

Smart Lotis Recessed 82 1x IP55

All finishes

Modular Lighting Instruments



EPD HUB

Publishing date 2025-04-04

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Modular Lighting Instruments
Address	Armoedestraat 71 - 8800 Roeselare - BELGIUM
Contact details	sustainability@supermodular.com
Website	www.supermodular.com

EPD STANDARDS, SCOPE AND VERIFICATION

Reference standard	EN 15804+A2:2019 and ISO 14021
Sector	Electrical product
Category of EPD	Self-declared EPD
Scope of the EPD	Cradle to gate with options, A4-B7, and modules C1-C4, D
EPD author	Sustainability Signify
EPD verification	Independent verification of this EPD and data, according to ISO 14021: ☒ Internal certification ☐ External verification

The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of lighting products may not be comparable if they do not comply with EN 15804 and if they are not compared in a lighting context.

PRODUCT

Product name	Smart Lotis Recessed 82 1x IP55
Additional labels	All finishes
Product reference	915005010601 (12442309)
Place of production	BELGIUM
Period for data	2024
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	Not applicable

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 unit
Declared unit mass	0.175 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	4.40E+00
GWP-total, A1-A3 (kgCO ₂ e)	4.28E+00
Secondary material, inputs (%)	12
Secondary material, outputs (%)	66.3
Total energy use, A1-A3 (kWh)	17.6
Net fresh water use, A1-A3 (m ³ e)	0.04

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Belgian architectural lighting since 1980. Creating beautifully crafted products that break the boundaries of technical limitations. Our ambition since the start. Over the years, we have built the reputation of being innovators and pioneers in the architectural lighting world. Today, staying true to our core values, we continue offering a full portfolio to challenge your thinking.

For more information, please visit: www.supermodular.com.

PRODUCT DESCRIPTION

Linear lighting with just the right versatility to shine in any setting. Straw's light shines power, visual comfort, and a surprising twist. All wrapped in a sleek tubular design. Straw's modular, click-in system invites you to endless configurations and appealing customization.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	83.5	EU , NAM , APAC
Minerals	0	Not applicable
Fossil materials	16.5	EU , APAC , NAM
Bio-based materials	0	Not applicable

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0.03

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 Unit
Mass per declared unit	0.175 kg
Functional unit	550 Lumens over 50000 hours
Reference service life	50000 hours

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0.1 % (1000 ppm).

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage								End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7		C1	C2	C3	C4	D		
x	x	x	x	x	MNR	MNR	MNR	MNR	MNR	x	MNR		MNR	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use		Deconstr./demol.	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not relevant = MNR.

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, electricity, and waste formed in the production processes at Modular's manufacturing facilities are included in this stage. The product is made of metals, plastics, and electronic components. All components are transported to Modular's production facility, where the main manufacturing processes primarily are associated with assembly. The finished product is packaged with polyethylene, cardboard, and/or paper as packaging material before being sent to customers. Manufacturing loss, ancillaries and wastes are calculated according to the data that each manufacturing site is sharing with Modular. The total annual amount of waste in kg is allocated to the total annual production in kg at the specific manufacturing site responsible for the production of the studied luminaire. Thus, it is possible to allocate it according to the weight of the product analysed in this study. Some of the waste are due to ancillary materials used during manufacturing while the rest is due to material losses.

TRANSPORT AND INSTALLATION (A4-A5)

Transport distances were calculated on the base of the supplier location and manufacturing location and then made a cumulative group choosing the conservative scenario. Environmental impacts from installation include waste packaging materials (A5). The impacts of energy consumption and the used ancillary materials during installation are considered negligible.

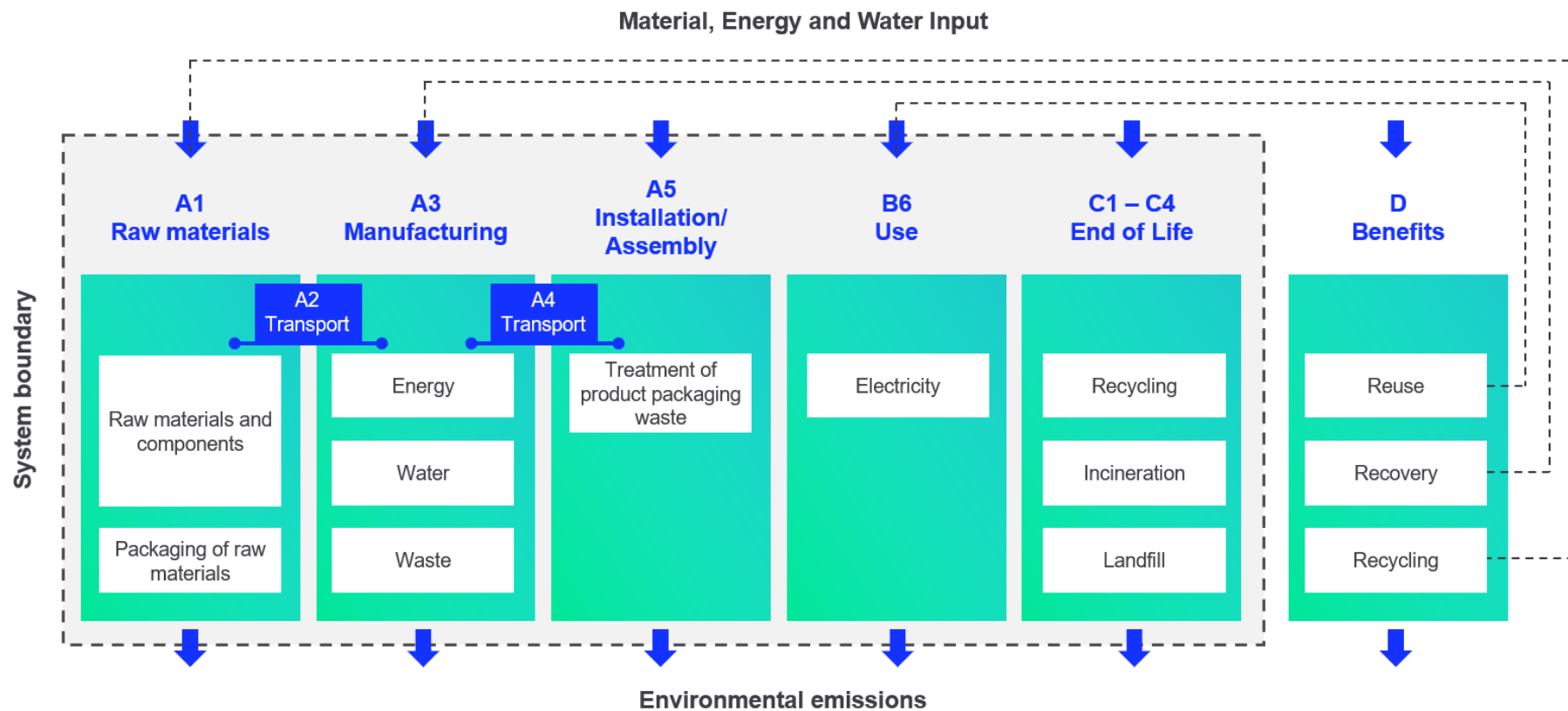
PRODUCT USE AND MAINTENANCE (B1-B7)

During the use phase, the product consumes electricity from EU's electricity grid mix (B6). The total power consumption of the reference product is calculated as follows: Wattage x Reference lifetime = kWh consumed throughout the entire use phase B6.

PRODUCT END OF LIFE (C1-C4, D)

Consumption of energy and natural resources in demolition process is assumed to be negligible. It is assumed that the waste is collected separately and transported to the waste treatment centre. Transportation distance to treatment is assumed as 150 km and the transportation method is assumed to be lorry (C2). According to EN 50693:2019, the sequence of treatment operations occurring to the product shall include de-pollution, fractions separation and preparation (dismantling, crushing, shredding, sorting), recycling, other material recovery, energy recovery and disposal. In this study, the default values from table G.4 of EN 50693 is used for treating materials in different waste treatment methods. Due to the material and energy recovery potential of parts in the lighting system, the end-of-life product is converted into recycled raw materials, while the energy recovered from incineration displaces electricity and heat production (D). The benefits and loads of incineration and recycling are included in Module D.

SYSTEM BOUNDARY



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, ancillary materials, energy & water consumption, material loss and waste generation at the manufacturing site are attributed to the bill of materials of the products, therefore, they are allocated by partitioning the quantities on the base of the total production in kg throughout the year. Thus, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging materials	No allocation
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

This EPD is created with a most conservative scenario in A1-A3 in terms of material composition.

AVERAGES AND VARIABILITY

Type of average	No averaging
Averaging method	Not applicable
Variation in GWP-fossil for A1-A3	Not applicable

This EPD is product and factory specific and does not contain average calculations. It is created with a most conservative scenario in A1-A3 in terms of material composition.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. EcoInvent 3.10.1 database was used as the source of environmental data.

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	3.74E+00	7.20E-02	4.64E-01	4.28E+00	5.43E-02	1.14E-01	MNR	MNR	MNR	MNR	MNR	8.21E+01	MNR	MNR	2.84E-03	3.61E-02	5.02E-02	-1.84E+00
GWP – fossil	kg CO ₂ e	3.76E+00	7.20E-02	5.73E-01	4.40E+00	5.42E-02	2.89E-03	MNR	MNR	MNR	MNR	MNR	8.18E+01	MNR	MNR	2.83E-03	3.61E-02	2.04E-02	-1.84E+00
GWP – biogenic	kg CO ₂ e	-1.96E-02	0.00E+00	-1.11E-01	-1.31E-01	0.00E+00	1.11E-01	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	0.00E+00	2.98E-02	-3.69E-04
GWP – LULUC	kg CO ₂ e	3.52E-03	3.59E-05	2.58E-03	6.13E-03	2.43E-05	8.58E-07	MNR	MNR	MNR	MNR	MNR	2.51E-01	MNR	MNR	1.27E-06	3.57E-06	1.88E-06	-3.02E-04
Ozone depletion pot.	kg CFC ₁₁ e	2.58E-08	1.05E-09	1.48E-08	4.17E-08	8.01E-10	3.35E-11	MNR	MNR	MNR	MNR	MNR	1.51E-06	MNR	MNR	4.19E-11	4.23E-11	2.76E-11	-6.76E-09
Acidification potential	mol H ⁺ e	3.41E-02	1.27E-03	1.56E-03	3.70E-02	1.85E-04	2.23E-05	MNR	MNR	MNR	MNR	MNR	4.81E-01	MNR	MNR	9.67E-06	3.74E-05	1.16E-05	-2.29E-02
EP-freshwater ²⁾	kg Pe	1.95E-03	3.77E-06	9.96E-05	2.05E-03	4.22E-06	4.91E-07	MNR	MNR	MNR	MNR	MNR	7.62E-02	MNR	MNR	2.21E-07	1.62E-06	3.20E-07	-1.20E-03
EP-marine	kg Ne	4.56E-03	3.25E-04	4.89E-04	5.37E-03	6.08E-05	1.21E-05	MNR	MNR	MNR	MNR	MNR	7.55E-02	MNR	MNR	3.18E-06	1.09E-05	2.02E-05	-2.49E-03
EP-terrestrial	mol Ne	4.72E-02	3.60E-03	4.18E-03	5.50E-02	6.61E-04	1.03E-04	MNR	MNR	MNR	MNR	MNR	6.76E-01	MNR	MNR	3.46E-05	1.11E-04	5.15E-05	-2.62E-02
POCP (“smog”) ³⁾	kg NMVOCe	1.48E-02	1.03E-03	2.32E-03	1.82E-02	2.73E-04	2.62E-05	MNR	MNR	MNR	MNR	MNR	2.23E-01	MNR	MNR	1.42E-05	3.12E-05	1.50E-05	-7.88E-03
ADP-minerals & metals ⁴⁾	kg Sbe	1.31E-04	1.29E-07	2.34E-06	1.34E-04	1.51E-07	6.75E-09	MNR	MNR	MNR	MNR	MNR	1.10E-03	MNR	MNR	7.91E-09	1.66E-07	4.34E-09	-7.63E-05
ADP-fossil resources	MJ	4.02E+01	9.55E-01	9.35E+00	5.05E+01	7.87E-01	1.94E-02	MNR	MNR	MNR	MNR	MNR	1.90E+03	MNR	MNR	4.11E-02	3.95E-02	2.27E-02	-1.84E+01
Water use ⁵⁾	m ³ e depr.	1.22E+00	3.68E-03	1.63E-01	1.38E+00	3.89E-03	4.71E-03	MNR	MNR	MNR	MNR	MNR	5.19E+01	MNR	MNR	2.03E-04	2.72E-03	1.42E-03	-1.49E-01

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO₄e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	2.53E-07	4.42E-09	2.51E-08	2.82E-07	5.43E-09	1.86E-10	MNR	MNR	MNR	MNR	MNR	1.72E-06	MNR	MNR	2.84E-10	4.55E-10	1.72E-10	-1.01E-07
Ionizing radiation ⁶⁾	kBq U235e	1.85E-01	6.28E-04	1.30E-02	1.99E-01	6.86E-04	3.22E-05	MNR	MNR	MNR	MNR	MNR	5.26E+01	MNR	MNR	3.58E-05	1.32E-04	3.45E-05	-1.00E-01
Ecotoxicity (freshwater)	CTUe	2.20E+01	1.02E-01	1.54E+00	2.36E+01	1.11E-01	9.65E-02	MNR	MNR	MNR	MNR	MNR	2.90E+02	MNR	MNR	5.82E-03	8.46E-02	3.40E+00	-7.34E+00
Human toxicity, cancer	CTUh	2.34E-09	1.37E-11	1.77E-10	2.53E-09	8.95E-12	7.20E-12	MNR	MNR	MNR	MNR	MNR	2.77E-08	MNR	MNR	4.68E-13	5.07E-12	5.45E-12	-1.16E-09
Human tox. non-cancer	CTUh	8.88E-08	4.23E-10	4.36E-09	9.35E-08	5.10E-10	2.92E-10	MNR	MNR	MNR	MNR	MNR	1.43E-06	MNR	MNR	2.66E-11	2.42E-10	1.89E-10	-7.17E-08
SQP ⁷⁾	-	1.71E+01	5.13E-01	1.02E+01	2.78E+01	7.93E-01	6.98E-03	MNR	MNR	MNR	MNR	MNR	4.24E+02	MNR	MNR	4.14E-02	6.39E-02	2.93E-02	-4.56E+00

6) EN 15804+A2 disclaimer for ionizing radiation, human health. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator; 7) SQP = Land use related impacts/soil quality.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy ⁸⁾	MJ	3.62E+00	1.02E-02	1.10E+01	1.47E+01	1.08E-02	-1.30E+00	MNR	MNR	MNR	MNR	MNR	5.22E+02	MNR	MNR	5.64E-04	5.40E-03	5.82E-04	-3.88E-01
Renew. PER as material	MJ	2.94E-01	0.00E+00	1.00E+00	1.30E+00	0.00E+00	-1.00E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	-1.03E-03	-2.93E-01	0.00E+00
Total use of renew. PER	MJ	3.92E+00	1.02E-02	1.20E+01	1.60E+01	1.08E-02	-2.30E+00	MNR	MNR	MNR	MNR	MNR	5.22E+02	MNR	MNR	5.64E-04	4.36E-03	-2.93E-01	-3.88E-01
Non-re. PER as energy	MJ	3.93E+01	9.55E-01	8.47E+00	4.88E+01	7.87E-01	1.82E-02	MNR	MNR	MNR	MNR	MNR	1.90E+03	MNR	MNR	4.11E-02	-4.69E-01	-4.99E-01	-1.84E+01
Non-re. PER as material	MJ	8.40E-01	0.00E+00	1.74E-02	8.58E-01	0.00E+00	-1.74E-02	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	-3.85E-01	-4.56E-01	0.00E+00
Total use of non-re. PER	MJ	4.02E+01	9.55E-01	8.49E+00	4.96E+01	7.87E-01	8.28E-04	MNR	MNR	MNR	MNR	MNR	1.90E+03	MNR	MNR	4.11E-02	-8.54E-01	-9.55E-01	-1.84E+01
Secondary materials	kg	2.10E-02	4.31E-04	4.20E-02	6.34E-02	3.35E-04	2.70E-05	MNR	MNR	MNR	MNR	MNR	3.15E-01	MNR	MNR	1.75E-05	4.39E-05	1.21E-04	7.71E-02
Renew. secondary fuels	MJ	2.01E-03	3.05E-06	5.48E-03	7.49E-03	4.26E-06	3.57E-07	MNR	MNR	MNR	MNR	MNR	2.51E-03	MNR	MNR	2.22E-07	1.93E-06	3.56E-07	-5.62E-05
Non-ren. secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m ³	2.82E-02	1.03E-04	9.37E-03	3.77E-02	1.16E-04	7.00E-05	MNR	MNR	MNR	MNR	MNR	1.65E+00	MNR	MNR	6.08E-06	5.21E-05	-7.23E-05	-7.09E-03

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	7.72E-01	1.44E-03	2.64E-02	8.00E-01	1.33E-03	2.07E-03	MNR	MNR	MNR	MNR	MNR	4.82E+00	MNR	MNR	6.97E-05	8.31E-04	2.71E-03	-3.89E-01
Non-hazardous waste	kg	1.53E+01	2.34E-02	7.24E-01	1.61E+01	2.47E-02	8.32E-02	MNR	MNR	MNR	MNR	MNR	3.73E+02	MNR	MNR	1.29E-03	2.27E-02	1.90E-01	-4.63E+00
Radioactive waste	kg	4.63E-05	1.54E-07	3.16E-06	4.96E-05	1.68E-07	8.16E-09	MNR	MNR	MNR	MNR	MNR	1.35E-02	MNR	MNR	8.77E-09	3.27E-08	8.50E-09	-2.41E-05

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	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	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	1.02E-01	0.00E+00	0.00E+00
Materials for energy rec	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	1.40E-02	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	3.05E-02	3.05E-02	0.00E+00	0.00E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO ₂ e	3.74E+00	7.16E-02	5.80E-01	4.39E+00	5.40E-02	2.86E-03	MNR	MNR	MNR	MNR	MNR	8.19E+01	MNR	MNR	2.82E-03	3.61E-02	2.03E-02	-1.83E+00
Ozone depletion Pot.	kg CFC ₁₁ e	2.34E-08	8.33E-10	1.28E-08	3.70E-08	6.39E-10	2.96E-11	MNR	MNR	MNR	MNR	MNR	1.26E-06	MNR	MNR	3.34E-11	3.58E-11	2.27E-11	-6.30E-09
Acidification	kg SO ₂ e	2.92E-02	1.01E-03	1.20E-03	3.14E-02	1.41E-04	1.60E-05	MNR	MNR	MNR	MNR	MNR	4.10E-01	MNR	MNR	7.38E-06	2.94E-05	8.41E-06	-1.98E-02
Eutrophication	kg PO ₄ ³ e	3.32E-03	1.22E-04	5.31E-04	3.98E-03	3.44E-05	5.63E-06	MNR	MNR	MNR	MNR	MNR	5.30E-02	MNR	MNR	1.80E-06	5.34E-06	4.27E-06	-1.14E-03
POCP ("smog")	kg C ₂ H ₄ e	1.86E-03	5.35E-05	1.55E-04	2.07E-03	1.26E-05	1.13E-06	MNR	MNR	MNR	MNR	MNR	2.23E-02	MNR	MNR	6.58E-07	1.77E-06	7.59E-07	-1.11E-03
ADP-elements	kg Sbe	1.31E-04	1.26E-07	2.26E-06	1.33E-04	1.48E-07	4.72E-09	MNR	MNR	MNR	MNR	MNR	1.10E-03	MNR	MNR	7.71E-09	1.65E-07	3.84E-09	-7.61E-05
ADP-fossil	MJ	3.72E+01	9.45E-01	9.13E+00	4.73E+01	7.76E-01	1.89E-02	MNR	MNR	MNR	MNR	MNR	9.77E+02	MNR	MNR	4.06E-02	3.75E-02	2.22E-02	-1.68E+01

APPENDIX (EPD HUB ALIGNED)

This section represents the scaling method for the **B6 module**, following the PEP EcoPassport PSR for luminaries (PSR-0014-ed2.0-EN-2023 07 13). The GWP results were scaled from a reference variant of a product family, based on various light management scenarios and power inputs of the luminaires within the same product family

To calculate the Scaled Impact (*SI*), we have followed the below methods:

1. Calculate the power scaling factor (PSF), which is the ratio of the power input of the variant in questions P_{in} and the power input of the base variant P_{base} .

$$PSF = \frac{P_{in}}{P_{base}}$$

2. Calculate the Total Scaling factor by multiplying the PSF by the control scaling factor (CSF), where the CSF is determined according the relevant control factor scenario (e.g. if the luminaire has a presence detection system). The presented controls factors values in Table A1 are based on BS EN 15193-1:2017. Please refer to this publication or contact Signify directly for more information.

$$TSF = PSF * CSF$$

Table A1: Light management function (PEP EcoPassport aligned)

Scenario	Abbrev.	CSF
No control	NC	1
Daylight dependency factor	DD	0.75
Presence sensing	PS	0.75
Daylight dependency and presence sensing	DD+PS	0.55

3. Lastly, the GWP of the base variant is then scaled by the TSF.

$$Scaled\ Impact = GWP_{case} * TSF$$

Table A2 Scaled GWP per scaling factor (EPD Hub aligned)

Configuration	Flux [lm]	Power [W]	Efficacy [lm/W]	PSF	Total Scaling Factor (TSF)				Scaled Impacts (GWP100 B6 - kg CO2eq.)			
					NC	DD	PS	DD+PS	NC	DD	PS	DD+PS
915004538801 - 12442009 Smart Lotis Recessed 82 1x IP55 LED 2700K Medium DE White Structure	529.0	5.0	105.8	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915004515101 - 12442032 Smart Lotis Recessed 82 1x IP55 LED 2700K Medium DE Black Structure	436.0	5.0	87.2	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005009901 - 12442046 Smart Lotis Recessed 82 1x IP55 LED 2700K Medium DE Gold Matt	473.0	5.0	94.6	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005010001 - 12442109 Smart Lotis Recessed 82 1x IP55 LED 2700K Flood DE White Structure	499.0	5.0	99.8	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005010101 - 12442132 Smart Lotis Recessed 82 1x IP55 LED 2700K Flood DE Black Structure	455.0	5.0	91.0	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005010201 - 12442146 Smart Lotis Recessed 82 1x IP55 LED 2700K Flood DE Gold Matt	485.0	5.0	97.0	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005010301 - 12442209 Smart Lotis Recessed 82 1x IP55 LED 4000K Flood DE White Structure	567.0	5.0	113.4	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005010401 - 12442232 Smart Lotis Recessed 82 1x IP55 LED 4000K Flood DE Black Structure	518.0	5.0	103.6	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005010501 - 12442246 Smart Lotis Recessed 82 1x IP55 LED 4000K Flood DE Gold Matt	551.0	5.0	110.2	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005010601 - 12442309 Smart Lotis Recessed 82 1x IP55 LED 3000K Medium DE White Structure	550.0	5.0	110.0	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2

915005010701 - 12442332 Smart Lotis Recessed 82 1x IP55 LED 3000K Medium DE Black Structure	453.0	5.0	90.6	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005010801 - 12442346 Smart Lotis Recessed 82 1x IP55 LED 3000K Medium DE Gold Matt	492.0	5.0	98.4	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005010901 - 12442409 Smart Lotis Recessed 82 1x IP55 LED 3000K Flood DE White Structure	518.0	5.0	103.6	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005011001 - 12442432 Smart Lotis Recessed 82 1x IP55 LED 3000K Flood DE Black Structure	474.0	5.0	94.8	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005011101 - 12442446 Smart Lotis Recessed 82 1x IP55 LED 3000K Flood DE Gold Matt	504.0	5.0	100.8	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005011201 - 12442509 Smart Lotis Recessed 82 1x IP55 LED 4000K Medium DE White Structure	601.0	5.0	120.2	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005011301 - 12442532 Smart Lotis Recessed 82 1x IP55 LED 4000K Medium DE Black Structure	496.0	5.0	99.2	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005011401 - 12442546 Smart Lotis Recessed 82 1x IP55 LED 4000K Medium DE Gold Matt	538.0	5.0	107.6	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005355501 - 12442609 Smart Lotis Recessed 82 1x IP55 LED 2700K Spot DE White Structure	504.0	5.0	100.8	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005355601 - 12442632 Smart Lotis Recessed 82 1x IP55 LED 2700K Spot DE Black Structure	464.0	5.0	92.8	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005355701 - 12442646 Smart Lotis Recessed 82 1x IP55 LED 2700K Spot DE Gold Matt	514.0	5.0	102.8	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005355801 - 12442709 Smart Lotis Recessed 82 1x IP55 LED 3000K Spot DE White Structure	524.0	5.0	104.8	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005355901 - 12442732 Smart Lotis Recessed 82 1x IP55 LED 3000K Spot DE Black Structure	483.0	5.0	96.6	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005356001 - 12442746 Smart Lotis Recessed 82 1x IP55 LED 3000K Spot DE Gold Matt	534.0	5.0	106.8	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005356101 - 12442809 Smart Lotis Recessed 82 1x IP55 LED 4000K Spot DE White Structure	573.0	5.0	114.6	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2

915005356201 - 12442832 Smart Lotis Recessed 82 1x IP55 LED 4000K Spot DE Black Structure	528.0	5.0	105.6	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005356301 - 12442846 Smart Lotis Recessed 82 1x IP55 LED 4000K Spot DE Gold Matt	585.0	5.0	117.0	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915005346701 - 12444109 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Medium DE White Structure	444.0	6.0	74.0	1.2	1.2	0.9	0.9	0.66	98.5	73.9	73.9	54.2
915005346801 - 12444132 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Medium DE Black Structure	407.0	6.0	67.8	1.2	1.2	0.9	0.9	0.66	98.5	73.9	73.9	54.2
915005346901 - 12444146 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Medium DE Gold Matt	424.0	6.0	70.7	1.2	1.2	0.9	0.9	0.66	98.5	73.9	73.9	54.2
915005347001 - 12444209 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Flood DE White Structure	433.0	6.0	72.2	1.2	1.2	0.9	0.9	0.66	98.5	73.9	73.9	54.2
915005347101 - 12444232 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Flood DE Black Structure	394.0	6.0	65.7	1.2	1.2	0.9	0.9	0.66	98.5	73.9	73.9	54.2
915005347201 - 12444246 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Flood DE Gold Matt	415.0	6.0	69.2	1.2	1.2	0.9	0.9	0.66	98.5	73.9	73.9	54.2
915006292007 - 12442015 Smart Lotis Recessed 82 1x IP55 LED 2700K Medium DE Champagne Brushed	535.0	5.0	107.0	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292006 - 12442014 Smart Lotis Recessed 82 1x IP55 LED 2700K Medium DE Bronze Brushed	522.0	5.0	104.4	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292009 - 12442043 Smart Lotis Recessed 82 1x IP55 LED 2700K Medium DE Black Brushed	528.0	5.0	105.6	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292008 - 12442016 Smart Lotis Recessed 82 1x IP55 LED 2700K Medium DE Silver Bronze Brushed	539.0	5.0	107.8	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292010 - 12442114 Smart Lotis Recessed 82 1x IP55 LED 2700K Flood DE Bronze Brushed	520.0	5.0	104.0	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292012 - 12442116 Smart Lotis Recessed 82 1x IP55 LED 2700K Flood DE Silver Bronze Brushed	539.0	5.0	107.8	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292011 - 12442115 Smart Lotis Recessed 82 1x IP55 LED 2700K Flood DE Champagne Brushed	536.0	5.0	107.2	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2

915006292013 - 12442143 Smart Lotis Recessed 82 1x IP55 LED 2700K Flood DE Black Brushed	535.0	5.0	107.0	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292015 - 12442215 Smart Lotis Recessed 82 1x IP55 LED 4000K Flood DE Champagne Brushed	592.0	5.0	118.4	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292014 - 12442214 Smart Lotis Recessed 82 1x IP55 LED 4000K Flood DE Bronze Brushed	574.0	5.0	114.8	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292017 - 12442243 Smart Lotis Recessed 82 1x IP55 LED 4000K Flood DE Black Brushed	591.0	5.0	118.2	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292016 - 12442216 Smart Lotis Recessed 82 1x IP55 LED 4000K Flood DE Silver Bronze Brushed	595.0	5.0	119.0	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292018 - 12442314 Smart Lotis Recessed 82 1x IP55 LED 3000K Medium DE Bronze Brushed	546.0	5.0	109.2	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292019 - 12442315 Smart Lotis Recessed 82 1x IP55 LED 3000K Medium DE Champagne Brushed	559.0	5.0	111.8	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292020 - 12442316 Smart Lotis Recessed 82 1x IP55 LED 3000K Medium DE Silver Bronze Brushed	563.0	5.0	112.6	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292021 - 12442343 Smart Lotis Recessed 82 1x IP55 LED 3000K Medium DE Black Brushed	552.0	5.0	110.4	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292022 - 12442414 Smart Lotis Recessed 82 1x IP55 LED 3000K Flood DE Bronze Brushed	543.0	5.0	108.6	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292023 - 12442415 Smart Lotis Recessed 82 1x IP55 LED 3000K Flood DE Champagne Brushed	560.0	5.0	112.0	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292024 - 12442416 Smart Lotis Recessed 82 1x IP55 LED 3000K Flood DE Silver Bronze Brushed	563.0	5.0	112.6	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292025 - 12442443 Smart Lotis Recessed 82 1x IP55 LED 3000K Flood DE Black Brushed	559.0	5.0	111.8	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292026 - 12442514 Smart Lotis Recessed 82 1x IP55 LED 4000K Medium DE Bronze Brushed	577.0	5.0	115.4	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292027 - 12442515 Smart Lotis Recessed 82 1x IP55 LED 4000K Medium DE Champagne Brushed	591.0	5.0	118.2	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2

915006292029 - 12442543 Smart Lotis Recessed 82 1x IP55 LED 4000K Medium DE Black Brushed	584.0	5.0	116.8	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292028 - 12442516 Smart Lotis Recessed 82 1x IP55 LED 4000K Medium DE Silver Bronze Brushed	596.0	5.0	119.2	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292030 - 12442614 Smart Lotis Recessed 82 1x IP55 LED 2700K Spot DE Bronze Brushed	529.0	5.0	105.8	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292032 - 12442616 Smart Lotis Recessed 82 1x IP55 LED 2700K Spot DE Silver Bronze Brushed	546.0	5.0	109.2	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292031 - 12442615 Smart Lotis Recessed 82 1x IP55 LED 2700K Spot DE Champagne Brushed	545.0	5.0	109.0	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292033 - 12442643 Smart Lotis Recessed 82 1x IP55 LED 2700K Spot DE Black Brushed	528.0	5.0	105.6	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292034 - 12442714 Smart Lotis Recessed 82 1x IP55 LED 3000K Spot DE Bronze Brushed	553.0	5.0	110.6	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292035 - 12442715 Smart Lotis Recessed 82 1x IP55 LED 3000K Spot DE Champagne Brushed	569.0	5.0	113.8	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292036 - 12442716 Smart Lotis Recessed 82 1x IP55 LED 3000K Spot DE Silver Bronze Brushed	571.0	5.0	114.2	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292037 - 12442743 Smart Lotis Recessed 82 1x IP55 LED 3000K Spot DE Black Brushed	552.0	5.0	110.4	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292038 - 12442814 Smart Lotis Recessed 82 1x IP55 LED 4000K Spot DE Bronze Brushed	585.0	5.0	117.0	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292040 - 12442816 Smart Lotis Recessed 82 1x IP55 LED 4000K Spot DE Silver Bronze Brushed	603.0	5.0	120.6	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292039 - 12442815 Smart Lotis Recessed 82 1x IP55 LED 4000K Spot DE Champagne Brushed	602.0	5.0	120.4	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292041 - 12442843 Smart Lotis Recessed 82 1x IP55 LED 4000K Spot DE Black Brushed	584.0	5.0	116.8	1.0	1.0	0.75	0.75	0.55	82.1	61.6	61.6	45.2
915006292051 - 12444115 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Medium DE Champagne Brushed	432.0	6.0	72.0	1.2	1.2	0.9	0.9	0.66	98.5	73.9	73.9	54.2

915006292050 - 12444114 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Medium DE Bronze Brushed	422.0	6.0	70.3	1.2	1.2	0.9	0.9	0.66	98.5	73.9	73.9	54.2
915006292053 - 12444143 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Medium DE Black Brushed	422.0	6.0	70.3	1.2	1.2	0.9	0.9	0.66	98.5	73.9	73.9	54.2
915006292052 - 12444116 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Medium DE Silver Bronze Brushed	436.0	6.0	72.7	1.2	1.2	0.9	0.9	0.66	98.5	73.9	73.9	54.2
915006292054 - 12444214 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Flood DE Bronze Brushed	421.0	6.0	70.2	1.2	1.2	0.9	0.9	0.66	98.5	73.9	73.9	54.2
915006292056 - 12444216 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Flood DE Silver Bronze Brushed	450.0	6.0	75.0	1.2	1.2	0.9	0.9	0.66	98.5	73.9	73.9	54.2
915006292055 - 12444215 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Flood DE Champagne Brushed	432.0	6.0	72.0	1.2	1.2	0.9	0.9	0.66	98.5	73.9	73.9	54.2
915006292057 - 12444243 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Flood DE Black Brushed	424.0	6.0	70.7	1.2	1.2	0.9	0.9	0.66	98.5	73.9	73.9	54.2

* Note that if the product is non-dimmable, only the values for “NC (No Control)” are valid; if the driver type is PSU, only the values for “NC (No Control)” and “PS (presence sensing)” for are valid.

APPENDIX (PEP ECOPASSPORT ALIGNED)

This section represents the scaling method for the **B6 module**, following the PEP EcoPassport PSR for luminaries (PSR-0014-ed2.0-EN-2023 07 13). The GWP results were scaled from a reference variant of a product family, based on various light management functions, the lumen output (O_{lum}) and reference service life (RSL) of each product within the same product family.

To calculate the Scaled Impact (SI_{pep}), we have followed the below methods:

1. Calculate the power scaling factor (PSF), which is the ratio of the power input of the variant in questions P_{in} and the power input of the base variant P_{base} .

$$PSF = \frac{P_{in}}{P_{base}}$$

2. Using this scaled GWP, we then can apply the PEP Ecopassport method for calculating the environmental impact of the functional unit for a luminary (1000 lumens over 35000 hours), applied to B6, where the Functional Unit application considers the lumen output (O_{lum}) and reference service lifetime (RSL) of the product to estimate the final environmental impact. The scaled impact (SI_{pep}) is presented in Table A4.

$$GSF = \frac{FU_{pep}}{FU_p} = \frac{1,000}{O_{lum}} * \frac{35,000}{RSL}$$

3. Calculate the GWP scaling factor ($PGSF$), by multiplying the PSF by the GSF.

$$PGSF = PSF * GSF$$

4. Calculate the Total Scaling factor by multiplying the PSF by the control scaling factor (CSF), where the CSF is determined according the relevant control factor scenario (e.g. if the luminaire has a presence detection system), as presented in Table A1.

$$TSF = PGSF * CSF$$

Table A3: Light management functions (PEP EcoPassport aligned)

Scenario	Abbrev.	CSF
No control	NC	1
Daylight dependency factor	DD	0.75
Presence sensing	PS	0.75
Daylight dependency and presence sensing	DD+PS	0.55

5. Lastly, the GWP of the base variant is then scaled by the TSF.

$$Scaled\ GWP = GWP_{case} * TSF$$

As described in the EPD, calculations are made based on dataset describing electricity available on the low voltage level in Europe for year 2022 (source Ecoinvent 3.8 database). This value should be adjusted depending on specific project requirements. Presented controls factors and functional unit conversion values are based on the PEP EcoPassport PSR for luminaries (PSR-0014-ed2.0-EN-2023 07 13). Please refer to this publication or contact Signify directly for more information.

Table A4 Scale impact per scaling factor (PEP EcoPassport aligned)

Configuration	Flux [lm]	Power [W]	Efficacy [lm/W]	PSF	Total Scaling Factor (TSF)				Scaled Impacts (GWP100 B6 - kg CO2eq.)			
					NC	DD	PS	DD+PS	NC	DD	PS	DD+PS
915004538801 - 12442009 Smart Lotis Recessed 82 1x IP55 LED 2700K Medium DE White Structure	529.0	5.0	105.8	1.0	1.323	0.992	0.992	0.728	108.6	81.4	81.4	59.8
915004515101 - 12442032 Smart Lotis Recessed 82 1x IP55 LED 2700K Medium DE Black Structure	436.0	5.0	87.2	1.0	1.606	1.205	1.205	0.883	131.9	98.9	98.9	72.5
915005009901 - 12442046 Smart Lotis Recessed 82 1x IP55 LED 2700K Medium DE Gold Matt	473.0	5.0	94.6	1.0	1.48	1.11	1.11	0.814	121.5	91.1	91.1	66.8
915005010001 - 12442109 Smart Lotis Recessed 82 1x IP55 LED 2700K Flood DE White Structure	499.0	5.0	99.8	1.0	1.403	1.052	1.052	0.772	115.2	86.4	86.4	63.4

915005010101 - 12442132 Smart Lotis Recessed 82 1x IP55 LED 2700K Flood DE Black Structure	455.0	5.0	91.0	1.0	1.538	1.153	1.153	0.846	126.3	94.7	94.7	69.5
915005010201 - 12442146 Smart Lotis Recessed 82 1x IP55 LED 2700K Flood DE Gold Matt	485.0	5.0	97.0	1.0	1.443	1.082	1.082	0.794	118.5	88.8	88.8	65.2
915005010301 - 12442209 Smart Lotis Recessed 82 1x IP55 LED 4000K Flood DE White Structure	567.0	5.0	113.4	1.0	1.235	0.926	0.926	0.679	101.4	76.0	76.0	55.7
915005010401 - 12442232 Smart Lotis Recessed 82 1x IP55 LED 4000K Flood DE Black Structure	518.0	5.0	103.6	1.0	1.351	1.013	1.013	0.743	110.9	83.2	83.2	61.0
915005010501 - 12442246 Smart Lotis Recessed 82 1x IP55 LED 4000K Flood DE Gold Matt	551.0	5.0	110.2	1.0	1.27	0.953	0.953	0.699	104.3	78.2	78.2	57.4
<u>915005010601 - 12442309 Smart Lotis Recessed 82 1x IP55 LED 3000K Medium DE White Structure</u>	550.0	5.0	110.0	1.0	1.273	0.955	0.955	0.7	104.5	78.4	78.4	57.5
915005010701 - 12442332 Smart Lotis Recessed 82 1x IP55 LED 3000K Medium DE Black Structure	453.0	5.0	90.6	1.0	1.545	1.159	1.159	0.85	126.8	95.2	95.2	69.8
915005010801 - 12442346 Smart Lotis Recessed 82 1x IP55 LED 3000K Medium DE Gold Matt	492.0	5.0	98.4	1.0	1.423	1.067	1.067	0.783	116.8	87.6	87.6	64.3
915005010901 - 12442409 Smart Lotis Recessed 82 1x IP55 LED 3000K Flood DE White Structure	518.0	5.0	103.6	1.0	1.351	1.013	1.013	0.743	110.9	83.2	83.2	61.0
915005011001 - 12442432 Smart Lotis Recessed 82 1x IP55 LED 3000K Flood DE Black Structure	474.0	5.0	94.8	1.0	1.477	1.108	1.108	0.812	121.3	91.0	91.0	66.7
915005011101 - 12442446 Smart Lotis Recessed 82 1x IP55 LED 3000K Flood DE Gold Matt	504.0	5.0	100.8	1.0	1.389	1.042	1.042	0.764	114.0	85.5	85.5	62.7
915005011201 - 12442509 Smart Lotis Recessed 82 1x IP55 LED 4000K Medium DE White Structure	601.0	5.0	120.2	1.0	1.165	0.874	0.874	0.641	95.6	71.8	71.8	52.6
915005011301 - 12442532 Smart Lotis Recessed 82 1x IP55 LED 4000K Medium DE Black Structure	496.0	5.0	99.2	1.0	1.411	1.058	1.058	0.776	115.8	86.9	86.9	63.7
915005011401 - 12442546 Smart Lotis Recessed 82 1x IP55 LED 4000K Medium DE Gold Matt	538.0	5.0	107.6	1.0	1.301	0.976	0.976	0.716	106.8	80.1	80.1	58.8
915005355501 - 12442609 Smart Lotis Recessed 82 1x IP55 LED 2700K Spot DE White Structure	504.0	5.0	100.8	1.0	1.389	1.042	1.042	0.764	114.0	85.5	85.5	62.7

915005355601 - 12442632 Smart Lotis Recessed 82 1x IP55 LED 2700K Spot DE Black Structure	464.0	5.0	92.8	1.0	1.509	1.132	1.132	0.83	123.9	92.9	92.9	68.1
915005355701 - 12442646 Smart Lotis Recessed 82 1x IP55 LED 2700K Spot DE Gold Matt	514.0	5.0	102.8	1.0	1.362	1.022	1.022	0.749	111.8	83.9	83.9	61.5
915005355801 - 12442709 Smart Lotis Recessed 82 1x IP55 LED 3000K Spot DE White Structure	524.0	5.0	104.8	1.0	1.336	1.002	1.002	0.735	109.7	82.3	82.3	60.3
915005355901 - 12442732 Smart Lotis Recessed 82 1x IP55 LED 3000K Spot DE Black Structure	483.0	5.0	96.6	1.0	1.449	1.087	1.087	0.797	119.0	89.2	89.2	65.4
915005356001 - 12442746 Smart Lotis Recessed 82 1x IP55 LED 3000K Spot DE Gold Matt	534.0	5.0	106.8	1.0	1.311	0.983	0.983	0.721	107.6	80.7	80.7	59.2
915005356101 - 12442809 Smart Lotis Recessed 82 1x IP55 LED 4000K Spot DE White Structure	573.0	5.0	114.6	1.0	1.222	0.916	0.916	0.672	100.3	75.2	75.2	55.2
915005356201 - 12442832 Smart Lotis Recessed 82 1x IP55 LED 4000K Spot DE Black Structure	528.0	5.0	105.6	1.0	1.326	0.995	0.995	0.729	108.9	81.7	81.7	59.9
915005356301 - 12442846 Smart Lotis Recessed 82 1x IP55 LED 4000K Spot DE Gold Matt	585.0	5.0	117.0	1.0	1.197	0.898	0.898	0.658	98.3	73.7	73.7	54.0
915005346701 - 12444109 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Medium DE White Structure	444.0	6.0	74.0	1.2	1.892	1.419	1.419	1.041	155.3	116.5	116.5	85.5
915005346801 - 12444132 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Medium DE Black Structure	407.0	6.0	67.8	1.2	2.064	1.548	1.548	1.135	169.5	127.1	127.1	93.2
915005346901 - 12444146 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Medium DE Gold Matt	424.0	6.0	70.7	1.2	1.981	1.486	1.486	1.09	162.6	122.0	122.0	89.5
915005347001 - 12444209 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Flood DE White Structure	433.0	6.0	72.2	1.2	1.94	1.455	1.455	1.067	159.3	119.5	119.5	87.6
915005347101 - 12444232 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Flood DE Black Structure	394.0	6.0	65.7	1.2	2.132	1.599	1.599	1.173	175.0	131.3	131.3	96.3
915005347201 - 12444246 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Flood DE Gold Matt	415.0	6.0	69.2	1.2	2.024	1.518	1.518	1.113	166.2	124.6	124.6	91.4
915006292007 - 12442015 Smart Lotis Recessed 82 1x IP55 LED 2700K Medium DE Champagne Brushed	535.0	5.0	107.0	1.0	1.308	0.981	0.981	0.719	107.4	80.5	80.5	59.0

915006292006 - 12442014 Smart Lotis Recessed 82 1x IP55 LED 2700K Medium DE Bronze Brushed	522.0	5.0	104.4	1.0	1.341	1.006	1.006	0.738	110.1	82.6	82.6	60.6
915006292009 - 12442043 Smart Lotis Recessed 82 1x IP55 LED 2700K Medium DE Black Brushed	528.0	5.0	105.6	1.0	1.326	0.995	0.995	0.729	108.9	81.7	81.7	59.9
915006292008 - 12442016 Smart Lotis Recessed 82 1x IP55 LED 2700K Medium DE Silver Bronze Brushed	539.0	5.0	107.8	1.0	1.299	0.974	0.974	0.714	106.6	80.0	80.0	58.6
915006292010 - 12442114 Smart Lotis Recessed 82 1x IP55 LED 2700K Flood DE Bronze Brushed	520.0	5.0	104.0	1.0	1.346	1.01	1.01	0.74	110.5	82.9	82.9	60.8
915006292012 - 12442116 Smart Lotis Recessed 82 1x IP55 LED 2700K Flood DE Silver Bronze Brushed	539.0	5.0	107.8	1.0	1.299	0.974	0.974	0.714	106.6	80.0	80.0	58.6
915006292011 - 12442115 Smart Lotis Recessed 82 1x IP55 LED 2700K Flood DE Champagne Brushed	536.0	5.0	107.2	1.0	1.306	0.98	0.98	0.718	107.2	80.5	80.5	58.9
915006292013 - 12442143 Smart Lotis Recessed 82 1x IP55 LED 2700K Flood DE Black Brushed	535.0	5.0	107.0	1.0	1.308	0.981	0.981	0.719	107.4	80.5	80.5	59.0
915006292015 - 12442215 Smart Lotis Recessed 82 1x IP55 LED 4000K Flood DE Champagne Brushed	592.0	5.0	118.4	1.0	1.182	0.886	0.886	0.65	97.0	72.7	72.7	53.4
915006292014 - 12442214 Smart Lotis Recessed 82 1x IP55 LED 4000K Flood DE Bronze Brushed	574.0	5.0	114.8	1.0	1.22	0.915	0.915	0.671	100.2	75.1	75.1	55.1
915006292017 - 12442243 Smart Lotis Recessed 82 1x IP55 LED 4000K Flood DE Black Brushed	591.0	5.0	118.2	1.0	1.184	0.888	0.888	0.651	97.2	72.9	72.9	53.4
915006292016 - 12442216 Smart Lotis Recessed 82 1x IP55 LED 4000K Flood DE Silver Bronze Brushed	595.0	5.0	119.0	1.0	1.176	0.882	0.882	0.647	96.5	72.4	72.4	53.1
915006292018 - 12442314 Smart Lotis Recessed 82 1x IP55 LED 3000K Medium DE Bronze Brushed	546.0	5.0	109.2	1.0	1.282	0.962	0.962	0.705	105.3	79.0	79.0	57.9
915006292019 - 12442315 Smart Lotis Recessed 82 1x IP55 LED 3000K Medium DE Champagne Brushed	559.0	5.0	111.8	1.0	1.252	0.939	0.939	0.689	102.8	77.1	77.1	56.6
915006292020 - 12442316 Smart Lotis Recessed 82 1x IP55 LED 3000K Medium DE Silver Bronze Brushed	563.0	5.0	112.6	1.0	1.243	0.932	0.932	0.684	102.1	76.5	76.5	56.2
915006292021 - 12442343 Smart Lotis Recessed 82 1x IP55 LED 3000K Medium DE Black Brushed	552.0	5.0	110.4	1.0	1.268	0.951	0.951	0.697	104.1	78.1	78.1	57.2

915006292022 - 12442414 Smart Lotis Recessed 82 1x IP55 LED 3000K Flood DE Bronze Brushed	543.0	5.0	108.6	1.0	1.289	0.967	0.967	0.709	105.8	79.4	79.4	58.2
915006292023 - 12442415 Smart Lotis Recessed 82 1x IP55 LED 3000K Flood DE Champagne Brushed	560.0	5.0	112.0	1.0	1.25	0.938	0.938	0.688	102.6	77.0	77.0	56.5
915006292024 - 12442416 Smart Lotis Recessed 82 1x IP55 LED 3000K Flood DE Silver Bronze Brushed	563.0	5.0	112.6	1.0	1.243	0.932	0.932	0.684	102.1	76.5	76.5	56.2
915006292025 - 12442443 Smart Lotis Recessed 82 1x IP55 LED 3000K Flood DE Black Brushed	559.0	5.0	111.8	1.0	1.252	0.939	0.939	0.689	102.8	77.1	77.1	56.6
915006292026 - 12442514 Smart Lotis Recessed 82 1x IP55 LED 4000K Medium DE Bronze Brushed	577.0	5.0	115.4	1.0	1.213	0.91	0.91	0.667	99.6	74.7	74.7	54.8
915006292027 - 12442515 Smart Lotis Recessed 82 1x IP55 LED 4000K Medium DE Champagne Brushed	591.0	5.0	118.2	1.0	1.184	0.888	0.888	0.651	97.2	72.9	72.9	53.4
915006292029 - 12442543 Smart Lotis Recessed 82 1x IP55 LED 4000K Medium DE Black Brushed	584.0	5.0	116.8	1.0	1.199	0.899	0.899	0.659	98.4	73.8	73.8	54.1
915006292028 - 12442516 Smart Lotis Recessed 82 1x IP55 LED 4000K Medium DE Silver Bronze Brushed	596.0	5.0	119.2	1.0	1.174	0.88	0.88	0.646	96.4	72.2	72.2	53.0
915006292030 - 12442614 Smart Lotis Recessed 82 1x IP55 LED 2700K Spot DE Bronze Brushed	529.0	5.0	105.8	1.0	1.323	0.992	0.992	0.728	108.6	81.4	81.4	59.8
915006292032 - 12442616 Smart Lotis Recessed 82 1x IP55 LED 2700K Spot DE Silver Bronze Brushed	546.0	5.0	109.2	1.0	1.282	0.962	0.962	0.705	105.3	79.0	79.0	57.9
915006292031 - 12442615 Smart Lotis Recessed 82 1x IP55 LED 2700K Spot DE Champagne Brushed	545.0	5.0	109.0	1.0	1.284	0.963	0.963	0.706	105.4	79.1	79.1	58.0
915006292033 - 12442643 Smart Lotis Recessed 82 1x IP55 LED 2700K Spot DE Black Brushed	528.0	5.0	105.6	1.0	1.326	0.995	0.995	0.729	108.9	81.7	81.7	59.9
915006292034 - 12442714 Smart Lotis Recessed 82 1x IP55 LED 3000K Spot DE Bronze Brushed	553.0	5.0	110.6	1.0	1.266	0.95	0.95	0.696	103.9	78.0	78.0	57.1
915006292035 - 12442715 Smart Lotis Recessed 82 1x IP55 LED 3000K Spot DE Champagne Brushed	569.0	5.0	113.8	1.0	1.23	0.922	0.922	0.676	101.0	75.7	75.7	55.5
915006292036 - 12442716 Smart Lotis Recessed 82 1x IP55 LED 3000K Spot DE Silver Bronze Brushed	571.0	5.0	114.2	1.0	1.226	0.919	0.919	0.674	100.7	75.4	75.4	55.3

915006292037 - 12442743 Smart Lotis Recessed 82 1x IP55 LED 3000K Spot DE Black Brushed	552.0	5.0	110.4	1.0	1.268	0.951	0.951	0.697	104.1	78.1	78.1	57.2
915006292038 - 12442814 Smart Lotis Recessed 82 1x IP55 LED 4000K Spot DE Bronze Brushed	585.0	5.0	117.0	1.0	1.197	0.898	0.898	0.658	98.3	73.7	73.7	54.0
915006292040 - 12442816 Smart Lotis Recessed 82 1x IP55 LED 4000K Spot DE Silver Bronze Brushed	603.0	5.0	120.6	1.0	1.161	0.871	0.871	0.639	95.3	71.5	71.5	52.5
915006292039 - 12442815 Smart Lotis Recessed 82 1x IP55 LED 4000K Spot DE Champagne Brushed	602.0	5.0	120.4	1.0	1.163	0.872	0.872	0.64	95.5	71.6	71.6	52.5
915006292041 - 12442843 Smart Lotis Recessed 82 1x IP55 LED 4000K Spot DE Black Brushed	584.0	5.0	116.8	1.0	1.199	0.899	0.899	0.659	98.4	73.8	73.8	54.1
915006292051 - 12444115 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Medium DE Champagne Brushed	432.0	6.0	72.0	1.2	1.944	1.458	1.458	1.069	159.6	119.7	119.7	87.8
915006292050 - 12444114 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Medium DE Bronze Brushed	422.0	6.0	70.3	1.2	1.991	1.493	1.493	1.095	163.5	122.6	122.6	89.9
915006292053 - 12444143 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Medium DE Black Brushed	422.0	6.0	70.3	1.2	1.991	1.493	1.493	1.095	163.5	122.6	122.6	89.9
915006292052 - 12444116 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Medium DE Silver Bronze Brushed	436.0	6.0	72.7	1.2	1.927	1.445	1.445	1.06	158.2	118.6	118.6	87.0
915006292054 - 12444214 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Flood DE Bronze Brushed	421.0	6.0	70.2	1.2	1.996	1.497	1.497	1.098	163.9	122.9	122.9	90.1
915006292056 - 12444216 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Flood DE Silver Bronze Brushed	450.0	6.0	75.0	1.2	1.867	1.4	1.4	1.027	153.3	114.9	114.9	84.3
915006292055 - 12444215 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Flood DE Champagne Brushed	432.0	6.0	72.0	1.2	1.944	1.458	1.458	1.069	159.6	119.7	119.7	87.8
915006292057 - 12444243 Smart Lotis Recessed 82 1x IP55 LED 1800-3000K WD Flood DE Black Brushed	424.0	6.0	70.7	1.2	1.981	1.486	1.486	1.09	162.6	122.0	122.0	89.5

**** Note that if the product is non-dimmable, only the values for “NC (No Control)” are valid; if the driver type is PSU, only the values for “NC (No Control)” and “PS (presence sensing)” for are valid.**

ANNEX

USE PHASE (B6) VALUES FOR DIFFERENT COUNTRY MIX

The table in this annex is useful for conversion and comparison of B6 values with other energy country mix. The Global Warming Potential Total (GWP tot) value is illustrated for each country. The value refers to 1 kwh.

Example on how to use the table:

This EPD was done according to a specific customer use location that can be read in the paragraph **PRODUCT USE AND MAINTENANCE (B1-B7)**.

If for example the EPD was done according to EU energy mix and you want to see how the GWP total changes according to a Finland country energy mix, you can take the original value in the results table here highlighted in yellow:

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	5,88E+00	2,61E-01	-1,25E-01	6,02E+00	3,02E-01	5,41E-01	MND	MND	MND	MND	MND	4,06E+02	MND	MNR	1,77E-02	2,62E-01	1,88E-01	-1,09E+01

Divide that value according to the EU value from the following table (EU = 3.30E-01) and then multiplying for the Finland value from the same table (FINLAND = 1.50E-01).

Thus, the calculation of this example would be:

New B6 GWP tot for Finland = (4.06E-02 / 3.30E-01) x 1.5E-01 = 1.8E-02

Country	GWP tot (kg CO2 eq. per kwh)
AFRICA	7.30E-01
APAC	9.50E-01
AUSTRALIA	9.20E-01
AUSTRIA	2.30E-01
BELGIUM	2.00E-01
CHINA	1.0E+00
DENMARK	1.50E-01
EU	3.30E-01
FINLAND	1.50E-01
FRANCE	9.00E-02
GERMANY	9.90E-01
HUNGARY	3.70 -01
INDIA	1.50E+00
IRELAND	3.50E-01
ITALY	3.50E-01
LATAM	3.80E-01
NAM	4,50E-01
NETHERLANDS	3.90E-01

NORWAY	2.00E-02
POLAND	9.30E-01
PORTUGAL	2.70E-01
ROW	7.30E-01
SPAIN	2.00E-01
SWEDEN	3.00E-02
SWITZERLAND	3.00E-02
UK	2.60E-01

Source Ecoinvent 3.10.1