

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

Luma gen2

BGP705

Signify N.V.

 The Signify logo, featuring a green circular icon with a stylized 'S' followed by the word 'signify' in a lowercase, sans-serif font.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Signify N.V.
Address	High Tech Campus 48, 5656 AE Eindhoven, The Netherlands
Contact details	sustainability@signify.com
Website	https://www.signify.com/global

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR version 1.0, 1 Feb 2022
Sector	Electrical product
Category of EPD	Pre-verified 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 14025: <input checked="" type="checkbox"/> Internal certification <input type="checkbox"/> 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	LUMA GEN2 LARGE
Additional labels	BGP705
Product reference	910770215665
Place of production	Poland
Period for data	2022
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	Not Applicable

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 unit
Declared unit mass	21.0464 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	1.89E+02
GWP-total, A1-A3 (kgCO ₂ e)	1.86E+02
Secondary material, inputs (%)	48.8
Secondary material, outputs (%)	58.1
Total energy use, A1-A3 (kWh)	649
Net fresh water use, A1-A3 (m ³)	1.16

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Signify is the world leader in lighting for professionals, consumers and lighting for the Internet of Things. Our energy efficient lighting products, systems and services enable our customers to enjoy a superior quality of light, and make people’s lives safer and more comfortable, businesses more productive and cities more liveable.

For more information, please visit: <https://www.signify.com/global>

PRODUCT DESCRIPTION

Luma gen2 is the next generation of the Luma LED luminaire family, fully optimized to become your long-term lighting and innovation partner. While keeping the distinctive design characteristics of the first generation, Luma gen2 gives you the benefits of the latest technologies thanks to its future-proof System Ready architecture, use of optimized Ledgine LED and optical platform ensuring best in class lighting performance in a broad range of applications. It also offers improved serviceability. Installation has also become easier and faster, and thanks to the Service tag, you have access to all relevant documentations onsite. Also, the cable feed-through has been redesigned and access to the gear components is easy thanks to top down tool-less access. Luma gen2 also offers all connectivity and dimming options available today and thanks to being System Ready, it can also to be paired with lighting management systems such as Interact City or existing and upcoming sensor innovations. The Luma gen2 has been developed to optimize and simplify spare part repair and maintenance work using a new plug & play GearFlex module containing all electrical components in an easy to handle and accessible box inside the housing. As a company conscious about the impact of light on the environment and biodiversity, we also equipped the Luma gen2 with dedicated light recipes that help with maintaining the optimal ecosystems for bats or preserve a dark night sky.

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PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	68.86	EU , APAC
Minerals	12.41	EU , APAC
Fossil materials	18.73	EU , APAC
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	0.612

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 unit
Mass per declared unit	21.0464 kg
Functional unit	24796 Lumens over 100000 hours
Reference service life	100000

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 Signify’s manufacturing facilities are included in this stage.

The product is made of metals, plastics, and electronic components. All components are transported to Signify’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 Signify. 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

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analysed in this study. Some of the wastes 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.

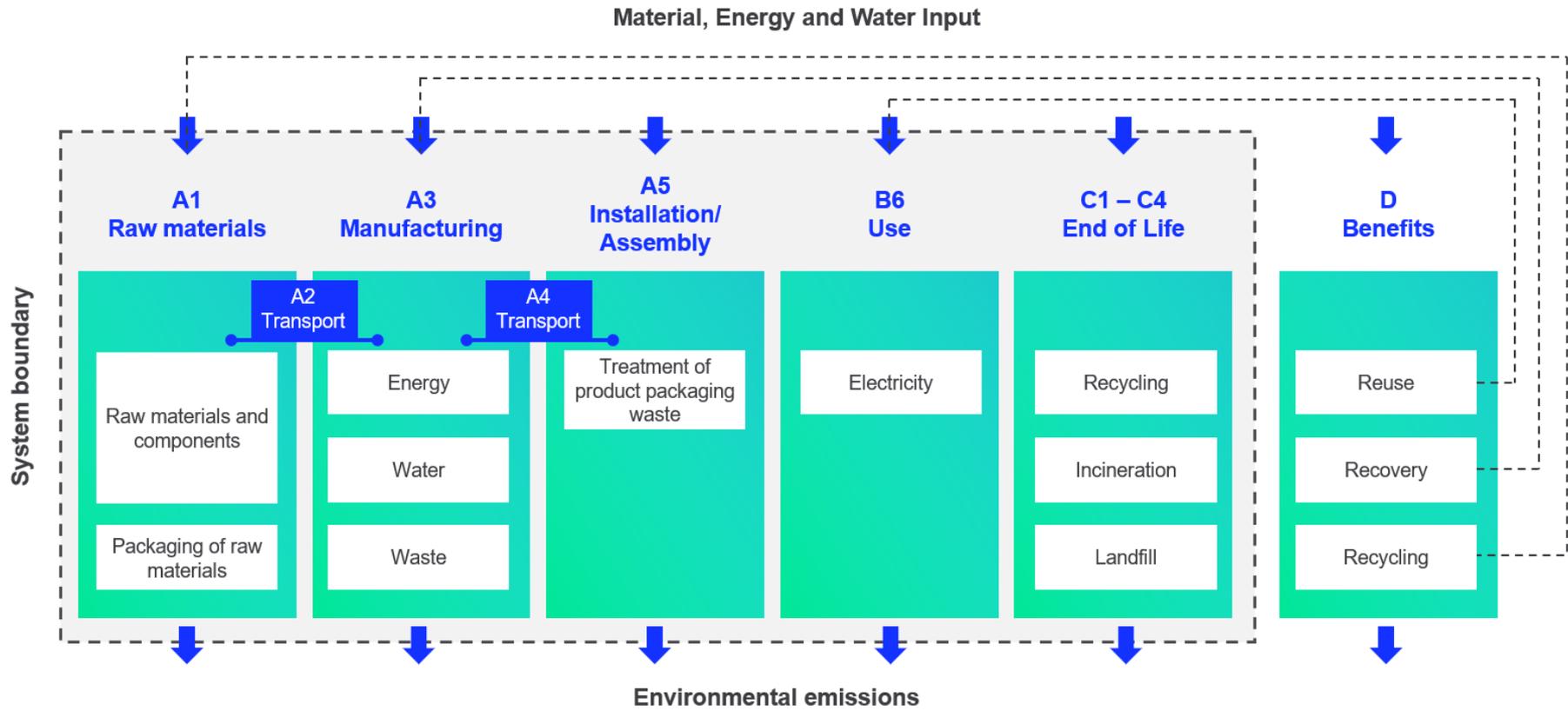
PRODUCT USE AND MAINTENANCE (B1-B7)

During the use phase, the product consumes electricity from Europe’s electricity grid mix (B6). The total power consumption of the reference product is calculated as follows: $Wattage \times Reference\ lifetime = kWh$ 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
No allocation	No allocation
No allocation	Allocated by mass or volume
Allocated by mass or volume	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 3.8 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	1,80E+02	4,28E+00	1,79E+00	1,86E+02	4,28E+00	2,68E+00	MNR	MNR	MNR	MNR	MNR	6,06E+03	MNR	MNR	2,96E-01	3,51E+00	1,97E+00	-3,20E+01
GWP – fossil	kg CO ₂ e	1,81E+02	4,27E+00	3,86E+00	1,89E+02	4,27E+00	4,73E-01	MNR	MNR	MNR	MNR	MNR	6,05E+03	MNR	MNR	2,96E-01	3,51E+00	1,97E+00	-3,20E+01
GWP – biogenic	kg CO ₂ e	-1,48E+00	0,00E+00	-2,08E+00	-3,56E+00	1,65E-03	2,21E+00	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	0,00E+00	0,00E+00	-7,89E-03
GWP – LULUC	kg CO ₂ e	2,88E-01	1,73E-03	1,27E-02	3,02E-01	1,58E-03	2,15E-05	MNR	MNR	MNR	MNR	MNR	1,41E+01	MNR	MNR	1,09E-04	3,99E-04	2,88E-04	-3,91E-03
Ozone depletion pot.	kg CFC _{1,1,1} e	9,64E-06	9,70E-07	3,75E-07	1,10E-05	9,83E-07	6,24E-09	MNR	MNR	MNR	MNR	MNR	3,07E-04	MNR	MNR	6,82E-08	3,54E-08	3,28E-08	-8,62E-07
Acidification potential	mol H ⁺ e	1,25E+00	2,98E-02	1,67E-02	1,30E+00	1,81E-02	5,36E-04	MNR	MNR	MNR	MNR	MNR	3,45E+01	MNR	MNR	1,25E-03	3,73E-03	1,67E-03	-3,60E-01
EP-freshwater ²⁾	kg Pe	1,09E-02	3,31E-05	1,73E-04	1,11E-02	3,50E-05	6,69E-07	MNR	MNR	MNR	MNR	MNR	6,41E-01	MNR	MNR	2,43E-06	1,27E-05	1,68E-05	-2,07E-03
EP-marine	kg Ne	1,94E-01	8,18E-03	6,00E-03	2,08E-01	5,38E-03	2,35E-04	MNR	MNR	MNR	MNR	MNR	4,58E+00	MNR	MNR	3,73E-04	9,82E-04	3,63E-03	-3,64E-02
EP-terrestrial	mol Ne	2,04E+00	9,05E-02	4,36E-02	2,18E+00	5,93E-02	2,42E-03	MNR	MNR	MNR	MNR	MNR	5,21E+01	MNR	MNR	4,11E-03	1,09E-02	5,59E-03	-4,25E-01
POCP (“smog”) ³⁾	kg NMVOCe	6,36E-01	2,67E-02	1,34E-02	6,76E-01	1,90E-02	6,02E-04	MNR	MNR	MNR	MNR	MNR	1,43E+01	MNR	MNR	1,32E-03	2,87E-03	2,09E-03	-1,23E-01
ADP-minerals & metals ⁴⁾	kg Sbe	8,79E-03	9,62E-06	2,72E-05	8,83E-03	1,00E-05	2,07E-07	MNR	MNR	MNR	MNR	MNR	5,65E-02	MNR	MNR	6,95E-07	2,91E-05	6,83E-07	-1,57E-03
ADP-fossil resources	MJ	2,13E+03	6,32E+01	4,73E+01	2,24E+03	6,42E+01	5,07E-01	MNR	MNR	MNR	MNR	MNR	1,29E+05	MNR	MNR	4,45E+00	3,88E+00	3,19E+00	-3,13E+02
Water use ⁵⁾	m ³ e depr.	6,28E+01	2,75E-01	1,52E+00	6,46E+01	2,87E-01	1,20E-01	MNR	MNR	MNR	MNR	MNR	3,52E+03	MNR	MNR	1,99E-02	1,84E-01	1,82E-01	-2,39E+00

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	1,33E-05	4,58E-07	3,25E-07	1,40E-05	4,92E-07	4,68E-09	MNR	MNR	MNR	MNR	MNR	1,13E-04	MNR	MNR	3,41E-08	4,40E-08	2,52E-08	-1,91E-06
Ionizing radiation ⁶⁾	kBq U235e	1,07E+01	3,00E-01	1,60E-01	1,12E+01	3,06E-01	1,72E-03	MNR	MNR	MNR	MNR	MNR	3,48E+03	MNR	MNR	2,12E-02	2,25E-02	1,70E-02	-1,86E+00
Ecotoxicity (freshwater)	CTUe	8,46E+03	5,54E+01	2,16E+02	8,73E+03	5,77E+01	3,23E+00	MNR	MNR	MNR	MNR	MNR	8,75E+04	MNR	MNR	4,00E+00	2,15E+01	1,29E+03	-9,25E+02
Human toxicity, cancer	CTUh	5,02E-07	1,53E-09	8,84E-09	5,12E-07	1,42E-09	1,59E-10	MNR	MNR	MNR	MNR	MNR	2,87E-06	MNR	MNR	9,83E-11	7,21E-10	9,87E-10	-7,80E-09
Human tox. non-cancer	CTUh	7,51E-06	5,37E-08	6,29E-08	7,62E-06	5,71E-08	7,07E-09	MNR	MNR	MNR	MNR	MNR	9,42E-05	MNR	MNR	3,96E-09	2,97E-08	5,42E-08	-1,40E-06
SQP ⁷⁾	-	7,82E+02	6,75E+01	7,67E+01	9,26E+02	7,39E+01	2,61E-01	MNR	MNR	MNR	MNR	MNR	2,33E+04	MNR	MNR	5,13E+00	6,35E+00	4,73E+00	-7,97E+01

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	1,91E+02	6,89E-01	2,84E+01	2,20E+02	7,23E-01	1,59E-02	MNR	MNR	MNR	MNR	MNR	2,62E+04	MNR	MNR	5,01E-02	5,14E-01	1,40E-01	-6,97E+00
Renew. PER as material	MJ	1,63E+01	0,00E+00	1,94E+01	3,57E+01	0,00E+00	-1,94E+01	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	-9,83E-01	-1,83E+00	0,00E+00
Total use of renew. PER	MJ	2,07E+02	6,89E-01	4,78E+01	2,55E+02	7,23E-01	-1,94E+01	MNR	MNR	MNR	MNR	MNR	2,62E+04	MNR	MNR	5,01E-02	-4,68E-01	-1,69E+00	-6,97E+00
Non-re. PER as energy	MJ	2,01E+03	6,32E+01	4,63E+01	2,12E+03	6,42E+01	5,07E-01	MNR	MNR	MNR	MNR	MNR	1,28E+05	MNR	MNR	4,45E+00	3,89E+00	3,19E+00	-3,13E+02
Non-re. PER as material	MJ	1,12E+02	0,00E+00	1,70E-01	1,12E+02	0,00E+00	-1,70E-01	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	-4,30E+01	-4,44E+01	0,00E+00
Total use of non-re. PER	MJ	2,12E+03	6,32E+01	4,65E+01	2,23E+03	6,42E+01	3,37E-01	MNR	MNR	MNR	MNR	MNR	1,28E+05	MNR	MNR	4,45E+00	-3,91E+01	-4,12E+01	-3,13E+02
Secondary materials	kg	1,03E+01	1,85E-02	1,59E+00	1,19E+01	1,78E-02	6,16E-04	MNR	MNR	MNR	MNR	MNR	1,32E+01	MNR	MNR	1,24E-03	3,82E-03	7,06E-03	1,27E+00
Renew. secondary fuels	MJ	2,69E-01	1,69E-04	1,05E-01	3,74E-01	1,80E-04	9,12E-06	MNR	MNR	MNR	MNR	MNR	1,07E-01	MNR	MNR	1,25E-05	1,91E-04	5,94E-05	-1,88E-03
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	1,12E+00	7,84E-03	3,26E-02	1,16E+00	8,31E-03	1,85E-03	MNR	MNR	MNR	MNR	MNR	1,11E+02	MNR	MNR	5,76E-04	6,41E-03	3,85E-03	-1,11E-01

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	2,88E+01	8,40E-02	5,54E-01	2,94E+01	8,51E-02	1,99E-03	MNR	MNR	MNR	MNR	MNR	4,62E+02	MNR	MNR	5,90E-03	2,47E-02	2,78E-02	-4,97E+00
Non-hazardous waste	kg	3,05E+02	1,32E+00	4,39E+00	3,10E+02	1,40E+00	1,67E+00	MNR	MNR	MNR	MNR	MNR	2,92E+04	MNR	MNR	9,69E-02	2,14E+00	8,79E+00	-1,04E+02
Radioactive waste	kg	4,48E-03	4,25E-04	8,63E-05	4,99E-03	4,29E-04	7,48E-07	MNR	MNR	MNR	MNR	MNR	9,37E-01	MNR	MNR	2,98E-05	1,42E-05	0,00E+00	-6,87E-04

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	1,09E+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	1,36E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	7,21E-01	7,21E-01	0,00E+00	0,00E+00	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	3,00E+01	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	1,77E+02	4,23E+00	3,98E+00	1,85E+02	4,23E+00	4,69E-01	MNR	MNR	MNR	MNR	MNR	5,99E+03	MNR	MNR	2,93E-01	3,50E+00	3,33E+00	-3,14E+01
Ozone depletion Pot.	kg CFC-11e	8,60E-06	7,68E-07	3,27E-07	9,69E-06	7,78E-07	5,45E-09	MNR	MNR	MNR	MNR	MNR	2,66E-04	MNR	MNR	5,40E-08	2,92E-08	2,66E-08	-7,31E-07
Acidification	kg SO ₂ e	1,05E+00	2,35E-02	1,28E-02	1,09E+00	1,41E-02	3,88E-04	MNR	MNR	MNR	MNR	MNR	2,93E+01	MNR	MNR	9,75E-04	2,94E-03	1,29E-03	-3,11E-01
Eutrophication	kg PO ₄ ³ e	3,82E-01	4,09E-03	8,66E-03	3,95E-01	3,20E-03	2,95E-04	MNR	MNR	MNR	MNR	MNR	2,25E+01	MNR	MNR	2,22E-04	1,15E-03	1,23E-02	-8,33E-02
POCP ("smog")	kg C ₂ H ₄ e	6,75E-02	7,73E-04	1,12E-03	6,94E-02	5,49E-04	1,13E-05	MNR	MNR	MNR	MNR	MNR	1,20E+00	MNR	MNR	3,80E-05	1,04E-04	3,92E-04	-1,49E-02
ADP-elements	kg Sbe	8,73E-03	9,32E-06	2,55E-05	8,77E-03	9,70E-06	1,64E-07	MNR	MNR	MNR	MNR	MNR	5,63E-02	MNR	MNR	6,73E-07	2,90E-05	6,26E-07	-1,57E-03
ADP-fossil	MJ	2,12E+03	6,32E+01	4,71E+01	2,23E+03	6,42E+01	5,07E-01	MNR	MNR	MNR	MNR	MNR	1,28E+05	MNR	MNR	4,45E+00	3,88E+00	3,19E+00	-3,13E+02

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.

$$\text{Scaled Impact} = \text{GWP}_{\text{case}} * \text{TSF}$$

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
BGP705 LED85-4S/740	7826.000	47.0	166.5	0.307	0.307	0.230	0.230	0.169	1861.6	1396.2	1396.2	1023.9
BGP705 LED85-4S/730	7826.000	50.0	156.5	0.327	0.327	0.245	0.245	0.180	1980.4	1485.3	1485.3	1089.2
BGP705 LED85-4S/727	7826.000	56.0	139.8	0.366	0.366	0.275	0.275	0.201	2218.0	1663.5	1663.5	1219.9
BGP705 LED85-4S/722	7644.000	63.0	121.3	0.412	0.412	0.309	0.309	0.226	2495.3	1871.5	1871.5	1372.4
BGP705 LED85-4S/830	7826.000	56.0	139.8	0.366	0.366	0.275	0.275	0.201	2218.0	1663.5	1663.5	1219.9
BGP705 LED90-4S/740	8190.000	50.0	163.8	0.327	0.327	0.245	0.245	0.180	1980.4	1485.3	1485.3	1089.2
BGP705 LED90-4S/730	8190.000	53.0	154.5	0.346	0.346	0.260	0.260	0.191	2099.2	1574.4	1574.4	1154.6
BGP705 LED90-4S/727	8190.000	60.0	136.5	0.392	0.392	0.294	0.294	0.216	2376.5	1782.4	1782.4	1307.1
BGP705 LED90-4S/722	8190.000	67.0	122.2	0.438	0.438	0.328	0.328	0.241	2653.7	1990.3	1990.3	1459.5
BGP705 LED90-4S/830	8190.000	60.0	136.5	0.392	0.392	0.294	0.294	0.216	2376.5	1782.4	1782.4	1307.1
BGP705 LED95-4S/740	8736.000	53.0	164.8	0.346	0.346	0.260	0.260	0.191	2099.2	1574.4	1574.4	1154.6

BGP705 LED95-4S/730	8736.000	56.0	156.0	0.366	0.366	0.275	0.275	0.201	2218.0	1663.5	1663.5	1219.9
BGP705 LED95-4S/727	8736.000	63.0	138.7	0.412	0.412	0.309	0.309	0.226	2495.3	1871.5	1871.5	1372.4
BGP705 LED95-4S/722	8736.000	71.0	123.0	0.464	0.464	0.348	0.348	0.255	2812.2	2109.1	2109.1	1546.7
BGP705 LED95-4S/830	8736.000	63.0	138.7	0.412	0.412	0.309	0.309	0.226	2495.3	1871.5	1871.5	1372.4
BGP705 LED100-4S/740	9100.000	56.0	162.5	0.366	0.366	0.275	0.275	0.201	2218.0	1663.5	1663.5	1219.9
BGP705 LED100-4S/730	9100.000	59.0	154.2	0.386	0.386	0.289	0.289	0.212	2336.9	1752.6	1752.6	1285.3
BGP705 LED100-4S/727	9100.000	67.0	135.8	0.438	0.438	0.328	0.328	0.241	2653.7	1990.3	1990.3	1459.5
BGP705 LED100-4S/722	9100.000	75.0	121.3	0.490	0.490	0.368	0.368	0.270	2970.6	2227.9	2227.9	1633.8
BGP705 LED100-4S/830	9100.000	67.0	135.8	0.438	0.438	0.328	0.328	0.241	2653.7	1990.3	1990.3	1459.5
BGP705 LED110-4S/740	10010.000	61.0	164.1	0.399	0.399	0.299	0.299	0.219	2416.1	1812.1	1812.1	1328.8
BGP705 LED110-4S/730	10010.000	65.0	154.0	0.425	0.425	0.319	0.319	0.234	2574.5	1930.9	1930.9	1416.0
BGP705 LED110-4S/727	10010.000	74.0	135.3	0.484	0.484	0.363	0.363	0.266	2931.0	2198.2	2198.2	1612.0
BGP705 LED110-4S/722	9900.000	84.0	117.9	0.549	0.549	0.412	0.412	0.302	3327.1	2495.3	2495.3	1829.9
BGP705 LED110-4S/830	10010.000	74.0	135.3	0.484	0.484	0.363	0.363	0.266	2931.0	2198.2	2198.2	1612.0
BGP705 LED120-4S/740	10920.000	67.0	163.0	0.438	0.438	0.328	0.328	0.241	2653.7	1990.3	1990.3	1459.5
BGP705 LED120-4S/730	10920.000	72.0	151.7	0.471	0.471	0.353	0.353	0.259	2851.8	2138.8	2138.8	1568.5
BGP705 LED120-4S/727	10800.000	81.0	133.3	0.529	0.529	0.397	0.397	0.291	3208.2	2406.2	2406.2	1764.5
BGP705 LED120-4S/722	10800.000	92.0	117.4	0.601	0.601	0.451	0.451	0.331	3643.9	2732.9	2732.9	2004.2
BGP705 LED120-4S/830	10800.000	81.0	133.3	0.529	0.529	0.397	0.397	0.291	3208.2	2406.2	2406.2	1764.5
BGP705 LED130-4S/740	11830.000	73.0	162.1	0.477	0.477	0.358	0.358	0.262	2891.4	2168.5	2168.5	1590.3

BGP705 LED130-4S/730	11700.000	79.0	148.1	0.516	0.516	0.387	0.387	0.284	3129.0	2346.8	2346.8	1721.0
BGP705 LED130-4S/727	11700.000	89.0	131.5	0.582	0.582	0.436	0.436	0.320	3525.1	2643.8	2643.8	1938.8
BGP705 LED130-4S/722	11700.000	102.0	114.7	0.667	0.667	0.500	0.500	0.367	4040.0	3030.0	3030.0	2222.0
BGP705 LED130-4S/830	11700.000	89.0	131.5	0.582	0.582	0.436	0.436	0.320	3525.1	2643.8	2643.8	1938.8
BGP705 LED140-4S/740	12600.000	80.0	157.5	0.523	0.523	0.392	0.392	0.288	3168.6	2376.5	2376.5	1742.7
BGP705 LED140-4S/730	12600.000	85.0	148.2	0.556	0.556	0.417	0.417	0.306	3366.7	2525.0	2525.0	1851.7
BGP705 LED140-4S/727	12600.000	97.0	129.9	0.634	0.634	0.475	0.475	0.349	3842.0	2881.5	2881.5	2113.1
BGP705 LED140-4S/722	12600.000	106.0	118.9	0.693	0.693	0.520	0.520	0.381	4198.4	3148.8	3148.8	2309.1
BGP705 LED140-4S/830	12600.000	97.0	129.9	0.634	0.634	0.475	0.475	0.349	3842.0	2881.5	2881.5	2113.1
BGP705 LED150-4S/740	13500.000	83.0	162.7	0.542	0.542	0.407	0.407	0.298	3287.5	2465.6	2465.6	1808.1
BGP705 LED150-4S/730	13500.000	89.0	151.7	0.582	0.582	0.436	0.436	0.320	3525.1	2643.8	2643.8	1938.8
BGP705 LED150-4S/727	13500.000	100.0	135.0	0.654	0.654	0.490	0.490	0.359	3960.8	2970.6	2970.6	2178.4
BGP705 LED150-4S/722	13500.000	114.0	118.4	0.745	0.745	0.559	0.559	0.410	4515.3	3386.5	3386.5	2483.4
BGP705 LED150-4S/830	13500.000	100.0	135.0	0.654	0.654	0.490	0.490	0.359	3960.8	2970.6	2970.6	2178.4
BGP705 LED160-4S/740	14400.000	89.0	161.8	0.582	0.582	0.436	0.436	0.320	3525.1	2643.8	2643.8	1938.8
BGP705 LED160-4S/730	14400.000	95.0	151.6	0.621	0.621	0.466	0.466	0.342	3762.7	2822.1	2822.1	2069.5
BGP705 LED160-4S/727	14400.000	108.0	133.3	0.706	0.706	0.529	0.529	0.388	4277.6	3208.2	3208.2	2352.7
BGP705 LED160-4S/722	14400.000	122.0	118.0	0.797	0.797	0.598	0.598	0.439	4832.2	3624.1	3624.1	2657.7
BGP705 LED160-4S/830	14400.000	108.0	133.3	0.706	0.706	0.529	0.529	0.388	4277.6	3208.2	3208.2	2352.7
BGP705 LED170-4S/740	15300.000	95.0	161.1	0.621	0.621	0.466	0.466	0.342	3762.7	2822.1	2822.1	2069.5

BGP705 LED170-4S/730	15300.000	102.0	150.0	0.667	0.667	0.500	0.500	0.367	4040.0	3030.0	3030.0	2222.0
BGP705 LED170-4S/727	15300.000	116.0	131.9	0.758	0.758	0.569	0.569	0.417	4594.5	3445.9	3445.9	2527.0
BGP705 LED170-4S/722	15300.000	130.0	117.7	0.850	0.850	0.637	0.637	0.467	5149.0	3861.8	3861.8	2832.0
BGP705 LED170-4S/830	15300.000	116.0	131.9	0.758	0.758	0.569	0.569	0.417	4594.5	3445.9	3445.9	2527.0
BGP705 LED180-4S/740	16200.000	102.0	158.8	0.667	0.667	0.500	0.500	0.367	4040.0	3030.0	3030.0	2222.0
BGP705 LED180-4S/730	16200.000	108.0	150.0	0.706	0.706	0.529	0.529	0.388	4277.6	3208.2	3208.2	2352.7
BGP705 LED180-4S/727	16200.000	124.0	130.6	0.810	0.810	0.608	0.608	0.446	4911.4	3683.5	3683.5	2701.3
BGP705 LED180-4S/722	16020.000	140.0	114.4	0.915	0.915	0.686	0.686	0.503	5545.1	4158.8	4158.8	3049.8
BGP705 LED180-4S/830	16200.000	124.0	130.6	0.810	0.810	0.608	0.608	0.446	4911.4	3683.5	3683.5	2701.3
BGP705 LED190-4S/740	17100.000	106.0	161.3	0.693	0.693	0.520	0.520	0.381	4198.4	3148.8	3148.8	2309.1
BGP705 LED190-4S/730	17100.000	114.0	150.0	0.745	0.745	0.559	0.559	0.410	4515.3	3386.5	3386.5	2483.4
BGP705 LED190-4S/727	17100.000	128.0	133.6	0.837	0.837	0.627	0.627	0.460	5069.8	3802.4	3802.4	2788.4
BGP705 LED190-4S/722	16910.000	144.0	117.4	0.941	0.941	0.706	0.706	0.518	5703.5	4277.6	4277.6	3136.9
BGP705 LED190-4S/830	17100.000	128.0	133.6	0.837	0.837	0.627	0.627	0.460	5069.8	3802.4	3802.4	2788.4
BGP705 LED200-4S/740	18000.000	112.0	160.7	0.732	0.732	0.549	0.549	0.403	4436.1	3327.1	3327.1	2439.8
BGP705 LED200-4S/730	18000.000	120.0	150.0	0.784	0.784	0.588	0.588	0.431	4752.9	3564.7	3564.7	2614.1
BGP705 LED200-4S/727	18000.000	136.0	132.4	0.889	0.889	0.667	0.667	0.489	5386.7	4040.0	4040.0	2962.7
BGP705 LED200-4S/722	17800.000	152.0	117.1	0.993	0.993	0.745	0.745	0.546	6020.4	4515.3	4515.3	3311.2
BGP705 LED200-4S/830	18000.000	136.0	132.4	0.889	0.889	0.667	0.667	0.489	5386.7	4040.0	4040.0	2962.7
BGP705 LED210-4S/740	18900.000	118.0	160.2	0.771	0.771	0.578	0.578	0.424	4673.7	3505.3	3505.3	2570.5

BGP705 LED210-4S/730	18900.000	126.0	150.0	0.824	0.824	0.618	0.618	0.453	4990.6	3742.9	3742.9	2744.8
BGP705 LED210-4S/727	18900.000	142.0	133.1	0.928	0.928	0.696	0.696	0.510	5624.3	4218.2	4218.2	3093.4
BGP705 LED210-4S/722	18690.000	162.0	115.4	1.059	1.059	0.794	0.794	0.582	6416.5	4812.4	4812.4	3529.1
BGP705 LED210-4S/830	18900.000	142.0	133.1	0.928	0.928	0.696	0.696	0.510	5624.3	4218.2	4218.2	3093.4
BGP705 LED220-4S/740	19800.000	124.0	159.7	0.810	0.810	0.608	0.608	0.446	4911.4	3683.5	3683.5	2701.3
BGP705 LED220-4S/730	19800.000	132.0	150.0	0.863	0.863	0.647	0.647	0.475	5228.2	3921.2	3921.2	2875.5
BGP705 LED220-4S/727	19580.000	150.0	130.5	0.980	0.980	0.735	0.735	0.539	5941.2	4455.9	4455.9	3267.6
BGP705 LED220-4S/722	19580.000	170.0	115.2	1.111	1.111	0.833	0.833	0.611	6733.3	5050.0	5050.0	3703.3
BGP705 LED220-4S/830	19580.000	150.0	130.5	0.980	0.980	0.735	0.735	0.539	5941.2	4455.9	4455.9	3267.6
BGP705 LED230-4S/740	20700.000	128.0	161.7	0.837	0.837	0.627	0.627	0.460	5069.8	3802.4	3802.4	2788.4
BGP705 LED230-4S/730	20700.000	136.0	152.2	0.889	0.889	0.667	0.667	0.489	5386.7	4040.0	4040.0	2962.7
BGP705 LED230-4S/727	20470.000	154.0	132.9	1.007	1.007	0.755	0.755	0.554	6099.6	4574.7	4574.7	3354.8
BGP705 LED230-4S/722	20470.000	174.0	117.6	1.137	1.137	0.853	0.853	0.625	6891.8	5168.8	5168.8	3790.5
BGP705 LED230-4S/830	20470.000	154.0	132.9	1.007	1.007	0.755	0.755	0.554	6099.6	4574.7	4574.7	3354.8
BGP705 LED240-4S/740	21600.000	134.0	161.2	0.876	0.876	0.657	0.657	0.482	5307.5	3980.6	3980.6	2919.1
BGP705 LED240-4S/730	21600.000	142.0	152.1	0.928	0.928	0.696	0.696	0.510	5624.3	4218.2	4218.2	3093.4
BGP705 LED240-4S/727	21360.000	162.0	131.9	1.059	1.059	0.794	0.794	0.582	6416.5	4812.4	4812.4	3529.1
BGP705 LED240-4S/722	21360.000	182.0	117.4	1.190	1.190	0.892	0.892	0.654	7208.6	5406.5	5406.5	3964.7
BGP705 LED240-4S/830	21360.000	162.0	131.9	1.059	1.059	0.794	0.794	0.582	6416.5	4812.4	4812.4	3529.1
BGP705 LED250-4S/740	22500.000	140.0	160.7	0.915	0.915	0.686	0.686	0.503	5545.1	4158.8	4158.8	3049.8

BGP705 LED250-4S/730	22250.000	150.0	148.3	0.980	0.980	0.735	0.735	0.539	5941.2	4455.9	4455.9	3267.6
BGP705 LED250-4S/727	22250.000	170.0	130.9	1.111	1.111	0.833	0.833	0.611	6733.3	5050.0	5050.0	3703.3
BGP705 LED250-4S/722	22250.000	192.0	115.9	1.255	1.255	0.941	0.941	0.690	7604.7	5703.5	5703.5	4182.6
BGP705 LED250-4S/830	22250.000	170.0	130.9	1.111	1.111	0.833	0.833	0.611	6733.3	5050.0	5050.0	3703.3
BGP705 LED260-4S/740	23400.000	144.0	162.5	0.941	0.941	0.706	0.706	0.518	5703.5	4277.6	4277.6	3136.9
BGP705 LED260-4S/730	23140.000	152.0	152.2	0.993	0.993	0.745	0.745	0.546	6020.4	4515.3	4515.3	3311.2
BGP705 LED260-4S/727	23140.000	172.0	134.5	1.124	1.124	0.843	0.843	0.618	6812.5	5109.4	5109.4	3746.9
BGP705 LED260-4S/722	23140.000	194.0	119.3	1.268	1.268	0.951	0.951	0.697	7683.9	5762.9	5762.9	4226.2
BGP705 LED260-4S/830	23140.000	172.0	134.5	1.124	1.124	0.843	0.843	0.618	6812.5	5109.4	5109.4	3746.9
BGP705 LED280-4S/740	24920.000	156.0	159.7	1.020	1.020	0.765	0.765	0.561	6178.8	4634.1	4634.1	3398.4
BGP705 LED280-4S/730	24920.000	166.0	150.1	1.085	1.085	0.814	0.814	0.597	6574.9	4931.2	4931.2	3616.2
BGP705 LED280-4S/727	24920.000	188.0	132.6	1.229	1.229	0.922	0.922	0.676	7446.3	5584.7	5584.7	4095.5
BGP705 LED280-4S/722	24640.000	210.0	117.3	1.373	1.373	1.029	1.029	0.755	8317.6	6238.2	6238.2	4574.7
BGP705 LED280-4S/830	24920.000	188.0	132.6	1.229	1.229	0.922	0.922	0.676	7446.3	5584.7	5584.7	4095.5
BGP705 LED300-4S/740	26700.000	168.0	158.9	1.098	1.098	0.824	0.824	0.604	6654.1	4990.6	4990.6	3659.8
BGP705 LED300-4S/730	26700.000	178.0	150.0	1.163	1.163	0.873	0.873	0.640	7050.2	5287.6	5287.6	3877.6
BGP705 LED300-4S/727	26400.000	200.0	132.0	1.307	1.307	0.980	0.980	0.719	7921.6	5941.2	5941.2	4356.9
BGP705 LED300-4S/722	26400.000	225.0	117.3	1.471	1.471	1.103	1.103	0.809	8911.8	6683.8	6683.8	4901.5
BGP705 LED300-4S/830	26400.000	200.0	132.0	1.307	1.307	0.980	0.980	0.719	7921.6	5941.2	5941.2	4356.9
BGP705 LED320-4S/740	28480.000	180.0	158.2	1.176	1.176	0.882	0.882	0.647	7129.4	5347.1	5347.1	3921.2

BGP705 LED320-4S/730	28480.000	192.0	148.3	1.255	1.255	0.941	0.941	0.690	7604.7	5703.5	5703.5	4182.6
BGP705 LED320-4S/727	28160.000	215.0	131.0	1.405	1.405	1.054	1.054	0.773	8515.7	6386.8	6386.8	4683.6
BGP705 LED320-4S/722	27840.000	245.0	113.6	1.601	1.601	1.201	1.201	0.881	9703.9	7277.9	7277.9	5337.2
BGP705 LED320-4S/830	28160.000	215.0	131.0	1.405	1.405	1.054	1.054	0.773	8515.7	6386.8	6386.8	4683.6
BGP705 LED340-4S/740	30260.000	188.0	161.0	1.229	1.229	0.922	0.922	0.676	7446.3	5584.7	5584.7	4095.5
BGP705 LED340-4S/730	30260.000	200.0	151.3	1.307	1.307	0.980	0.980	0.719	7921.6	5941.2	5941.2	4356.9
BGP705 LED340-4S/727	29920.000	225.0	133.0	1.471	1.471	1.103	1.103	0.809	8911.8	6683.8	6683.8	4901.5
BGP705 LED340-4S/722	29580.000	255.0	116.0	1.667	1.667	1.250	1.250	0.917	10100.0	7575.0	7575.0	5555.0
BGP705 LED340-4S/830	29920.000	225.0	133.0	1.471	1.471	1.103	1.103	0.809	8911.8	6683.8	6683.8	4901.5
BGP705 LED350-4S/740	31150.000	194.0	160.6	1.268	1.268	0.951	0.951	0.697	7683.9	5762.9	5762.9	4226.2
BGP705 LED350-4S/730	30800.000	205.0	150.2	1.340	1.340	1.005	1.005	0.737	8119.6	6089.7	6089.7	4465.8
BGP705 LED350-4S/727	30800.000	235.0	131.1	1.536	1.536	1.152	1.152	0.845	9307.8	6980.9	6980.9	5119.3
BGP705 LED350-4S/722	30450.000	265.0	114.9	1.732	1.732	1.299	1.299	0.953	10496.1	7872.1	7872.1	5772.8
BGP705 LED350-4S/830	30800.000	235.0	131.1	1.536	1.536	1.152	1.152	0.845	9307.8	6980.9	6980.9	5119.3
BGP705 LED400-4S/740	35200.000	225.0	156.4	1.471	1.471	1.103	1.103	0.809	8911.8	6683.8	6683.8	4901.5
BGP705 LED400-4S/730	35200.000	240.0	146.7	1.569	1.569	1.176	1.176	0.863	9505.9	7129.4	7129.4	5228.2
BGP705 LED400-4S/727	34800.000	270.0	128.9	1.765	1.765	1.324	1.324	0.971	10694.1	8020.6	8020.6	5881.8
BGP705 LED400-4S/722	34400.000	305.0	112.8	1.993	1.993	1.495	1.495	1.096	12080.4	9060.3	9060.3	6644.2
BGP705 LED400-4S/830	34800.000	270.0	128.9	1.765	1.765	1.324	1.324	0.971	10694.1	8020.6	8020.6	5881.8
BGP705 LED450-4S/740	39150.000	255.0	153.5	1.667	1.667	1.250	1.250	0.917	10100.0	7575.0	7575.0	5555.0

BGP705 LED450-4S/730	39150.000	270.0	145.0	1.765	1.765	1.324	1.324	0.971	10694.1	8020.6	8020.6	5881.8
BGP705 LED450-4S/727	38700.000	310.0	124.8	2.026	2.026	1.520	1.520	1.114	12278.4	9208.8	9208.8	6753.1
BGP705 LED450-4S/722	37800.000	350.0	108.0	2.288	2.288	1.716	1.716	1.258	13862.7	10397.1	10397.1	7624.5
BGP705 LED450-4S/830	38700.000	310.0	124.8	2.026	2.026	1.520	1.520	1.114	12278.4	9208.8	9208.8	6753.1
BGP705 LED460-4S/722	38640.000	360.0	107.3	2.353	2.353	1.765	1.765	1.294	14258.8	10694.1	10694.1	7842.4
BGP705 LED480-4S/830	40800.000	330.0	123.6	2.157	2.157	1.618	1.618	1.186	13070.6	9802.9	9802.9	7188.8
BGP705 LED500-4S/740	43500.000	285.0	152.6	1.863	1.863	1.397	1.397	1.025	11288.2	8466.2	8466.2	6208.5
BGP705 LED500-4S/730	43000.000	305.0	141.0	1.993	1.993	1.495	1.495	1.096	12080.4	9060.3	9060.3	6644.2
BGP705 LED500-4S/727	42000.000	350.0	120.0	2.288	2.288	1.716	1.716	1.258	13862.7	10397.1	10397.1	7624.5
BGP705 LED500-4S/830	42500.000	350.0	121.4	2.288	2.288	1.716	1.716	1.258	13862.7	10397.1	10397.1	7624.5
BGP705 LED550-4S/740	48160.000	320.0	150.5	2.092	2.092	1.569	1.569	1.150	12674.5	9505.9	9505.9	6971.0
BGP705 LED550-4S/730	47600.000	340.0	140.0	2.222	2.222	1.667	1.667	1.222	13466.7	10100.0	10100.0	7406.7
BGP705 LED580-4S/730	48720.000	365.0	133.5	2.386	2.386	1.789	1.789	1.312	14456.9	10842.6	10842.6	7951.3
BGP705 LED590-4S/740	51000.000	345.0	147.8	2.255	2.255	1.691	1.691	1.240	13664.7	10248.5	10248.5	7515.6
BGP705 LED600-4S/740	50400.000	355.0	142.0	2.320	2.320	1.740	1.740	1.276	14060.8	10545.6	10545.6	7733.4
BGP705 LED600-4S/730	49800.000	380.0	131.1	2.484	2.484	1.863	1.863	1.366	15051.0	11288.2	11288.2	8278.0
BGP705 LED630-4S/740	53760.000	375.0	143.4	2.451	2.451	1.838	1.838	1.348	14852.9	11139.7	11139.7	8169.1

* 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
BGP705 LED85-4S/740	7826	47	166.5	0.307	0.014	0.010	0.010	0.008	83.3	62.4	62.4	45.8
BGP705 LED85-4S/730	7826	50	156.5	0.327	0.015	0.011	0.011	0.008	88.6	66.4	66.4	48.7

BGP705 LED85-4S/727	7826	56	139.8	0.366	0.016	0.012	0.012	0.009	99.2	74.4	74.4	54.6
BGP705 LED85-4S/722	7644	63	121.3	0.412	0.019	0.014	0.014	0.010	114.3	85.7	85.7	62.8
BGP705 LED85-4S/830	7826	56	139.8	0.366	0.016	0.012	0.012	0.009	99.2	74.4	74.4	54.6
BGP705 LED90-4S/740	8190	50	163.8	0.327	0.014	0.010	0.010	0.008	84.6	63.5	63.5	46.5
BGP705 LED90-4S/730	8190	53	154.5	0.346	0.015	0.011	0.011	0.008	89.7	67.3	67.3	49.3
BGP705 LED90-4S/727	8190	60	136.5	0.392	0.017	0.013	0.013	0.009	101.6	76.2	76.2	55.9
BGP705 LED90-4S/722	8190	67	122.2	0.438	0.019	0.014	0.014	0.010	113.4	85.1	85.1	62.4
BGP705 LED90-4S/830	8190	60	136.5	0.392	0.017	0.013	0.013	0.009	101.6	76.2	76.2	55.9
BGP705 LED95-4S/740	8736	53	164.8	0.346	0.014	0.010	0.010	0.008	84.1	63.1	63.1	46.3
BGP705 LED95-4S/730	8736	56	156.0	0.366	0.015	0.011	0.011	0.008	88.9	66.6	66.6	48.9
BGP705 LED95-4S/727	8736	63	138.7	0.412	0.016	0.012	0.012	0.009	100.0	75.0	75.0	55.0
BGP705 LED95-4S/722	8736	71	123.0	0.464	0.019	0.014	0.014	0.010	112.7	84.5	84.5	62.0
BGP705 LED95-4S/830	8736	63	138.7	0.412	0.016	0.012	0.012	0.009	100.0	75.0	75.0	55.0
BGP705 LED100-4S/740	9100	56	162.5	0.366	0.014	0.011	0.011	0.008	85.3	64.0	64.0	46.9
BGP705 LED100-4S/730	9100	59	154.2	0.386	0.015	0.011	0.011	0.008	89.9	67.4	67.4	49.4
BGP705 LED100-4S/727	9100	67	135.8	0.438	0.017	0.013	0.013	0.009	102.1	76.5	76.5	56.1
BGP705 LED100-4S/722	9100	75	121.3	0.490	0.019	0.014	0.014	0.010	114.3	85.7	85.7	62.8
BGP705 LED100-4S/830	9100	67	135.8	0.438	0.017	0.013	0.013	0.009	102.1	76.5	76.5	56.1
BGP705 LED110-4S/740	10010	61	164.1	0.399	0.014	0.010	0.010	0.008	84.5	63.4	63.4	46.5
BGP705 LED110-4S/730	10010	65	154.0	0.425	0.015	0.011	0.011	0.008	90.0	67.5	67.5	49.5

BGP705 LED110-4S/727	10010	74	135.3	0.484	0.017	0.013	0.013	0.009	102.5	76.9	76.9	56.4
BGP705 LED110-4S/722	9900	84	117.9	0.549	0.019	0.015	0.015	0.011	117.6	88.2	88.2	64.7
BGP705 LED110-4S/830	10010	74	135.3	0.484	0.017	0.013	0.013	0.009	102.5	76.9	76.9	56.4
BGP705 LED120-4S/740	10920	67	163.0	0.438	0.014	0.011	0.011	0.008	85.1	63.8	63.8	46.8
BGP705 LED120-4S/730	10920	72	151.7	0.471	0.015	0.011	0.011	0.008	91.4	68.6	68.6	50.3
BGP705 LED120-4S/727	10800	81	133.3	0.529	0.017	0.013	0.013	0.009	104.0	78.0	78.0	57.2
BGP705 LED120-4S/722	10800	92	117.4	0.601	0.019	0.015	0.015	0.011	118.1	88.6	88.6	64.9
BGP705 LED120-4S/830	10800	81	133.3	0.529	0.017	0.013	0.013	0.009	104.0	78.0	78.0	57.2
BGP705 LED130-4S/740	11830	73	162.1	0.477	0.014	0.011	0.011	0.008	85.5	64.2	64.2	47.0
BGP705 LED130-4S/730	11700	79	148.1	0.516	0.015	0.012	0.012	0.008	93.6	70.2	70.2	51.5
BGP705 LED130-4S/727	11700	89	131.5	0.582	0.017	0.013	0.013	0.010	105.5	79.1	79.1	58.0
BGP705 LED130-4S/722	11700	102	114.7	0.667	0.020	0.015	0.015	0.011	120.9	90.6	90.6	66.5
BGP705 LED130-4S/830	11700	89	131.5	0.582	0.017	0.013	0.013	0.010	105.5	79.1	79.1	58.0
BGP705 LED140-4S/740	12600	80	157.5	0.523	0.015	0.011	0.011	0.008	88.0	66.0	66.0	48.4
BGP705 LED140-4S/730	12600	85	148.2	0.556	0.015	0.012	0.012	0.008	93.5	70.1	70.1	51.4
BGP705 LED140-4S/727	12600	97	129.9	0.634	0.018	0.013	0.013	0.010	106.7	80.0	80.0	58.7
BGP705 LED140-4S/722	12600	106	118.9	0.693	0.019	0.014	0.014	0.011	116.6	87.5	87.5	64.1
BGP705 LED140-4S/830	12600	97	129.9	0.634	0.018	0.013	0.013	0.010	106.7	80.0	80.0	58.7
BGP705 LED150-4S/740	13500	83	162.7	0.542	0.014	0.011	0.011	0.008	85.2	63.9	63.9	46.9
BGP705 LED150-4S/730	13500	89	151.7	0.582	0.015	0.011	0.011	0.008	91.4	68.5	68.5	50.3

BGP705 LED150-4S/727	13500	100	135.0	0.654	0.017	0.013	0.013	0.009	102.7	77.0	77.0	56.5
BGP705 LED150-4S/722	13500	114	118.4	0.745	0.019	0.014	0.014	0.011	117.1	87.8	87.8	64.4
BGP705 LED150-4S/830	13500	100	135.0	0.654	0.017	0.013	0.013	0.009	102.7	77.0	77.0	56.5
BGP705 LED160-4S/740	14400	89	161.8	0.582	0.014	0.011	0.011	0.008	85.7	64.3	64.3	47.1
BGP705 LED160-4S/730	14400	95	151.6	0.621	0.015	0.011	0.011	0.008	91.5	68.6	68.6	50.3
BGP705 LED160-4S/727	14400	108	133.3	0.706	0.017	0.013	0.013	0.009	104.0	78.0	78.0	57.2
BGP705 LED160-4S/722	14400	122	118.0	0.797	0.019	0.015	0.015	0.011	117.4	88.1	88.1	64.6
BGP705 LED160-4S/830	14400	108	133.3	0.706	0.017	0.013	0.013	0.009	104.0	78.0	78.0	57.2
BGP705 LED170-4S/740	15300	95	161.1	0.621	0.014	0.011	0.011	0.008	86.1	64.6	64.6	47.3
BGP705 LED170-4S/730	15300	102	150.0	0.667	0.015	0.011	0.011	0.008	92.4	69.3	69.3	50.8
BGP705 LED170-4S/727	15300	116	131.9	0.758	0.017	0.013	0.013	0.010	105.1	78.8	78.8	57.8
BGP705 LED170-4S/722	15300	130	117.7	0.850	0.019	0.015	0.015	0.011	117.8	88.3	88.3	64.8
BGP705 LED170-4S/830	15300	116	131.9	0.758	0.017	0.013	0.013	0.010	105.1	78.8	78.8	57.8
BGP705 LED180-4S/740	16200	102	158.8	0.667	0.014	0.011	0.011	0.008	87.3	65.5	65.5	48.0
BGP705 LED180-4S/730	16200	108	150.0	0.706	0.015	0.011	0.011	0.008	92.4	69.3	69.3	50.8
BGP705 LED180-4S/727	16200	124	130.6	0.810	0.018	0.013	0.013	0.010	106.1	79.6	79.6	58.4
BGP705 LED180-4S/722	16020	140	114.4	0.915	0.020	0.015	0.015	0.011	121.1	90.9	90.9	66.6
BGP705 LED180-4S/830	16200	124	130.6	0.810	0.018	0.013	0.013	0.010	106.1	79.6	79.6	58.4
BGP705 LED190-4S/740	17100	106	161.3	0.693	0.014	0.011	0.011	0.008	85.9	64.4	64.4	47.3
BGP705 LED190-4S/730	17100	114	150.0	0.745	0.015	0.011	0.011	0.008	92.4	69.3	69.3	50.8

BGP705 LED190-4S/727	17100	128	133.6	0.837	0.017	0.013	0.013	0.009	103.8	77.8	77.8	57.1
BGP705 LED190-4S/722	16910	144	117.4	0.941	0.019	0.015	0.015	0.011	118.1	88.5	88.5	64.9
BGP705 LED190-4S/830	17100	128	133.6	0.837	0.017	0.013	0.013	0.009	103.8	77.8	77.8	57.1
BGP705 LED200-4S/740	18000	112	160.7	0.732	0.014	0.011	0.011	0.008	86.3	64.7	64.7	47.4
BGP705 LED200-4S/730	18000	120	150.0	0.784	0.015	0.011	0.011	0.008	92.4	69.3	69.3	50.8
BGP705 LED200-4S/727	18000	136	132.4	0.889	0.017	0.013	0.013	0.010	104.7	78.6	78.6	57.6
BGP705 LED200-4S/722	17800	152	117.1	0.993	0.020	0.015	0.015	0.011	118.4	88.8	88.8	65.1
BGP705 LED200-4S/830	18000	136	132.4	0.889	0.017	0.013	0.013	0.010	104.7	78.6	78.6	57.6
BGP705 LED210-4S/740	18900	118	160.2	0.771	0.014	0.011	0.011	0.008	86.6	64.9	64.9	47.6
BGP705 LED210-4S/730	18900	126	150.0	0.824	0.015	0.011	0.011	0.008	92.4	69.3	69.3	50.8
BGP705 LED210-4S/727	18900	142	133.1	0.928	0.017	0.013	0.013	0.009	104.2	78.1	78.1	57.3
BGP705 LED210-4S/722	18690	162	115.4	1.059	0.020	0.015	0.015	0.011	120.2	90.1	90.1	66.1
BGP705 LED210-4S/830	18900	142	133.1	0.928	0.017	0.013	0.013	0.009	104.2	78.1	78.1	57.3
BGP705 LED220-4S/740	19800	124	159.7	0.810	0.014	0.011	0.011	0.008	86.8	65.1	65.1	47.7
BGP705 LED220-4S/730	19800	132	150.0	0.863	0.015	0.011	0.011	0.008	92.4	69.3	69.3	50.8
BGP705 LED220-4S/727	19580	150	130.5	0.980	0.018	0.013	0.013	0.010	106.2	79.7	79.7	58.4
BGP705 LED220-4S/722	19580	170	115.2	1.111	0.020	0.015	0.015	0.011	120.4	90.3	90.3	66.2
BGP705 LED220-4S/830	19580	150	130.5	0.980	0.018	0.013	0.013	0.010	106.2	79.7	79.7	58.4
BGP705 LED230-4S/740	20700	128	161.7	0.837	0.014	0.011	0.011	0.008	85.7	64.3	64.3	47.1
BGP705 LED230-4S/730	20700	136	152.2	0.889	0.015	0.011	0.011	0.008	91.1	68.3	68.3	50.1

BGP705 LED230-4S/727	20470	154	132.9	1.007	0.017	0.013	0.013	0.009	104.3	78.2	78.2	57.4
BGP705 LED230-4S/722	20470	174	117.6	1.137	0.019	0.015	0.015	0.011	117.8	88.4	88.4	64.8
BGP705 LED230-4S/830	20470	154	132.9	1.007	0.017	0.013	0.013	0.009	104.3	78.2	78.2	57.4
BGP705 LED240-4S/740	21600	134	161.2	0.876	0.014	0.011	0.011	0.008	86.0	64.5	64.5	47.3
BGP705 LED240-4S/730	21600	142	152.1	0.928	0.015	0.011	0.011	0.008	91.1	68.4	68.4	50.1
BGP705 LED240-4S/727	21360	162	131.9	1.059	0.017	0.013	0.013	0.010	105.1	78.9	78.9	57.8
BGP705 LED240-4S/722	21360	182	117.4	1.190	0.019	0.015	0.015	0.011	118.1	88.6	88.6	65.0
BGP705 LED240-4S/830	21360	162	131.9	1.059	0.017	0.013	0.013	0.010	105.1	78.9	78.9	57.8
BGP705 LED250-4S/740	22500	140	160.7	0.915	0.014	0.011	0.011	0.008	86.3	64.7	64.7	47.4
BGP705 LED250-4S/730	22250	150	148.3	0.980	0.015	0.012	0.012	0.008	93.5	70.1	70.1	51.4
BGP705 LED250-4S/727	22250	170	130.9	1.111	0.017	0.013	0.013	0.010	105.9	79.4	79.4	58.3
BGP705 LED250-4S/722	22250	192	115.9	1.255	0.020	0.015	0.015	0.011	119.6	89.7	89.7	65.8
BGP705 LED250-4S/830	22250	170	130.9	1.111	0.017	0.013	0.013	0.010	105.9	79.4	79.4	58.3
BGP705 LED260-4S/740	23400	144	162.5	0.941	0.014	0.011	0.011	0.008	85.3	64.0	64.0	46.9
BGP705 LED260-4S/730	23140	152	152.2	0.993	0.015	0.011	0.011	0.008	91.1	68.3	68.3	50.1
BGP705 LED260-4S/727	23140	172	134.5	1.124	0.017	0.013	0.013	0.009	103.0	77.3	77.3	56.7
BGP705 LED260-4S/722	23140	194	119.3	1.268	0.019	0.014	0.014	0.011	116.2	87.2	87.2	63.9
BGP705 LED260-4S/830	23140	172	134.5	1.124	0.017	0.013	0.013	0.009	103.0	77.3	77.3	56.7
BGP705 LED280-4S/740	24920	156	159.7	1.020	0.014	0.011	0.011	0.008	86.8	65.1	65.1	47.7
BGP705 LED280-4S/730	24920	166	150.1	1.085	0.015	0.011	0.011	0.008	92.3	69.3	69.3	50.8

BGP705 LED280-4S/727	24920	188	132.6	1.229	0.017	0.013	0.013	0.009	104.6	78.4	78.4	57.5
BGP705 LED280-4S/722	24640	210	117.3	1.373	0.019	0.015	0.015	0.011	118.1	88.6	88.6	65.0
BGP705 LED280-4S/830	24920	188	132.6	1.229	0.017	0.013	0.013	0.009	104.6	78.4	78.4	57.5
BGP705 LED300-4S/740	26700	168	158.9	1.098	0.014	0.011	0.011	0.008	87.2	65.4	65.4	48.0
BGP705 LED300-4S/730	26700	178	150.0	1.163	0.015	0.011	0.011	0.008	92.4	69.3	69.3	50.8
BGP705 LED300-4S/727	26400	200	132.0	1.307	0.017	0.013	0.013	0.010	105.0	78.8	78.8	57.8
BGP705 LED300-4S/722	26400	225	117.3	1.471	0.019	0.015	0.015	0.011	118.1	88.6	88.6	65.0
BGP705 LED300-4S/830	26400	200	132.0	1.307	0.017	0.013	0.013	0.010	105.0	78.8	78.8	57.8
BGP705 LED320-4S/740	28480	180	158.2	1.176	0.014	0.011	0.011	0.008	87.6	65.7	65.7	48.2
BGP705 LED320-4S/730	28480	192	148.3	1.255	0.015	0.012	0.012	0.008	93.5	70.1	70.1	51.4
BGP705 LED320-4S/727	28160	215	131.0	1.405	0.017	0.013	0.013	0.010	105.8	79.4	79.4	58.2
BGP705 LED320-4S/722	27840	245	113.6	1.601	0.020	0.015	0.015	0.011	122.0	91.5	91.5	67.1
BGP705 LED320-4S/830	28160	215	131.0	1.405	0.017	0.013	0.013	0.010	105.8	79.4	79.4	58.2
BGP705 LED340-4S/740	30260	188	161.0	1.229	0.014	0.011	0.011	0.008	86.1	64.6	64.6	47.4
BGP705 LED340-4S/730	30260	200	151.3	1.307	0.015	0.011	0.011	0.008	91.6	68.7	68.7	50.4
BGP705 LED340-4S/727	29920	225	133.0	1.471	0.017	0.013	0.013	0.009	104.2	78.2	78.2	57.3
BGP705 LED340-4S/722	29580	255	116.0	1.667	0.020	0.015	0.015	0.011	119.5	89.6	89.6	65.7
BGP705 LED340-4S/830	29920	225	133.0	1.471	0.017	0.013	0.013	0.009	104.2	78.2	78.2	57.3
BGP705 LED350-4S/740	31150	194	160.6	1.268	0.014	0.011	0.011	0.008	86.3	64.8	64.8	47.5
BGP705 LED350-4S/730	30800	205	150.2	1.340	0.015	0.011	0.011	0.008	92.3	69.2	69.2	50.7

BGP705 LED350-4S/727	30800	235	131.1	1.536	0.017	0.013	0.013	0.010	105.8	79.3	79.3	58.2
BGP705 LED350-4S/722	30450	265	114.9	1.732	0.020	0.015	0.015	0.011	120.6	90.5	90.5	66.4
BGP705 LED350-4S/830	30800	235	131.1	1.536	0.017	0.013	0.013	0.010	105.8	79.3	79.3	58.2
BGP705 LED400-4S/740	35200	225	156.4	1.471	0.015	0.011	0.011	0.008	88.6	66.5	66.5	48.7
BGP705 LED400-4S/730	35200	240	146.7	1.569	0.016	0.012	0.012	0.009	94.5	70.9	70.9	52.0
BGP705 LED400-4S/727	34800	270	128.9	1.765	0.018	0.013	0.013	0.010	107.6	80.7	80.7	59.2
BGP705 LED400-4S/722	34400	305	112.8	1.993	0.020	0.015	0.015	0.011	122.9	92.2	92.2	67.6
BGP705 LED400-4S/830	34800	270	128.9	1.765	0.018	0.013	0.013	0.010	107.6	80.7	80.7	59.2
BGP705 LED450-4S/740	39150	255	153.5	1.667	0.015	0.011	0.011	0.008	90.3	67.7	67.7	49.7
BGP705 LED450-4S/730	39150	270	145.0	1.765	0.016	0.012	0.012	0.009	95.6	71.7	71.7	52.6
BGP705 LED450-4S/727	38700	310	124.8	2.026	0.018	0.014	0.014	0.010	111.0	83.3	83.3	61.1
BGP705 LED450-4S/722	37800	350	108.0	2.288	0.021	0.016	0.016	0.012	128.4	96.3	96.3	70.6
BGP705 LED450-4S/830	38700	310	124.8	2.026	0.018	0.014	0.014	0.010	111.0	83.3	83.3	61.1
BGP705 LED460-4S/722	38640	360	107.3	2.353	0.021	0.016	0.016	0.012	129.2	96.9	96.9	71.0
BGP705 LED480-4S/830	40800	330	123.6	2.157	0.019	0.014	0.014	0.010	112.1	84.1	84.1	61.7
BGP705 LED500-4S/740	43500	285	152.6	1.863	0.015	0.011	0.011	0.008	90.8	68.1	68.1	50.0
BGP705 LED500-4S/730	43000	305	141.0	1.993	0.016	0.012	0.012	0.009	98.3	73.7	73.7	54.1
BGP705 LED500-4S/727	42000	350	120.0	2.288	0.019	0.014	0.014	0.010	115.5	86.6	86.6	63.5
BGP705 LED500-4S/830	42500	350	121.4	2.288	0.019	0.014	0.014	0.010	114.2	85.6	85.6	62.8
BGP705 LED550-4S/740	48160	320	150.5	2.092	0.015	0.011	0.011	0.008	92.1	69.1	69.1	50.7

BGP705 LED550-4S/730	47600	340	140.0	2.222	0.016	0.012	0.012	0.009	99.0	74.3	74.3	54.5
BGP705 LED580-4S/730	48720	365	133.5	2.386	0.017	0.013	0.013	0.009	103.9	77.9	77.9	57.1
BGP705 LED590-4S/740	51000	345	147.8	2.255	0.015	0.012	0.012	0.009	93.8	70.3	70.3	51.6
BGP705 LED600-4S/740	50400	355	142.0	2.320	0.016	0.012	0.012	0.009	97.6	73.2	73.2	53.7
BGP705 LED600-4S/730	49800	380	131.1	2.484	0.017	0.013	0.013	0.010	105.8	79.3	79.3	58.2
BGP705 LED630-4S/740	53760	375	143.4	2.451	0.016	0.012	0.012	0.009	96.7	72.5	72.5	53.2

* 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.

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 ²¹	kg CO _{2e}	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 = 3,96E-01) and then multiplying for the Finland value from the same table (FINLAND = 2,70E-01).

Thus, the calculation of this example would be:

$$\text{New B6 GWP tot for Finland} = (4,06E+02 / 3,96E-01) \times 2,70E-01 = 2,76 E+02$$

Country	GWP tot (kg CO2 eq. per kwh)
AUSTRALIA	9,59E-01
AUSTRIA	3,37E-01
BELGIUM	2,63E-01
CHINA	1,14E+00
DENMARK	2,91E-01
EU	3,96E-01
FINLAND	2,70E-01
FRANCE	8,77E-02
GERMANY	5,32E-01
HUNGARY	4,67E-01
IRELAND	4,26E-01
ITALY	3,94E-01
LATAM	3,50E-01
NAM	4,83E-01
NETHERLANDS	5,88E-01
NORWAY	2,59E-02
POLAND	1,05E+00

PORTUGAL	4,22E-01
ROW	7,32E-01
SPAIN	3,34E-01
SWEDEN	4,95E-02
SWITZERLAND	5,38E-02
UK	3,17E-01

Source Ecoinvent 3.8

