ENVIRONMENTAL PRODUCT DECLARATION

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

Philips Luma gen2 Medium
BGP704
Signify N.V.

EPD HUB
Publishing 2024-05-29

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: ☑ 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	Philips Luma gen2 Medium
Additional labels	BGP704
Product reference	910925867231
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	11.456 kg
GWP-fossil, A1-A3 (kgCO2e)	1.01E+02
GWP-total, A1-A3 (kgCO2e)	9.95E+01
Secondary material, inputs (%)	51.4
Secondary material, outputs (%)	60.2
Total energy use, A1-A3 (kWh)	345
Net fresh water use, A1-A3 (m3)	0.57

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.

Philips Luma gen2

For more information, please visit
https://www.lighting.philips.com/link/BBP333/fam/aa/en

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	70.45	EU , APAC
Minerals	13.13	EU , APAC
Fossil materials	16.42	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	0.376

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 unit
Mass per declared unit	11.456 kg
Functional unit	12740 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 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.

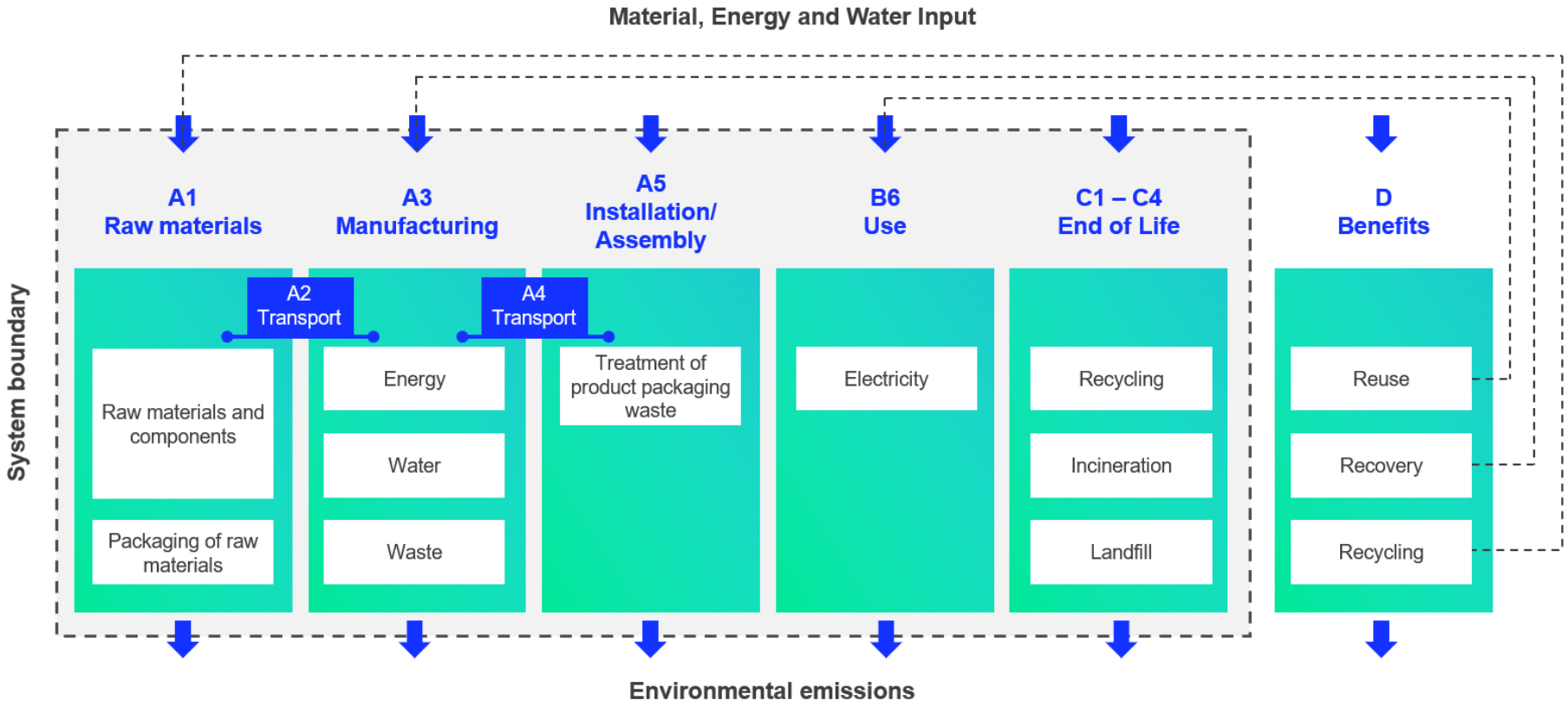
PRODUCT USE AND MAINTENANCE (B1-B7)

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 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
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_2e	9,70E+01	2,33E+00	1,88E-01	9,95E+01	2,33E+00	1,41E+00	MNR	MNR	MNR	MNR	MNR	3,29E+03	MNR	MNR	1,61E-01	1,67E+00	1,26E+00	-1,78E+01
GWP – fossil	kg CO_2e	9,76E+01	2,33E+00	1,53E+00	1,01E+02	2,33E+00	5,73E-02	MNR	MNR	MNR	MNR	MNR	3,28E+03	MNR	MNR	1,61E-01	1,67E+00	1,26E+00	-1,77E+01
GWP – biogenic	kg CO_2e	-7,96E-01	0,00E+00	-1,35E+00	-2,15E+00	9,00E-04	1,36E+00	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	0,00E+00	0,00E+00	-4,52E-03
GWP – LULUC	kg CO_2e	1,69E-01	9,86E-04	7,54E-03	1,77E-01	8,58E-04	1,24E-05	MNR	MNR	MNR	MNR	MNR	7,67E+00	MNR	MNR	5,94E-05	2,22E-04	1,52E-04	-2,26E-03
Ozone depletion pot.	kg CFC_{-11}e	8,57E-06	5,24E-07	1,82E-07	9,27E-06	5,35E-07	3,59E-09	MNR	MNR	MNR	MNR	MNR	1,67E-04	MNR	MNR	3,71E-08	1,94E-08	1,67E-08	-4,82E-07
Acidification potential	mol H^+e	6,53E-01	1,98E-02	6,56E-03	6,80E-01	9,85E-03	2,85E-04	MNR	MNR	MNR	MNR	MNR	1,87E+01	MNR	MNR	6,82E-04	2,04E-03	8,47E-04	-2,02E-01
EP-freshwater[2)]	kg Pe	5,23E-03	1,74E-05	6,80E-05	5,32E-03	1,91E-05	3,77E-07	MNR	MNR	MNR	MNR	MNR	3,48E-01	MNR	MNR	1,32E-06	7,06E-06	6,81E-06	-1,17E-03
EP-marine	kg Ne	1,03E-01	5,30E-03	2,83E-03	1,11E-01	2,93E-03	1,21E-04	MNR	MNR	MNR	MNR	MNR	2,48E+00	MNR	MNR	2,03E-04	5,21E-04	1,39E-03	-2,04E-02
EP-terrestrial	mol Ne	1,09E+00	5,87E-02	1,84E-02	1,17E+00	3,23E-02	1,26E-03	MNR	MNR	MNR	MNR	MNR	2,83E+01	MNR	MNR	2,24E-03	5,80E-03	2,89E-03	-2,39E-01
POCP ("smog")[3)]	kg NMVOCe	3,36E-01	1,69E-02	5,36E-03	3,58E-01	1,03E-02	3,14E-04	MNR	MNR	MNR	MNR	MNR	7,74E+00	MNR	MNR	7,16E-04	1,54E-03	9,99E-04	-6,89E-02
ADP-minerals & metals[4)]	kg Sbe	3,91E-03	5,12E-06	8,61E-06	3,93E-03	5,46E-06	1,18E-07	MNR	MNR	MNR	MNR	MNR	3,06E-02	MNR	MNR	3,78E-07	1,64E-05	3,49E-07	-9,14E-04
ADP-fossil resources	MJ	1,13E+03	3,41E+01	2,01E+01	1,18E+03	3,50E+01	2,81E-01	MNR	MNR	MNR	MNR	MNR	6,98E+04	MNR	MNR	2,42E+00	2,13E+00	1,63E+00	-1,74E+02
Water use[5)]	m^3e depr.	3,23E+01	1,46E-01	6,56E-01	3,31E+01	1,56E-01	6,61E-02	MNR	MNR	MNR	MNR	MNR	1,91E+03	MNR	MNR	1,08E-02	9,14E-02	1,04E-01	-1,39E+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	7,21E-06	2,39E-07	1,23E-07	7,57E-06	2,68E-07	2,63E-09	MNR	MNR	MNR	MNR	MNR	6,15E-05	MNR	MNR	1,86E-08	2,46E-08	1,33E-08	-1,05E-06
Ionizing radiation[6)]	kBq U235e	5,20E+00	1,62E-01	5,74E-02	5,42E+00	1,66E-01	1,01E-03	MNR	MNR	MNR	MNR	MNR	1,89E+03	MNR	MNR	1,15E-02	1,25E-02	8,48E-03	-1,04E+00
Ecotoxicity (freshwater)	CTUe	4,33E+03	2,95E+01	5,97E+01	4,42E+03	3,14E+01	1,89E+00	MNR	MNR	MNR	MNR	MNR	4,75E+04	MNR	MNR	2,18E+00	1,15E+01	7,25E+02	-5,56E+02
Human toxicity, cancer	CTUh	2,75E-07	8,67E-10	1,42E-09	2,77E-07	7,72E-10	8,87E-11	MNR	MNR	MNR	MNR	MNR	1,56E-06	MNR	MNR	5,35E-11	3,79E-10	1,07E-09	-4,36E-09
Human tox. non-cancer	CTUh	3,85E-06	2,82E-08	1,93E-08	3,90E-06	3,11E-08	3,70E-09	MNR	MNR	MNR	MNR	MNR	5,11E-05	MNR	MNR	2,15E-09	1,57E-08	3,81E-08	-7,83E-07
SQP[7)]	-	4,17E+02	3,48E+01	4,47E+01	4,96E+02	4,03E+01	1,54E-01	MNR	MNR	MNR	MNR	MNR	1,26E+04	MNR	MNR	2,79E+00	3,59E+00	2,36E+00	-4,43E+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	9,76E+01	3,65E-01	1,62E+01	1,14E+02	3,94E-01	9,13E-03	MNR	MNR	MNR	MNR	MNR	1,42E+04	MNR	MNR	2,73E-02	2,88E-01	7,09E-02	-3,98E+00
Renew. PER as material	MJ	8,70E+00	0,00E+00	1,19E+01	2,06E+01	0,00E+00	-1,19E+01	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	-4,56E-01	-8,47E-01	0,00E+00
Total use of renew. PER	MJ	1,06E+02	3,65E-01	2,81E+01	1,35E+02	3,94E-01	-1,19E+01	MNR	MNR	MNR	MNR	MNR	1,42E+04	MNR	MNR	2,73E-02	-1,69E-01	-7,76E-01	-3,98E+00
Non-re. PER as energy	MJ	1,07E+03	3,41E+01	1,96E+01	1,13E+03	3,50E+01	2,81E-01	MNR	MNR	MNR	MNR	MNR	6,97E+04	MNR	MNR	2,42E+00	2,13E+00	1,63E+00	-1,74E+02
Non-re. PER as material	MJ	4,97E+01	0,00E+00	1,10E-01	4,98E+01	0,00E+00	-1,10E-01	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	-1,91E+01	-1,97E+01	0,00E+00
Total use of non-re. PER	MJ	1,12E+03	3,41E+01	1,97E+01	1,18E+03	3,50E+01	1,71E-01	MNR	MNR	MNR	MNR	MNR	6,97E+04	MNR	MNR	2,42E+00	-1,70E+01	-1,81E+01	-1,74E+02
Secondary materials	kg	5,89E+00	1,03E-02	8,91E-01	6,79E+00	9,70E-03	3,34E-04	MNR	MNR	MNR	MNR	MNR	7,19E+00	MNR	MNR	6,72E-04	2,11E-03	4,00E-03	7,17E-01
Renew. secondary fuels	MJ	1,38E-01	8,85E-05	6,27E-02	2,00E-01	9,79E-05	5,38E-06	MNR	MNR	MNR	MNR	MNR	5,83E-02	MNR	MNR	6,78E-06	1,06E-04	3,13E-05	-9,67E-04
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	5,47E-01	4,13E-03	1,54E-02	5,67E-01	4,53E-03	1,11E-03	MNR	MNR	MNR	MNR	MNR	6,01E+01	MNR	MNR	3,13E-04	3,15E-03	1,79E-03	-6,36E-02

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	1,60E+01	4,54E-02	9,91E-02	1,62E+01	4,63E-02	1,93E-03	MNR	MNR	MNR	MNR	MNR	2,51E+02	MNR	MNR	3,21E-03	1,39E-02	2,02E-02	-2,77E+00
Non-hazardous waste	kg	1,59E+02	6,96E-01	1,43E+00	1,61E+02	7,61E-01	8,98E-01	MNR	MNR	MNR	MNR	MNR	1,59E+04	MNR	MNR	5,27E-02	1,09E+00	4,53E+00	-5,79E+01
Radioactive waste	kg	2,28E-03	2,30E-04	3,49E-05	2,55E-03	2,34E-04	4,73E-07	MNR	MNR	MNR	MNR	MNR	5,08E-01	MNR	MNR	1,62E-05	8,07E-06	0,00E+00	-3,84E-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	6,27E+00	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	6,36E-01	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	3,93E-01	3,93E-01	0,00E+00	0,00E+00	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	1,40E+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_2e	9,54E+01	2,31E+00	1,58E+00	9,93E+01	2,30E+00	5,56E-02	MNR	MNR	MNR	MNR	MNR	3,25E+03	MNR	MNR	1,59E-01	1,66E+00	1,74E+00	-1,74E+01
Ozone depletion Pot.	kg CFC_{-11}e	6,83E-06	4,15E-07	1,55E-07	7,40E-06	4,24E-07	3,13E-09	MNR	MNR	MNR	MNR	MNR	1,44E-04	MNR	MNR	2,94E-08	1,59E-08	1,35E-08	-4,08E-07
Acidification	kg SO_2e	5,49E-01	1,56E-02	4,87E-03	5,70E-01	7,66E-03	2,07E-04	MNR	MNR	MNR	MNR	MNR	1,59E+01	MNR	MNR	5,30E-04	1,61E-03	6,52E-04	-1,75E-01
Eutrophication	kg PO_4^3e	1,94E-01	2,50E-03	3,40E-03	2,00E-01	1,74E-03	1,55E-04	MNR	MNR	MNR	MNR	MNR	1,22E+01	MNR	MNR	1,21E-04	6,09E-04	4,96E-03	-4,77E-02
POCP (“smog”)	kg C_2H_4e	3,50E-02	4,89E-04	3,94E-04	3,59E-02	2,99E-04	6,41E-06	MNR	MNR	MNR	MNR	MNR	6,50E-01	MNR	MNR	2,07E-05	5,74E-05	1,52E-04	-8,35E-03
ADP-elements	kg Sbe	3,89E-03	4,96E-06	7,70E-06	3,90E-03	5,28E-06	9,26E-08	MNR	MNR	MNR	MNR	MNR	3,06E-02	MNR	MNR	3,66E-07	1,64E-05	3,18E-07	-9,12E-04
ADP-fossil	MJ	1,12E+03	3,41E+01	2,00E+01	1,18E+03	3,50E+01	2,81E-01	MNR	MNR	MNR	MNR	MNR	6,97E+04	MNR	MNR	2,42E+00	2,13E+00	1,63E+00	-1,74E+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 refernce variant of a product family, based on various light management scenarios and power inputs of the luminaires within the same product familiy

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
BGP704 LED22-4S/830	2002.000	15.6	128.3	0.188	0.188	0.141	0.141	0.103	618.4	463.8	463.8	340.1
BGP704 LED22-4S/722	2002.000	17.4	115.1	0.210	0.210	0.157	0.157	0.115	689.7	517.3	517.3	379.3
BGP704 LED22-4S/727	2002.000	15.6	128.3	0.188	0.188	0.141	0.141	0.103	618.4	463.8	463.8	340.1
BGP704 LED22-4S/730	2002.000	14.0	143.0	0.169	0.169	0.127	0.127	0.093	554.9	416.2	416.2	305.2
BGP704 LED24-4S/740	2184.000	14.4	151.7	0.173	0.173	0.130	0.130	0.095	570.8	428.1	428.1	313.9
BGP704 LED24-4S/830	2184.000	17.0	128.5	0.205	0.205	0.154	0.154	0.113	673.9	505.4	505.4	370.6
BGP704 LED24-4S/722	2184.000	19.0	114.9	0.229	0.229	0.172	0.172	0.126	753.1	564.8	564.8	414.2
BGP704 LED24-4S/727	2184.000	17.0	128.5	0.205	0.205	0.154	0.154	0.113	673.9	505.4	505.4	370.6
BGP704 LED24-4S/730	2184.000	15.2	143.7	0.183	0.183	0.137	0.137	0.101	602.5	451.9	451.9	331.4
BGP704 LED27-4S/740	2457.000	16.2	151.7	0.195	0.195	0.146	0.146	0.107	642.1	481.6	481.6	353.2
BGP704 LED27-4S/830	2457.000	19.2	128.0	0.231	0.231	0.173	0.173	0.127	761.1	570.8	570.8	418.6

BGP704 LED27-4S/722	2457.000	21.5	114.3	0.259	0.259	0.194	0.194	0.142	852.2	639.2	639.2	468.7
BGP704 LED27-4S/727	2457.000	19.2	128.0	0.231	0.231	0.173	0.173	0.127	761.1	570.8	570.8	418.6
BGP704 LED27-4S/730	2457.000	17.2	142.8	0.207	0.207	0.155	0.155	0.114	681.8	511.3	511.3	375.0
BGP704 LED30-4S/740	2730.000	18.0	151.7	0.217	0.217	0.163	0.163	0.119	713.5	535.1	535.1	392.4
BGP704 LED30-4S/830	2730.000	21.0	130.0	0.253	0.253	0.190	0.190	0.139	832.4	624.3	624.3	457.8
BGP704 LED30-4S/722	2730.000	23.5	116.2	0.283	0.283	0.212	0.212	0.156	931.5	698.6	698.6	512.3
BGP704 LED30-4S/727	2730.000	21.0	130.0	0.253	0.253	0.190	0.190	0.139	832.4	624.3	624.3	457.8
BGP704 LED30-4S/730	2730.000	19.0	143.7	0.229	0.229	0.172	0.172	0.126	753.1	564.8	564.8	414.2
BGP704 LED35-4S/740	3185.000	21.0	151.7	0.253	0.253	0.190	0.190	0.139	832.4	624.3	624.3	457.8
BGP704 LED35-4S/830	3185.000	25.0	127.4	0.301	0.301	0.226	0.226	0.166	991.0	743.2	743.2	545.0
BGP704 LED35-4S/722	3185.000	28.0	113.8	0.337	0.337	0.253	0.253	0.186	1109.9	832.4	832.4	610.4
BGP704 LED35-4S/727	3185.000	25.0	127.4	0.301	0.301	0.226	0.226	0.166	991.0	743.2	743.2	545.0
BGP704 LED35-4S/730	3185.000	22.0	144.8	0.265	0.265	0.199	0.199	0.146	872.0	654.0	654.0	479.6
BGP704 LED40-4S/740	3640.000	24.0	151.7	0.289	0.289	0.217	0.217	0.159	951.3	713.5	713.5	523.2
BGP704 LED40-4S/830	3640.000	28.5	127.7	0.343	0.343	0.258	0.258	0.189	1129.7	847.3	847.3	621.3
BGP704 LED40-4S/722	3640.000	32.5	112.0	0.392	0.392	0.294	0.294	0.215	1288.3	966.2	966.2	708.5
BGP704 LED40-4S/727	3640.000	28.5	127.7	0.343	0.343	0.258	0.258	0.189	1129.7	847.3	847.3	621.3
BGP704 LED40-4S/730	3640.000	25.5	142.7	0.307	0.307	0.230	0.230	0.169	1010.8	758.1	758.1	555.9
BGP704 LED45-4S/740	4095.000	27.0	151.7	0.325	0.325	0.244	0.244	0.179	1070.2	802.7	802.7	588.6
BGP704 LED45-4S/830	4095.000	32.5	126.0	0.392	0.392	0.294	0.294	0.215	1288.3	966.2	966.2	708.5

BGP704 LED45-4S/722	4095.000	37.0	110.7	0.446	0.446	0.334	0.334	0.245	1466.6	1100.0	1100.0	806.6
BGP704 LED45-4S/727	4095.000	32.5	126.0	0.392	0.392	0.294	0.294	0.215	1288.3	966.2	966.2	708.5
BGP704 LED45-4S/730	4095.000	27.0	151.7	0.325	0.325	0.244	0.244	0.179	1070.2	802.7	802.7	588.6
BGP704 LED50-4S/740	4550.000	30.5	149.2	0.367	0.367	0.276	0.276	0.202	1209.0	906.7	906.7	664.9
BGP704 LED50-4S/830	4550.000	36.5	124.7	0.440	0.440	0.330	0.330	0.242	1446.8	1085.1	1085.1	795.7
BGP704 LED50-4S/722	4550.000	37.5	121.3	0.452	0.452	0.339	0.339	0.248	1486.4	1114.8	1114.8	817.5
BGP704 LED50-4S/727	4550.000	36.5	124.7	0.440	0.440	0.330	0.330	0.242	1446.8	1085.1	1085.1	795.7
BGP704 LED50-4S/730	4550.000	30.0	151.7	0.361	0.361	0.271	0.271	0.199	1189.2	891.9	891.9	654.0
BGP704 LED55-4S/740	5096.000	33.5	152.1	0.404	0.404	0.303	0.303	0.222	1327.9	995.9	995.9	730.3
BGP704 LED55-4S/830	4914.000	37.0	132.8	0.446	0.446	0.334	0.334	0.245	1466.6	1100.0	1100.0	806.6
BGP704 LED55-4S/722	4914.000	41.0	119.9	0.494	0.494	0.370	0.370	0.272	1625.2	1218.9	1218.9	893.8
BGP704 LED55-4S/727	5096.000	41.0	124.3	0.494	0.494	0.370	0.370	0.272	1625.2	1218.9	1218.9	893.8
BGP704 LED55-4S/730	4914.000	33.0	148.9	0.398	0.398	0.298	0.298	0.219	1308.1	981.1	981.1	719.4
BGP704 LED60-4S/740	5460.000	37.0	147.6	0.446	0.446	0.334	0.334	0.245	1466.6	1100.0	1100.0	806.6
BGP704 LED60-4S/830	5460.000	40.5	134.8	0.488	0.488	0.366	0.366	0.268	1605.4	1204.0	1204.0	882.9
BGP704 LED60-4S/722	5460.000	45.5	120.0	0.548	0.548	0.411	0.411	0.302	1803.6	1352.7	1352.7	992.0
BGP704 LED60-4S/727	5460.000	40.5	134.8	0.488	0.488	0.366	0.366	0.268	1605.4	1204.0	1204.0	882.9
BGP704 LED60-4S/730	5460.000	36.0	151.7	0.434	0.434	0.325	0.325	0.239	1427.0	1070.2	1070.2	784.8
BGP704 LED65-4S/740	6006.000	36.5	164.5	0.440	0.440	0.330	0.330	0.242	1446.8	1085.1	1085.1	795.7
BGP704 LED65-4S/830	6006.000	44.0	136.5	0.530	0.530	0.398	0.398	0.292	1744.1	1308.1	1308.1	959.3

BGP704 LED65-4S/722	6006.000	49.5	121.3	0.596	0.596	0.447	0.447	0.328	1962.1	1471.6	1471.6	1079.2
BGP704 LED65-4S/727	6006.000	44.0	136.5	0.530	0.530	0.398	0.398	0.292	1744.1	1308.1	1308.1	959.3
BGP704 LED65-4S/730	6006.000	39.0	154.0	0.470	0.470	0.352	0.352	0.258	1545.9	1159.4	1159.4	850.2
BGP704 LED70-4S/740	6370.000	39.5	161.3	0.476	0.476	0.357	0.357	0.262	1565.7	1174.3	1174.3	861.1
BGP704 LED70-4S/830	6370.000	47.5	134.1	0.572	0.572	0.429	0.429	0.315	1882.8	1412.1	1412.1	1035.6
BGP704 LED70-4S/722	6370.000	54.0	118.0	0.651	0.651	0.488	0.488	0.358	2140.5	1605.4	1605.4	1177.3
BGP704 LED70-4S/727	6370.000	47.5	134.1	0.572	0.572	0.429	0.429	0.315	1882.8	1412.1	1412.1	1035.6
BGP704 LED70-4S/730	6370.000	42.0	151.7	0.506	0.506	0.380	0.380	0.278	1664.8	1248.6	1248.6	915.7
BGP704 LED75-4S/740	6734.000	42.5	158.4	0.512	0.512	0.384	0.384	0.282	1684.6	1263.5	1263.5	926.6
BGP704 LED75-4S/830	6916.000	51.0	135.6	0.614	0.614	0.461	0.461	0.338	2021.6	1516.2	1516.2	1111.9
BGP704 LED75-4S/722	6916.000	58.0	119.2	0.699	0.699	0.524	0.524	0.384	2299.0	1724.3	1724.3	1264.5
BGP704 LED75-4S/727	6916.000	51.0	135.6	0.614	0.614	0.461	0.461	0.338	2021.6	1516.2	1516.2	1111.9
BGP704 LED75-4S/730	6916.000	45.5	152.0	0.548	0.548	0.411	0.411	0.302	1803.6	1352.7	1352.7	992.0
BGP704 LED80-4S/740	7280.000	45.5	160.0	0.548	0.548	0.411	0.411	0.302	1803.6	1352.7	1352.7	992.0
BGP704 LED80-4S/830	7280.000	55.0	132.4	0.663	0.663	0.497	0.497	0.364	2180.1	1635.1	1635.1	1199.1
BGP704 LED80-4S/722	7280.000	62.0	117.4	0.747	0.747	0.560	0.560	0.411	2457.6	1843.2	1843.2	1351.7
BGP704 LED80-4S/727	7280.000	55.0	132.4	0.663	0.663	0.497	0.497	0.364	2180.1	1635.1	1635.1	1199.1
BGP704 LED80-4S/730	7280.000	48.5	150.1	0.584	0.584	0.438	0.438	0.321	1922.5	1441.9	1441.9	1057.4
BGP704 LED85-4S/740	7826.000	47.0	166.5	0.566	0.566	0.425	0.425	0.311	1863.0	1397.3	1397.3	1024.7
BGP704 LED85-4S/830	7826.000	56.0	139.8	0.675	0.675	0.506	0.506	0.371	2219.8	1664.8	1664.8	1220.9

BGP704 LED85-4S/722	7644.000	63.0	121.3	0.759	0.759	0.569	0.569	0.417	2497.2	1872.9	1872.9	1373.5
BGP704 LED85-4S/727	7826.000	56.0	139.8	0.675	0.675	0.506	0.506	0.371	2219.8	1664.8	1664.8	1220.9
BGP704 LED85-4S/730	7826.000	50.0	156.5	0.602	0.602	0.452	0.452	0.331	1981.9	1486.4	1486.4	1090.1
BGP704 LED90-4S/740	8190.000	50.0	163.8	0.602	0.602	0.452	0.452	0.331	1981.9	1486.4	1486.4	1090.1
BGP704 LED90-4S/830	8190.000	60.0	136.5	0.723	0.723	0.542	0.542	0.398	2378.3	1783.7	1783.7	1308.1
BGP704 LED90-4S/722	8190.000	67.0	122.2	0.807	0.807	0.605	0.605	0.444	2655.8	1991.8	1991.8	1460.7
BGP704 LED90-4S/727	8190.000	60.0	136.5	0.723	0.723	0.542	0.542	0.398	2378.3	1783.7	1783.7	1308.1
BGP704 LED90-4S/730	8190.000	53.0	154.5	0.639	0.639	0.479	0.479	0.351	2100.8	1575.6	1575.6	1155.5
BGP704 LED95-4S/740	8736.000	53.0	164.8	0.639	0.639	0.479	0.479	0.351	2100.8	1575.6	1575.6	1155.5
BGP704 LED95-4S/830	8736.000	63.0	138.7	0.759	0.759	0.569	0.569	0.417	2497.2	1872.9	1872.9	1373.5
BGP704 LED95-4S/722	8736.000	71.0	123.0	0.855	0.855	0.642	0.642	0.470	2814.3	2110.8	2110.8	1547.9
BGP704 LED95-4S/727	8736.000	63.0	138.7	0.759	0.759	0.569	0.569	0.417	2497.2	1872.9	1872.9	1373.5
BGP704 LED95-4S/730	8736.000	56.0	156.0	0.675	0.675	0.506	0.506	0.371	2219.8	1664.8	1664.8	1220.9
BGP704 LED100-4S/740	9100.000	56.0	162.5	0.675	0.675	0.506	0.506	0.371	2219.8	1664.8	1664.8	1220.9
BGP704 LED100-4S/830	9100.000	67.0	135.8	0.807	0.807	0.605	0.605	0.444	2655.8	1991.8	1991.8	1460.7
BGP704 LED100-4S/722	9100.000	75.0	121.3	0.904	0.904	0.678	0.678	0.497	2972.9	2229.7	2229.7	1635.1
BGP704 LED100-4S/727	9100.000	67.0	135.8	0.807	0.807	0.605	0.605	0.444	2655.8	1991.8	1991.8	1460.7
BGP704 LED100-4S/730	9100.000	59.0	154.2	0.711	0.711	0.533	0.533	0.391	2338.7	1754.0	1754.0	1286.3
BGP704 LED110-4S/740	10010.000	61.0	164.1	0.735	0.735	0.551	0.551	0.404	2418.0	1813.5	1813.5	1329.9
BGP704 LED110-4S/830	10010.000	74.0	135.3	0.892	0.892	0.669	0.669	0.490	2933.3	2199.9	2199.9	1613.3

BGP704 LED110-4S/722	10010.000	84.0	119.2	1.012	1.012	0.759	0.759	0.557	3329.6	2497.2	2497.2	1831.3
BGP704 LED110-4S/727	10010.000	74.0	135.3	0.892	0.892	0.669	0.669	0.490	2933.3	2199.9	2199.9	1613.3
BGP704 LED110-4S/730	10010.000	66.0	151.7	0.795	0.795	0.596	0.596	0.437	2616.1	1962.1	1962.1	1438.9
BGP704 LED120-4S/740	10920.000	68.0	160.6	0.819	0.819	0.614	0.614	0.451	2695.4	2021.6	2021.6	1482.5
BGP704 LED120-4S/830	10920.000	82.0	133.2	0.988	0.988	0.741	0.741	0.543	3250.4	2437.8	2437.8	1787.7
BGP704 LED120-4S/722	10800.000	92.0	117.4	1.108	1.108	0.831	0.831	0.610	3646.7	2735.1	2735.1	2005.7
BGP704 LED120-4S/727	10920.000	82.0	133.2	0.988	0.988	0.741	0.741	0.543	3250.4	2437.8	2437.8	1787.7
BGP704 LED120-4S/730	10920.000	72.0	151.7	0.867	0.867	0.651	0.651	0.477	2854.0	2140.5	2140.5	1569.7
BGP704 LED130-4S/740	11830.000	74.0	159.9	0.892	0.892	0.669	0.669	0.490	2933.3	2199.9	2199.9	1613.3
BGP704 LED130-4S/830	11830.000	89.0	132.9	1.072	1.072	0.804	0.804	0.590	3527.8	2645.9	2645.9	1940.3
BGP704 LED130-4S/722	11700.000	102.0	114.7	1.229	1.229	0.922	0.922	0.676	4043.1	3032.3	3032.3	2223.7
BGP704 LED130-4S/727	11830.000	89.0	132.9	1.072	1.072	0.804	0.804	0.590	3527.8	2645.9	2645.9	1940.3
BGP704 LED130-4S/730	11830.000	79.0	149.7	0.952	0.952	0.714	0.714	0.523	3131.4	2348.6	2348.6	1722.3
BGP704 LED140-4S/740	12740.000	80.0	159.3	0.964	0.964	0.723	0.723	0.530	3171.1	2378.3	2378.3	1744.1
BGP704 LED140-4S/830	12600.000	97.0	129.9	1.169	1.169	0.877	0.877	0.643	3844.9	2883.7	2883.7	2114.7
BGP704 LED140-4S/722	12600.000	110.0	114.5	1.325	1.325	0.994	0.994	0.729	4360.2	3270.2	3270.2	2398.1
BGP704 LED140-4S/727	12600.000	97.0	129.9	1.169	1.169	0.877	0.877	0.643	3844.9	2883.7	2883.7	2114.7
BGP704 LED140-4S/730	12740.000	85.0	149.9	1.024	1.024	0.768	0.768	0.563	3369.3	2527.0	2527.0	1853.1
BGP704 LED150-4S/740	13650.000	83.0	164.5	1.000	1.000	0.750	0.750	0.550	3290.0	2467.5	2467.5	1809.5
BGP704 LED150-4S/830	13500.000	100.0	135.0	1.205	1.205	0.904	0.904	0.663	3963.9	2972.9	2972.9	2180.1

BGP704 LED150-4S/722	13500.000	114.0	118.4	1.373	1.373	1.030	1.030	0.755	4518.8	3389.1	3389.1	2485.3
BGP704 LED150-4S/727	13500.000	100.0	135.0	1.205	1.205	0.904	0.904	0.663	3963.9	2972.9	2972.9	2180.1
BGP704 LED150-4S/730	13650.000	89.0	153.4	1.072	1.072	0.804	0.804	0.590	3527.8	2645.9	2645.9	1940.3
BGP704 LED160-4S/740	14560.000	90.0	161.8	1.084	1.084	0.813	0.813	0.596	3567.5	2675.6	2675.6	1962.1
BGP704 LED160-4S/830	14400.000	108.0	133.3	1.301	1.301	0.976	0.976	0.716	4281.0	3210.7	3210.7	2354.5
BGP704 LED160-4S/722	14400.000	122.0	118.0	1.470	1.470	1.102	1.102	0.808	4835.9	3626.9	3626.9	2659.7
BGP704 LED160-4S/727	14400.000	108.0	133.3	1.301	1.301	0.976	0.976	0.716	4281.0	3210.7	3210.7	2354.5
BGP704 LED160-4S/730	14560.000	96.0	151.7	1.157	1.157	0.867	0.867	0.636	3805.3	2854.0	2854.0	2092.9
BGP704 LED170-4S/740	15470.000	96.0	161.1	1.157	1.157	0.867	0.867	0.636	3805.3	2854.0	2854.0	2092.9
BGP704 LED170-4S/830	15300.000	116.0	131.9	1.398	1.398	1.048	1.048	0.769	4598.1	3448.6	3448.6	2528.9
BGP704 LED170-4S/722	15300.000	130.0	117.7	1.566	1.566	1.175	1.175	0.861	5153.0	3864.8	3864.8	2834.2
BGP704 LED170-4S/727	15300.000	116.0	131.9	1.398	1.398	1.048	1.048	0.769	4598.1	3448.6	3448.6	2528.9
BGP704 LED170-4S/730	15300.000	102.0	150.0	1.229	1.229	0.922	0.922	0.676	4043.1	3032.3	3032.3	2223.7
BGP704 LED180-4S/740	16200.000	102.0	158.8	1.229	1.229	0.922	0.922	0.676	4043.1	3032.3	3032.3	2223.7
BGP704 LED180-4S/830	16200.000	124.0	130.6	1.494	1.494	1.120	1.120	0.822	4915.2	3686.4	3686.4	2703.3
BGP704 LED180-4S/722	16200.000	140.0	115.7	1.687	1.687	1.265	1.265	0.928	5549.4	4162.0	4162.0	3052.2
BGP704 LED180-4S/727	16200.000	124.0	130.6	1.494	1.494	1.120	1.120	0.822	4915.2	3686.4	3686.4	2703.3
BGP704 LED180-4S/730	16200.000	108.0	150.0	1.301	1.301	0.976	0.976	0.716	4281.0	3210.7	3210.7	2354.5
BGP704 LED190-4S/740	17100.000	108.0	158.3	1.301	1.301	0.976	0.976	0.716	4281.0	3210.7	3210.7	2354.5
BGP704 LED190-4S/830	17100.000	132.0	129.5	1.590	1.590	1.193	1.193	0.875	5232.3	3924.2	3924.2	2877.8

BGP704 LED190-4S/722	17100.000	148.0	115.5	1.783	1.783	1.337	1.337	0.981	5866.5	4399.9	4399.9	3226.6
BGP704 LED190-4S/727	17100.000	132.0	129.5	1.590	1.590	1.193	1.193	0.875	5232.3	3924.2	3924.2	2877.8
BGP704 LED190-4S/730	17100.000	116.0	147.4	1.398	1.398	1.048	1.048	0.769	4598.1	3448.6	3448.6	2528.9
BGP704 LED200-4S/740	18000.000	114.0	157.9	1.373	1.373	1.030	1.030	0.755	4518.8	3389.1	3389.1	2485.3
BGP704 LED200-4S/830	18000.000	140.0	128.6	1.687	1.687	1.265	1.265	0.928	5549.4	4162.0	4162.0	3052.2
BGP704 LED200-4S/722	17800.000	158.0	112.7	1.904	1.904	1.428	1.428	1.047	6262.9	4697.2	4697.2	3444.6
BGP704 LED200-4S/727	18000.000	140.0	128.6	1.687	1.687	1.265	1.265	0.928	5549.4	4162.0	4162.0	3052.2
BGP704 LED200-4S/730	18000.000	122.0	147.5	1.470	1.470	1.102	1.102	0.808	4835.9	3626.9	3626.9	2659.7
BGP704 LED20-4S/722	1820.000	16.0	113.8	0.193	0.193	0.145	0.145	0.106	634.2	475.7	475.7	348.8
BGP704 LED210-4S/740	18900.000	120.0	157.5	1.446	1.446	1.084	1.084	0.795	4756.6	3567.5	3567.5	2616.1
BGP704 LED210-4S/830	18900.000	148.0	127.7	1.783	1.783	1.337	1.337	0.981	5866.5	4399.9	4399.9	3226.6
BGP704 LED210-4S/727	18900.000	148.0	127.7	1.783	1.783	1.337	1.337	0.981	5866.5	4399.9	4399.9	3226.6
BGP704 LED210-4S/730	18900.000	130.0	145.4	1.566	1.566	1.175	1.175	0.861	5153.0	3864.8	3864.8	2834.2
BGP704 LED220-4S/740	19800.000	128.0	154.7	1.542	1.542	1.157	1.157	0.848	5073.7	3805.3	3805.3	2790.6
BGP704 LED220-4S/830	19800.000	156.0	126.9	1.880	1.880	1.410	1.410	1.034	6183.6	4637.7	4637.7	3401.0
BGP704 LED220-4S/727	19800.000	156.0	126.9	1.880	1.880	1.410	1.410	1.034	6183.6	4637.7	4637.7	3401.0
BGP704 LED220-4S/730	19800.000	136.0	145.6	1.639	1.639	1.229	1.229	0.901	5390.8	4043.1	4043.1	2965.0
BGP704 LED230-4S/740	20700.000	134.0	154.5	1.614	1.614	1.211	1.211	0.888	5311.6	3983.7	3983.7	2921.4
BGP704 LED230-4S/830	20470.000	164.0	124.8	1.976	1.976	1.482	1.482	1.087	6500.7	4875.5	4875.5	3575.4
BGP704 LED230-4S/727	20470.000	164.0	124.8	1.976	1.976	1.482	1.482	1.087	6500.7	4875.5	4875.5	3575.4

BGP704 LED230-4S/730	20700.000	144.0	143.8	1.735	1.735	1.301	1.301	0.954	5708.0	4281.0	4281.0	3139.4
BGP704 LED240-4S/740	21600.000	140.0	154.3	1.687	1.687	1.265	1.265	0.928	5549.4	4162.0	4162.0	3052.2
BGP704 LED240-4S/730	21600.000	150.0	144.0	1.807	1.807	1.355	1.355	0.994	5945.8	4459.3	4459.3	3270.2
BGP704 LED250-4S/740	22500.000	148.0	152.0	1.783	1.783	1.337	1.337	0.981	5866.5	4399.9	4399.9	3226.6
BGP704 LED250-4S/730	22500.000	158.0	142.4	1.904	1.904	1.428	1.428	1.047	6262.9	4697.2	4697.2	3444.6
BGP704 LED260-4S/740	23400.000	154.0	151.9	1.855	1.855	1.392	1.392	1.020	6104.3	4578.3	4578.3	3357.4
BGP704 LED260-4S/730	23140.000	166.0	139.4	2.000	2.000	1.500	1.500	1.100	6580.0	4935.0	4935.0	3619.0

** 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 refernce 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 familiy.

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 (Olum) and reference service lifetime (RSL) of the product to estimate the final environmental impact. The scaled impact (SIpep) 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 (P*GSF*), 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
BGP704 LED22-4S/830	2002	15.6	128.3	0.188	0.033	0.025	0.025	0.018	108.1	81.1	81.1	59.5
BGP704 LED22-4S/722	2002	17.4	115.1	0.210	0.037	0.027	0.027	0.020	120.6	90.4	90.4	66.3
BGP704 LED22-4S/727	2002	15.6	128.3	0.188	0.033	0.025	0.025	0.018	108.1	81.1	81.1	59.5
BGP704 LED22-4S/730	2002	14	143.0	0.169	0.029	0.022	0.022	0.016	97.0	72.8	72.8	53.4

BGP704 LED24-4S/740	2184	14.4	151.7	0.173	0.028	0.021	0.021	0.015	91.5	68.6	68.6	50.3
BGP704 LED24-4S/830	2184	17	128.5	0.205	0.033	0.025	0.025	0.018	108.0	81.0	81.0	59.4
BGP704 LED24-4S/722	2184	19	114.9	0.229	0.037	0.028	0.028	0.020	120.7	90.5	90.5	66.4
BGP704 LED24-4S/727	2184	17	128.5	0.205	0.033	0.025	0.025	0.018	108.0	81.0	81.0	59.4
BGP704 LED24-4S/730	2184	15.2	143.7	0.183	0.029	0.022	0.022	0.016	96.6	72.4	72.4	53.1
BGP704 LED27-4S/740	2457	16.2	151.7	0.195	0.028	0.021	0.021	0.015	91.5	68.6	68.6	50.3
BGP704 LED27-4S/830	2457	19.2	128.0	0.231	0.033	0.025	0.025	0.018	108.4	81.3	81.3	59.6
BGP704 LED27-4S/722	2457	21.5	114.3	0.259	0.037	0.028	0.028	0.020	121.4	91.1	91.1	66.8
BGP704 LED27-4S/727	2457	19.2	128.0	0.231	0.033	0.025	0.025	0.018	108.4	81.3	81.3	59.6
BGP704 LED27-4S/730	2457	17.2	142.8	0.207	0.030	0.022	0.022	0.016	97.1	72.8	72.8	53.4
BGP704 LED30-4S/740	2730	18	151.7	0.217	0.028	0.021	0.021	0.015	91.5	68.6	68.6	50.3
BGP704 LED30-4S/830	2730	21	130.0	0.253	0.032	0.024	0.024	0.018	106.7	80.0	80.0	58.7
BGP704 LED30-4S/722	2730	23.5	116.2	0.283	0.036	0.027	0.027	0.020	119.4	89.6	89.6	65.7
BGP704 LED30-4S/727	2730	21	130.0	0.253	0.032	0.024	0.024	0.018	106.7	80.0	80.0	58.7
BGP704 LED30-4S/730	2730	19	143.7	0.229	0.029	0.022	0.022	0.016	96.6	72.4	72.4	53.1
BGP704 LED35-4S/740	3185	21	151.7	0.253	0.028	0.021	0.021	0.015	91.5	68.6	68.6	50.3
BGP704 LED35-4S/830	3185	25	127.4	0.301	0.033	0.025	0.025	0.018	108.9	81.7	81.7	59.9
BGP704 LED35-4S/722	3185	28	113.8	0.337	0.037	0.028	0.028	0.020	122.0	91.5	91.5	67.1
BGP704 LED35-4S/727	3185	25	127.4	0.301	0.033	0.025	0.025	0.018	108.9	81.7	81.7	59.9
BGP704 LED35-4S/730	3185	22	144.8	0.265	0.029	0.022	0.022	0.016	95.8	71.9	71.9	52.7

BGP704 LED40-4S/740	3640	24	151.7	0.289	0.028	0.021	0.021	0.015	91.5	68.6	68.6	50.3
BGP704 LED40-4S/830	3640	28.5	127.7	0.343	0.033	0.025	0.025	0.018	108.6	81.5	81.5	59.7
BGP704 LED40-4S/722	3640	32.5	112.0	0.392	0.038	0.028	0.028	0.021	123.9	92.9	92.9	68.1
BGP704 LED40-4S/727	3640	28.5	127.7	0.343	0.033	0.025	0.025	0.018	108.6	81.5	81.5	59.7
BGP704 LED40-4S/730	3640	25.5	142.7	0.307	0.030	0.022	0.022	0.016	97.2	72.9	72.9	53.5
BGP704 LED45-4S/740	4095	27	151.7	0.325	0.028	0.021	0.021	0.015	91.5	68.6	68.6	50.3
BGP704 LED45-4S/830	4095	32.5	126.0	0.392	0.033	0.025	0.025	0.018	110.1	82.6	82.6	60.6
BGP704 LED45-4S/722	4095	37	110.7	0.446	0.038	0.029	0.029	0.021	125.4	94.0	94.0	68.9
BGP704 LED45-4S/727	4095	32.5	126.0	0.392	0.033	0.025	0.025	0.018	110.1	82.6	82.6	60.6
BGP704 LED45-4S/730	4095	27	151.7	0.325	0.028	0.021	0.021	0.015	91.5	68.6	68.6	50.3
BGP704 LED50-4S/740	4550	30.5	149.2	0.367	0.028	0.021	0.021	0.016	93.0	69.7	69.7	51.1
BGP704 LED50-4S/830	4550	36.5	124.7	0.440	0.034	0.025	0.025	0.019	111.3	83.5	83.5	61.2
BGP704 LED50-4S/722	4550	37.5	121.3	0.452	0.035	0.026	0.026	0.019	114.3	85.8	85.8	62.9
BGP704 LED50-4S/727	4550	36.5	124.7	0.440	0.034	0.025	0.025	0.019	111.3	83.5	83.5	61.2
BGP704 LED50-4S/730	4550	30	151.7	0.361	0.028	0.021	0.021	0.015	91.5	68.6	68.6	50.3
BGP704 LED55-4S/740	5096	33.5	152.1	0.404	0.028	0.021	0.021	0.015	91.2	68.4	68.4	50.2
BGP704 LED55-4S/830	4914	37	132.8	0.446	0.032	0.024	0.024	0.017	104.5	78.3	78.3	57.5
BGP704 LED55-4S/722	4914	41	119.9	0.494	0.035	0.026	0.026	0.019	115.8	86.8	86.8	63.7
BGP704 LED55-4S/727	5096	41	124.3	0.494	0.034	0.025	0.025	0.019	111.6	83.7	83.7	61.4
BGP704 LED55-4S/730	4914	33	148.9	0.398	0.028	0.021	0.021	0.016	93.2	69.9	69.9	51.2

BGP704 LED60-4S/740	5460	37	147.6	0.446	0.029	0.021	0.021	0.016	94.0	70.5	70.5	51.7
BGP704 LED60-4S/830	5460	40.5	134.8	0.488	0.031	0.023	0.023	0.017	102.9	77.2	77.2	56.6
BGP704 LED60-4S/722	5460	45.5	120.0	0.548	0.035	0.026	0.026	0.019	115.6	86.7	86.7	63.6
BGP704 LED60-4S/727	5460	40.5	134.8	0.488	0.031	0.023	0.023	0.017	102.9	77.2	77.2	56.6
BGP704 LED60-4S/730	5460	36	151.7	0.434	0.028	0.021	0.021	0.015	91.5	68.6	68.6	50.3
BGP704 LED65-4S/740	6006	36.5	164.5	0.440	0.026	0.019	0.019	0.014	84.3	63.2	63.2	46.4
BGP704 LED65-4S/830	6006	44	136.5	0.530	0.031	0.023	0.023	0.017	101.6	76.2	76.2	55.9
BGP704 LED65-4S/722	6006	49.5	121.3	0.596	0.035	0.026	0.026	0.019	114.3	85.8	85.8	62.9
BGP704 LED65-4S/727	6006	44	136.5	0.530	0.031	0.023	0.023	0.017	101.6	76.2	76.2	55.9
BGP704 LED65-4S/730	6006	39	154.0	0.470	0.027	0.021	0.021	0.015	90.1	67.6	67.6	49.5
BGP704 LED70-4S/740	6370	39.5	161.3	0.476	0.026	0.020	0.020	0.014	86.0	64.5	64.5	47.3
BGP704 LED70-4S/830	6370	47.5	134.1	0.572	0.031	0.024	0.024	0.017	103.5	77.6	77.6	56.9
BGP704 LED70-4S/722	6370	54	118.0	0.651	0.036	0.027	0.027	0.020	117.6	88.2	88.2	64.7
BGP704 LED70-4S/727	6370	47.5	134.1	0.572	0.031	0.024	0.024	0.017	103.5	77.6	77.6	56.9
BGP704 LED70-4S/730	6370	42	151.7	0.506	0.028	0.021	0.021	0.015	91.5	68.6	68.6	50.3
BGP704 LED75-4S/740	6734	42.5	158.4	0.512	0.027	0.020	0.020	0.015	87.6	65.7	65.7	48.2
BGP704 LED75-4S/830	6916	51	135.6	0.614	0.031	0.023	0.023	0.017	102.3	76.7	76.7	56.3
BGP704 LED75-4S/722	6916	58	119.2	0.699	0.035	0.027	0.027	0.019	116.3	87.3	87.3	64.0
BGP704 LED75-4S/727	6916	51	135.6	0.614	0.031	0.023	0.023	0.017	102.3	76.7	76.7	56.3
BGP704 LED75-4S/730	6916	45.5	152.0	0.548	0.028	0.021	0.021	0.015	91.3	68.5	68.5	50.2

BGP704 LED80-4S/740	7280	45.5	160.0	0.548	0.026	0.020	0.020	0.014	86.7	65.0	65.0	47.7
BGP704 LED80-4S/830	7280	55	132.4	0.663	0.032	0.024	0.024	0.018	104.8	78.6	78.6	57.6
BGP704 LED80-4S/722	7280	62	117.4	0.747	0.036	0.027	0.027	0.020	118.2	88.6	88.6	65.0
BGP704 LED80-4S/727	7280	55	132.4	0.663	0.032	0.024	0.024	0.018	104.8	78.6	78.6	57.6
BGP704 LED80-4S/730	7280	48.5	150.1	0.584	0.028	0.021	0.021	0.015	92.4	69.3	69.3	50.8
BGP704 LED85-4S/740	7826	47	166.5	0.566	0.025	0.019	0.019	0.014	83.3	62.5	62.5	45.8
BGP704 LED85-4S/830	7826	56	139.8	0.675	0.030	0.023	0.023	0.017	99.3	74.5	74.5	54.6
BGP704 LED85-4S/722	7644	63	121.3	0.759	0.035	0.026	0.026	0.019	114.3	85.8	85.8	62.9
BGP704 LED85-4S/727	7826	56	139.8	0.675	0.030	0.023	0.023	0.017	99.3	74.5	74.5	54.6
BGP704 LED85-4S/730	7826	50	156.5	0.602	0.027	0.020	0.020	0.015	88.6	66.5	66.5	48.8
BGP704 LED90-4S/740	8190	50	163.8	0.602	0.026	0.019	0.019	0.014	84.7	63.5	63.5	46.6
BGP704 LED90-4S/830	8190	60	136.5	0.723	0.031	0.023	0.023	0.017	101.6	76.2	76.2	55.9
BGP704 LED90-4S/722	8190	67	122.2	0.807	0.034	0.026	0.026	0.019	113.5	85.1	85.1	62.4
BGP704 LED90-4S/727	8190	60	136.5	0.723	0.031	0.023	0.023	0.017	101.6	76.2	76.2	55.9
BGP704 LED90-4S/730	8190	53	154.5	0.639	0.027	0.020	0.020	0.015	89.8	67.3	67.3	49.4
BGP704 LED95-4S/740	8736	53	164.8	0.639	0.026	0.019	0.019	0.014	84.2	63.1	63.1	46.3
BGP704 LED95-4S/830	8736	63	138.7	0.759	0.030	0.023	0.023	0.017	100.0	75.0	75.0	55.0
BGP704 LED95-4S/722	8736	71	123.0	0.855	0.034	0.026	0.026	0.019	112.8	84.6	84.6	62.0
BGP704 LED95-4S/727	8736	63	138.7	0.759	0.030	0.023	0.023	0.017	100.0	75.0	75.0	55.0
BGP704 LED95-4S/730	8736	56	156.0	0.675	0.027	0.020	0.020	0.015	88.9	66.7	66.7	48.9

BGP704 LED100-4S/740	9100	56	162.5	0.675	0.026	0.019	0.019	0.014	85.4	64.0	64.0	47.0
BGP704 LED100-4S/830	9100	67	135.8	0.807	0.031	0.023	0.023	0.017	102.1	76.6	76.6	56.2
BGP704 LED100-4S/722	9100	75	121.3	0.904	0.035	0.026	0.026	0.019	114.3	85.8	85.8	62.9
BGP704 LED100-4S/727	9100	67	135.8	0.807	0.031	0.023	0.023	0.017	102.1	76.6	76.6	56.2
BGP704 LED100-4S/730	9100	59	154.2	0.711	0.027	0.021	0.021	0.015	89.9	67.5	67.5	49.5
BGP704 LED110-4S/740	10010	61	164.1	0.735	0.026	0.019	0.019	0.014	84.5	63.4	63.4	46.5
BGP704 LED110-4S/830	10010	74	135.3	0.892	0.031	0.023	0.023	0.017	102.6	76.9	76.9	56.4
BGP704 LED110-4S/722	10010	84	119.2	1.012	0.035	0.027	0.027	0.019	116.4	87.3	87.3	64.0
BGP704 LED110-4S/727	10010	74	135.3	0.892	0.031	0.023	0.023	0.017	102.6	76.9	76.9	56.4
BGP704 LED110-4S/730	10010	66	151.7	0.795	0.028	0.021	0.021	0.015	91.5	68.6	68.6	50.3
BGP704 LED120-4S/740	10920	68	160.6	0.819	0.026	0.020	0.020	0.014	86.4	64.8	64.8	47.5
BGP704 LED120-4S/830	10920	82	133.2	0.988	0.032	0.024	0.024	0.017	104.2	78.1	78.1	57.3
BGP704 LED120-4S/722	10800	92	117.4	1.108	0.036	0.027	0.027	0.020	118.2	88.6	88.6	65.0
BGP704 LED120-4S/727	10920	82	133.2	0.988	0.032	0.024	0.024	0.017	104.2	78.1	78.1	57.3
BGP704 LED120-4S/730	10920	72	151.7	0.867	0.028	0.021	0.021	0.015	91.5	68.6	68.6	50.3
BGP704 LED130-4S/740	11830	74	159.9	0.892	0.026	0.020	0.020	0.015	86.8	65.1	65.1	47.7
BGP704 LED130-4S/830	11830	89	132.9	1.072	0.032	0.024	0.024	0.017	104.4	78.3	78.3	57.4
BGP704 LED130-4S/722	11700	102	114.7	1.229	0.037	0.028	0.028	0.020	120.9	90.7	90.7	66.5
BGP704 LED130-4S/727	11830	89	132.9	1.072	0.032	0.024	0.024	0.017	104.4	78.3	78.3	57.4
BGP704 LED130-4S/730	11830	79	149.7	0.952	0.028	0.021	0.021	0.015	92.6	69.5	69.5	51.0

BGP704 LED140-4S/740	12740	80	159.3	0.964	0.026	0.020	0.020	0.015	87.1	65.3	65.3	47.9
BGP704 LED140-4S/830	12600	97	129.9	1.169	0.032	0.024	0.024	0.018	106.8	80.1	80.1	58.7
BGP704 LED140-4S/722	12600	110	114.5	1.325	0.037	0.028	0.028	0.020	121.1	90.8	90.8	66.6
BGP704 LED140-4S/727	12600	97	129.9	1.169	0.032	0.024	0.024	0.018	106.8	80.1	80.1	58.7
BGP704 LED140-4S/730	12740	85	149.9	1.024	0.028	0.021	0.021	0.015	92.6	69.4	69.4	50.9
BGP704 LED150-4S/740	13650	83	164.5	1.000	0.026	0.019	0.019	0.014	84.4	63.3	63.3	46.4
BGP704 LED150-4S/830	13500	100	135.0	1.205	0.031	0.023	0.023	0.017	102.8	77.1	77.1	56.5
BGP704 LED150-4S/722	13500	114	118.4	1.373	0.036	0.027	0.027	0.020	117.2	87.9	87.9	64.4
BGP704 LED150-4S/727	13500	100	135.0	1.205	0.031	0.023	0.023	0.017	102.8	77.1	77.1	56.5
BGP704 LED150-4S/730	13650	89	153.4	1.072	0.027	0.021	0.021	0.015	90.5	67.8	67.8	49.8
BGP704 LED160-4S/740	14560	90	161.8	1.084	0.026	0.020	0.020	0.014	85.8	64.3	64.3	47.2
BGP704 LED160-4S/830	14400	108	133.3	1.301	0.032	0.024	0.024	0.017	104.1	78.0	78.0	57.2
BGP704 LED160-4S/722	14400	122	118.0	1.470	0.036	0.027	0.027	0.020	117.5	88.2	88.2	64.6
BGP704 LED160-4S/727	14400	108	133.3	1.301	0.032	0.024	0.024	0.017	104.1	78.0	78.0	57.2
BGP704 LED160-4S/730	14560	96	151.7	1.157	0.028	0.021	0.021	0.015	91.5	68.6	68.6	50.3
BGP704 LED170-4S/740	15470	96	161.1	1.157	0.026	0.020	0.020	0.014	86.1	64.6	64.6	47.4
BGP704 LED170-4S/830	15300	116	131.9	1.398	0.032	0.024	0.024	0.018	105.2	78.9	78.9	57.9
BGP704 LED170-4S/722	15300	130	117.7	1.566	0.036	0.027	0.027	0.020	117.9	88.4	88.4	64.8
BGP704 LED170-4S/727	15300	116	131.9	1.398	0.032	0.024	0.024	0.018	105.2	78.9	78.9	57.9
BGP704 LED170-4S/730	15300	102	150.0	1.229	0.028	0.021	0.021	0.015	92.5	69.4	69.4	50.9

BGP704 LED180-4S/740	16200	102	158.8	1.229	0.027	0.020	0.020	0.015	87.4	65.5	65.5	48.0
BGP704 LED180-4S/830	16200	124	130.6	1.494	0.032	0.024	0.024	0.018	106.2	79.6	79.6	58.4
BGP704 LED180-4S/722	16200	140	115.7	1.687	0.036	0.027	0.027	0.020	119.9	89.9	89.9	65.9
BGP704 LED180-4S/727	16200	124	130.6	1.494	0.032	0.024	0.024	0.018	106.2	79.6	79.6	58.4
BGP704 LED180-4S/730	16200	108	150.0	1.301	0.028	0.021	0.021	0.015	92.5	69.4	69.4	50.9
BGP704 LED190-4S/740	17100	108	158.3	1.301	0.027	0.020	0.020	0.015	87.6	65.7	65.7	48.2
BGP704 LED190-4S/830	17100	132	129.5	1.590	0.033	0.024	0.024	0.018	107.1	80.3	80.3	58.9
BGP704 LED190-4S/722	17100	148	115.5	1.783	0.036	0.027	0.027	0.020	120.1	90.1	90.1	66.0
BGP704 LED190-4S/727	17100	132	129.5	1.590	0.033	0.024	0.024	0.018	107.1	80.3	80.3	58.9
BGP704 LED190-4S/730	17100	116	147.4	1.398	0.029	0.021	0.021	0.016	94.1	70.6	70.6	51.8
BGP704 LED200-4S/740	18000	114	157.9	1.373	0.027	0.020	0.020	0.015	87.9	65.9	65.9	48.3
BGP704 LED200-4S/830	18000	140	128.6	1.687	0.033	0.025	0.025	0.018	107.9	80.9	80.9	59.3
BGP704 LED200-4S/722	17800	158	112.7	1.904	0.037	0.028	0.028	0.021	123.1	92.4	92.4	67.7
BGP704 LED200-4S/727	18000	140	128.6	1.687	0.033	0.025	0.025	0.018	107.9	80.9	80.9	59.3
BGP704 LED200-4S/730	18000	122	147.5	1.470	0.029	0.021	0.021	0.016	94.0	70.5	70.5	51.7
BGP704 LED20-4S/722	1820	16	113.8	0.193	0.037	0.028	0.028	0.020	122.0	91.5	91.5	67.1
BGP704 LED210-4S/740	18900	120	157.5	1.446	0.027	0.020	0.020	0.015	88.1	66.1	66.1	48.4
BGP704 LED210-4S/830	18900	148	127.7	1.783	0.033	0.025	0.025	0.018	108.6	81.5	81.5	59.8
BGP704 LED210-4S/727	18900	148	127.7	1.783	0.033	0.025	0.025	0.018	108.6	81.5	81.5	59.8
BGP704 LED210-4S/730	18900	130	145.4	1.566	0.029	0.022	0.022	0.016	95.4	71.6	71.6	52.5

BGP704 LED220-4S/740	19800	128	154.7	1.542	0.027	0.020	0.020	0.015	89.7	67.3	67.3	49.3
BGP704 LED220-4S/830	19800	156	126.9	1.880	0.033	0.025	0.025	0.018	109.3	82.0	82.0	60.1
BGP704 LED220-4S/727	19800	156	126.9	1.880	0.033	0.025	0.025	0.018	109.3	82.0	82.0	60.1
BGP704 LED220-4S/730	19800	136	145.6	1.639	0.029	0.022	0.022	0.016	95.3	71.5	71.5	52.4
BGP704 LED230-4S/740	20700	134	154.5	1.614	0.027	0.020	0.020	0.015	89.8	67.4	67.4	49.4
BGP704 LED230-4S/830	20470	164	124.8	1.976	0.034	0.025	0.025	0.019	111.2	83.4	83.4	61.1
BGP704 LED230-4S/727	20470	164	124.8	1.976	0.034	0.025	0.025	0.019	111.2	83.4	83.4	61.1
BGP704 LED230-4S/730	20700	144	143.8	1.735	0.029	0.022	0.022	0.016	96.5	72.4	72.4	53.1
BGP704 LED240-4S/740	21600	140	154.3	1.687	0.027	0.020	0.020	0.015	89.9	67.4	67.4	49.5
BGP704 LED240-4S/730	21600	150	144.0	1.807	0.029	0.022	0.022	0.016	96.3	72.3	72.3	53.0
BGP704 LED250-4S/740	22500	148	152.0	1.783	0.028	0.021	0.021	0.015	91.3	68.4	68.4	50.2
BGP704 LED250-4S/730	22500	158	142.4	1.904	0.030	0.022	0.022	0.016	97.4	73.1	73.1	53.6
BGP704 LED260-4S/740	23400	154	151.9	1.855	0.028	0.021	0.021	0.015	91.3	68.5	68.5	50.2
BGP704 LED260-4S/730	23140	166	139.4	2.000	0.030	0.023	0.023	0.017	99.5	74.6	74.6	54.7

** 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 highlighed 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_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 multilplying for the Finland value from the same table (FINLAND = 2,70E-01).

Thus, the calculation of this example would be:

New B6 GWP tot for Finland = (4,06E+02 / 3,96E-01) x 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