Classified

ENVIRONMENTAL PRODUCT DECLARATION

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

Philips UniStreet/LumiStreet gen2

BGP283/293/393
Signify N.V.

EPD HUB
Publishing date 2024-02-14

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 Unistreet/Lumistreet gen2 Medium
Additional labels	BGP293 LED180-4S/730 II DM50 D9 48/60S
Product reference	91092586802
Place of production	Poland
Period for data	2022
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	%

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 unit of 18000 lumens over 100000 hours
Declared unit mass	7.308 kg
GWP-fossil, A1-A3 (kgCO2e)	1.70E+02
GWP-total, A1-A3 (kgCO2e)	1.69E+02
Secondary material, inputs (%)	9.04
Secondary material, outputs (%)	54.5
Total energy use, A1-A3 (kWh)	528.0
Total water use, A1-A3 (m3e)	9.82E-01

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

Designed for large-scale ledification projects, the UniStreet/LumiStreet gen2 is the ideal 1:1 luminaire replacement for municipalities. Thanks to its high efficiency and low initial cost, the UniStreet gen2 luminaire enables a fast payback and significant savings in terms of energy consumption within a short period of time. The ease of installation and maintenance is enabled by the Philips Service tag and the Philips SR (System Ready) socket makes it future-ready and you can pair this luminaire with lighting control and software applications such as Interact City. Available with a number of different optics and lumen packages that can even be tuned further to fit exact project requirements, UniStreet gen2 is a true point-to-point replacement solution for conventional light sources. The compact luminaire, using high-quality materials is also easy to dismantle and recycle at the end of its lifetime.

For more information, please visit
https://www.lighting.philips.com/link/BGP281/fam/aa/en

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass-%	Material origin
Metals	65.06	EU , APAC
Minerals	22.56	APAC , EU
Fossil materials	12.39	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	0.184

FUNCTIONAL UNIT AND SERVICE LIFE

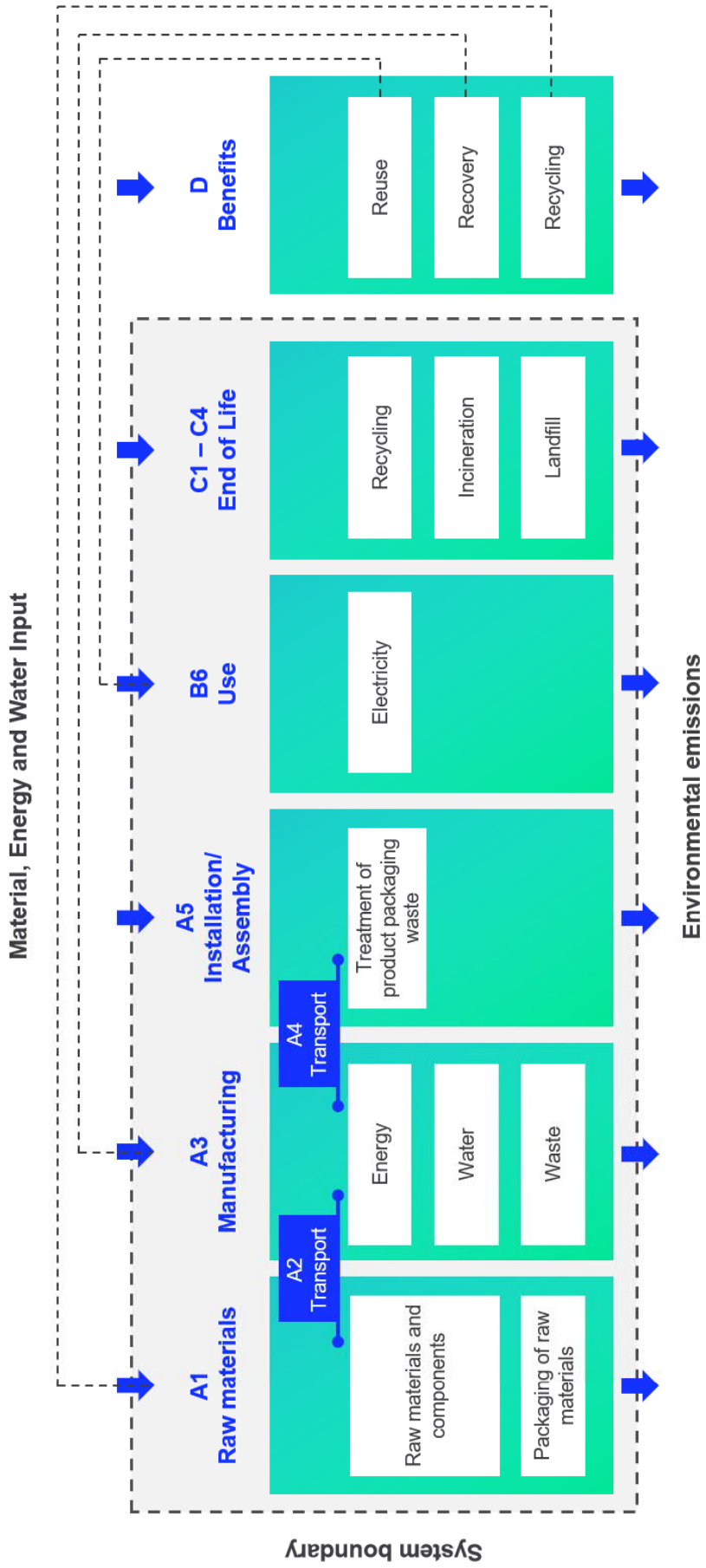|	
Declared unit	1 Product
Mass per declared unit	7.308 kg
Functional unit	1 unit of 18000 lumens over 100000 hours
Reference service life	100000 hours

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

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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.

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production (D). The benefits and loads of incineration and recycling are included in Module D.

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SYSTEM BOUNDARY

Material, Energy and Water Input

SYSTEM BOUNDARY

| A1 Raw materials | A3 Manufacturing | A5 Installation/ Assembly | B6 Use | C1 – C4 End of Life | D Benefits |

Raw materials and components

Packaging of raw materials

A2 Transport

Energy

Water

Waste

A4 Transport

Treatment of product packaging waste

Electricity

Recycling

Incineration

Landfill

Reuse

Recovery

Recycling

Environmental emissions

System boundary

LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

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

ALLOCATION, ESTIMATES AND ASSUMPTIONS

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

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

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

AVERAGES AND VARIABILITY

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

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

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. Ecoinvent 3.8 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	1.68E+02	1.46E+00	7.50E-02	1.69E+02	1.46E+00	6.83E-01	MNR	MNR	MNR	MNR	MNR	4.44E+03	MNR	MNR	1.05E-01	7.93E-01	6.50E-01	-6.03E+01
GWP – fossil	kg CO$_2$e	1.68E+02	1.46E+00	7.37E-02	1.70E+02	1.46E+00	1.81E-02	MNR	MNR	MNR	MNR	MNR	4.43E+03	MNR	MNR	1.05E-01	7.93E-01	6.50E-01	-6.02E+01
GWP – biogenic	kg CO$_2$e	-5.19E-01	0.00E+00	-6.65E-01	-1.18E+00	5.63E-04	6.65E-01	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	0.00E+00	0.00E+00	-6.99E-03
GWP – LULUC	kg CO$_2$e	2.58E-01	8.93E-04	2.98E-03	2.62E-01	5.38E-04	5.95E-06	MNR	MNR	MNR	MNR	MNR	1.03E+01	MNR	MNR	3.87E-05	1.37E-04	1.00E-04	-4.65E-03
Ozone depletion pot.	kg CFC$_{-11}$e	7.51E-06	3.05E-07	9.70E-08	7.92E-06	3.35E-07	1.75E-09	MNR	MNR	MNR	MNR	MNR	2.25E-04	MNR	MNR	2.41E-08	1.11E-08	1.10E-08	-1.63E-06
Acidification potential	mol H$^+$e	1.23E+00	3.39E-02	2.90E-03	1.27E+00	6.17E-03	1.36E-04	MNR	MNR	MNR	MNR	MNR	2.53E-01	MNR	MNR	4.44E-04	1.16E-03	5.29E-04	-6.05E-01
EP-freshwater[2]	kg Pe	1.18E-02	7.42E-06	2.86E-05	1.18E-02	1.19E-05	1.82E-07	MNR	MNR	MNR	MNR	MNR	4.69E-01	MNR	MNR	8.58E-07	4.23E-06	5.02E-06	-3.77E-03
EP-marine	kg Ne	1.77E-01	8.45E-03	1.30E-03	1.87E-01	1.83E-03	5.77E-05	MNR	MNR	MNR	MNR	MNR	3.35E+00	MNR	MNR	1.32E-04	2.87E-04	1.05E-03	-6.70E-02
EP-terrestrial	mol Ne	1.97E+00	9.38E-02	8.29E-03	2.07E+00	2.02E-02	5.99E-04	MNR	MNR	MNR	MNR	MNR	3.81E+01	MNR	MNR	1.46E-03	3.21E-03	1.76E-03	-7.71E-01
POCP ("smog")[3]	kg NMVOCe	5.74E-01	2.47E-02	2.14E-03	6.01E-01	6.47E-03	1.50E-04	MNR	MNR	MNR	MNR	MNR	1.04E+01	MNR	MNR	4.66E-04	8.57E-04	6.49E-04	-2.23E-01
ADP-minerals & metals[4]	kg Sbe	9.51E-03	2.48E-06	3.83E-06	9.52E-03	3.42E-06	5.75E-08	MNR	MNR	MNR	MNR	MNR	4.13E-02	MNR	MNR	2.46E-07	9.45E-06	2.19E-07	-3.37E-04
ADP-fossil resources	MJ	1.75E+03	1.95E+01	9.89E+00	1.78E+03	2.19E+01	1.35E-01	MNR	MNR	MNR	MNR	MNR	9.42E+04	MNR	MNR	1.57E+00	1.26E+00	1.06E+00	-5.89E+02
Water use[5]	m^3 depr.	3.97E+01	6.87E-02	2.49E-01	4.00E+01	9.79E-02	3.21E-02	MNR	MNR	MNR	MNR	MNR	2.57E+03	MNR	MNR	7.05E-03	4.69E-02	6.23E-02	-3.90E+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	1.18E-05	8.57E-08	5.21E-08	1.19E-05	1.68E-07	1.27E-09	MNR	MNR	MNR	MNR	MNR	8.31E-05	MNR	MNR	1.21E-08	1.42E-08	8.68E-09	-3.26E-06
Ionizing radiation[6]	kBq U235e	8.30E+00	9.09E-02	2.36E-02	8.41E+00	1.04E-01	4.92E-04	MNR	MNR	MNR	MNR	MNR	2.55E+03	MNR	MNR	7.50E-03	7.65E-03	5.57E-03	-3.52E+00

Classified

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Ecotoxicity (freshwater)	CTUe	7.04E+03	1.43E+01	2.55E+01	7.08E+03	1.97E+01	9.38E-01	MNR	MNR	MNR	MNR	MNR	6.41E+04	MNR	MNR	1.42E+00	6.35E+00	4.22E+02	-1.11E+03
Human toxicity, cancer	CTUh	2.14E-07	7.47E-10	5.19E-10	2.16E-07	4.84E-10	4.20E-11	MNR	MNR	MNR	MNR	MNR	2.10E-06	MNR	MNR	3.48E-11	2.06E-10	4.89E-10	2.29E-09
Human tox. non-cancer	CTUh	6.00E-06	1.14E-08	7.95E-09	6.02E-06	1.95E-08	1.75E-09	MNR	MNR	MNR	MNR	MNR	6.90E-05	MNR	MNR	1.40E-09	8.55E-09	1.31E-08	-1.16E-06
SQP[7]	-	5.50E+02	9.97E+00	1.85E+01	5.79E+02	2.52E+01	7.37E-02	MNR	MNR	MNR	MNR	MNR	1.70E+04	MNR	MNR	1.81E+00	2.10E+00	1.61E+02	-1.10E+02

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	1.44E+02	1.66E-01	8.36E+00	1.53E+02	2.47E-01	4.49E-03	MNR	MNR	MNR	MNR	MNR	1.92E+04	MNR	MNR	1.77E-02	1.70E-01	4.45E-02	-7.90E+00
Renew. PER as material	MJ	4.71E+00	0.00E+00	5.82E+00	1.05E+01	0.00E+00	-5.82E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renew. PER	MJ	1.49E+02	1.66E-01	1.42E+01	1.63E+02	2.47E-01	-5.82E+00	MNR	MNR	MNR	MNR	MNR	1.92E+04	MNR	MNR	1.77E-02	1.70E-01	4.45E-02	-7.90E+00
Non-re. PER as energy	MJ	1.72E+03	1.95E+01	9.54E+00	1.75E+03	2.19E+01	1.36E-01	MNR	MNR	MNR	MNR	MNR	9.40E+04	MNR	MNR	1.57E+00	1.26E+00	1.06E+00	-5.89E+02
Non-re. PER as material	MJ	2.45E+01	0.00E+00	6.31E-02	2.46E+01	0.00E+00	-6.31E-02	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	-7.86E+00	-7.86E+00	0.00E+00
Total use of non-re. PER	MJ	1.74E+03	1.95E+01	9.60E+00	1.77E+03	2.19E+01	7.24E-02	MNR	MNR	MNR	MNR	MNR	9.40E+04	MNR	MNR	1.57E+00	-6.59E+00	-6.80E+00	-5.89E+02
Secondary materials	kg	6.61E-01	7.63E-03	4.55E-01	1.12E+00	6.08E-03	1.62E-04	MNR	MNR	MNR	MNR	MNR	9.70E+00	MNR	MNR	4.37E-04	1.20E-03	2.44E-03	2.46E+00
Renew. secondary fuels	MJ	9.64E-02	3.52E-05	3.22E-02	1.29E-01	6.13E-05	2.69E-06	MNR	MNR	MNR	MNR	MNR	7.86E-02	MNR	MNR	4.41E-06	6.15E-05	1.98E-05	-1.15E-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	m³	9.74E-01	1.72E-03	5.92E-03	9.82E-01	2.83E-03	5.68E-04	MNR	MNR	MNR	MNR	MNR	8.11E+01	MNR	MNR	2.04E-04	1.60E-03	9.79E-04	-1.81E-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

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	2.86E+01	2.63E-02	3.69E-02	2.87E+01	2.90E-02	1.26E-04	MNR	MNR	MNR	MNR	MNR	3.38E+02	MNR	MNR	2.09E-03	8.38E-03	6.22E-03	-9.48E+00
Non-hazardous waste	kg	3.04E+02	2.93E-01	5.45E-01	3.05E+02	4.77E-01	4.55E-01	MNR	MNR	MNR	MNR	MNR	2.14E+04	MNR	MNR	3.43E-02	6.12E-01	3.02E-02	-1.71E+02
Radioactive waste	kg	3.48E-03	1.35E-04	1.56E-05	3.63E-03	1.46E-04	2.17E-07	MNR	MNR	MNR	MNR	MNR	6.86E-01	MNR	MNR	1.05E-05	4.89E-06	0.00E+00	-1.30E-03

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	3.99E+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	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	2.51E-01	2.51E-01	0.00E+00	0.00E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	6.47E+00	0.00E+00	0.00E+00

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

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	1.63E+02	1.45E+00	7.59E-01	1.65E+02	1.44E+00	1.73E-02	MNR	MNR	MNR	MNR	MNR	4.38E+03	MNR	MNR	1.04E-01	7.90E-01	1.04E+00	-5.91E+01
Ozone depletion Pot.	kg CFC_{11}e	6.83E-06	2.41E-07	8.26E-08	7.15E-06	2.65E-07	1.53E-09	MNR	MNR	MNR	MNR	MNR	1.95E-04	MNR	MNR	1.91E-09	9.13E-09	8.91E-09	-1.38E-06
Acidification	kg SO_2e	1.04E+00	2.71E-02	2.12E-03	1.07E+00	4.79E-03	9.95E-05	MNR	MNR	MNR	MNR	MNR	2.14E-01	MNR	MNR	3.45E-04	9.19E-04	4.08E-04	-5.21E-01
Eutrophication	kg PO_4^3e	3.52E-01	3.20E-03	1.53E-03	3.57E-01	1.09E-03	7.41E-05	MNR	MNR	MNR	MNR	MNR	1.65E+01	MNR	MNR	7.85E-05	3.39E-04	3.30E-03	-1.46E-01

POCP ("smog")	kg C$_2$H$_4$e	5.79E-02	7.17E-04	1.47E-04	5.88E-02	1.87E-04	3.12E-06	MNR	MNR	MNR	MNR	MNR	8.77E-01	MNR	MNR	1.35E-05	3.33E-05	1.15E-04	2.58E-02
ADP-elements	kg Sbe	9.44E-03	2.42E-06	3.39E-06	9.45E-03	3.31E-06	4.51E-08	MNR	MNR	MNR	MNR	MNR	4.12E-02	MNR	MNR	2.38E-07	9.43E-06	2.03E-07	3.31E-04
ADP-fossil	MJ	1.75E+03	1.95E+01	9.83E+00	1.78E+03	2.19E+01	1.35E-01	MNR	MNR	MNR	MNR	MNR	9.40E+04	MNR	MNR	1.57E+00	1.26E+00	1.06E+00	5.89E+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
BGP283/293/393 LED47-4S/740	4136.0	26.0	159.1	0.245	0.245	0.184	0.184	0.135	1087.8	817.0	817.0	599.4
BGP283/293/393 LED47-4S/730	4136.0	28.0	147.7	0.264	0.264	0.198	0.198	0.145	1172.2	879.1	879.1	643.8
BGP283/293/393 LED47-4S/727	4136.0	31.0	133.4	0.292	0.292	0.219	0.219	0.161	1296.5	972.4	972.4	714.8
BGP283/293/393 LED47-4S/722	4136.0	35.0	118.2	0.33	0.33	0.247	0.247	0.182	1465.2	1096.7	1096.7	808.1
BGP283/293/393 LED47-4S/830	4136.0	31.0	133.4	0.292	0.292	0.219	0.219	0.161	1296.5	972.4	972.4	714.8
BGP283/293/393 LED50-4S/740	4400.0	28.0	157.1	0.264	0.264	0.198	0.198	0.145	1172.2	879.1	879.1	643.8
BGP283/293/393 LED50-4S/730	4400.0	29.5	149.2	0.278	0.278	0.209	0.209	0.153	1234.3	928.0	928.0	679.3
BGP283/293/393 LED50-4S/727	4400.0	33.0	133.3	0.311	0.311	0.233	0.233	0.171	1380.8	1034.5	1034.5	759.2
BGP283/293/393 LED50-4S/722	4400.0	37.0	118.9	0.349	0.349	0.262	0.262	0.192	1549.6	1163.3	1163.3	852.5
BGP283/293/393 LED50-4S/830	4400.0	33.0	133.3	0.311	0.311	0.233	0.233	0.171	1380.8	1034.5	1034.5	759.2
BGP283/293/393 LED54-4S/740	4752.0	30.0	158.4	0.283	0.283	0.212	0.212	0.156	1256.5	941.3	941.3	692.6
BGP283/293/393 LED54-4S/730	4752.0	32.0	148.5	0.302	0.302	0.226	0.226	0.166	1340.9	1003.4	1003.4	737.0

BGP283/293/393 LED54-4S/727	4752.0	36.0	132.0	0.34	0.34	0.34	0.255	0.255	0.187	1509.6	1132.2	1132.2	830.3
BGP283/293/393 LED54-4S/722	4752.0	40.0	118.8	0.377	0.377	0.377	0.283	0.283	0.207	1673.9	1256.5	1256.5	919.1
BGP283/293/393 LED54-4S/830	4752.0	36.0	132.0	0.34	0.34	0.34	0.255	0.255	0.187	1509.6	1132.2	1132.2	830.3
BGP283/293/393 LED56-4S/740	4928.0	31.0	159.0	0.292	0.292	0.292	0.219	0.219	0.161	1296.5	972.4	972.4	714.8
BGP283/293/393 LED56-4S/730	4928.0	33.0	149.3	0.311	0.311	0.311	0.233	0.233	0.171	1380.8	1034.5	1034.5	759.2
BGP283/293/393 LED56-4S/727	4928.0	37.0	133.2	0.349	0.349	0.349	0.262	0.262	0.192	1549.6	1163.3	1163.3	852.5
BGP283/293/393 LED56-4S/722	4872.0	41.5	117.4	0.392	0.392	0.392	0.294	0.294	0.216	1740.5	1305.4	1305.4	959.0
BGP283/293/393 LED56-4S/830	4928.0	37.0	133.2	0.349	0.349	0.349	0.262	0.262	0.192	1549.6	1163.3	1163.3	852.5
BGP283/293/393 LED60-4S/740	5280.0	33.5	157.6	0.316	0.316	0.316	0.237	0.237	0.174	1403.0	1052.3	1052.3	772.6
BGP283/293/393 LED60-4S/730	5280.0	35.5	148.7	0.335	0.335	0.335	0.251	0.251	0.184	1487.4	1114.4	1114.4	817.0
BGP283/293/393 LED60-4S/727	5280.0	40.0	132.0	0.377	0.377	0.377	0.283	0.283	0.207	1673.9	1256.5	1256.5	919.1
BGP283/293/393 LED60-4S/722	5220.0	44.5	117.3	0.42	0.42	0.42	0.315	0.315	0.231	1864.8	1398.6	1398.6	1025.6
BGP283/293/393 LED60-4S/830	5280.0	40.0	132.0	0.377	0.377	0.377	0.283	0.283	0.207	1673.9	1256.5	1256.5	919.1
BGP283/293/393 LED64-4S/740	5632.0	35.5	158.6	0.335	0.335	0.335	0.251	0.251	0.184	1487.4	1114.4	1114.4	817.0
BGP283/293/393 LED64-4S/730	5632.0	38.0	148.2	0.358	0.358	0.358	0.268	0.268	0.197	1589.5	1189.9	1189.9	874.7
BGP283/293/393 LED64-4S/727	5568.0	42.5	131.0	0.401	0.401	0.401	0.301	0.301	0.221	1780.4	1336.4	1336.4	981.2
BGP283/293/393 LED64-4S/722	5568.0	48.0	116.0	0.453	0.453	0.453	0.34	0.34	0.249	2011.3	1509.6	1509.6	1105.6
BGP283/293/393 LED64-4S/830	5568.0	42.5	131.0	0.401	0.401	0.401	0.301	0.301	0.221	1780.4	1336.4	1336.4	981.2
BGP283/293/393 LED70-4S/740	6160.0	38.0	162.1	0.358	0.358	0.358	0.268	0.268	0.197	1589.5	1189.9	1189.9	874.7
BGP283/293/393 LED70-4S/730	6160.0	40.5	152.1	0.382	0.382	0.382	0.286	0.286	0.21	1696.1	1269.8	1269.8	932.4
BGP283/293/393 LED70-4S/727	6230.0	46.0	135.4	0.434	0.434	0.434	0.326	0.326	0.239	1927.0	1447.4	1447.4	1061.2
BGP283/293/393 LED70-4S/722	6160.0	51.0	120.8	0.481	0.481	0.481	0.361	0.361	0.265	2135.6	1602.8	1602.8	1176.6
BGP283/293/393 LED70-4S/830	6090.0	45.5	133.8	0.429	0.429	0.429	0.322	0.322	0.236	1904.8	1429.7	1429.7	1047.8
BGP283/293/393 LED74-4S/740	6512.0	40.5	160.8	0.382	0.382	0.382	0.286	0.286	0.21	1696.1	1269.8	1269.8	932.4

Product												
BGP283/293/393 LED74-4S/730	6438.0	43.0	149.7	0.406	0.406	0.304	0.304	0.223	1802.6	1349.8	1349.8	990.1
BGP283/293/393 LED74-4S/727	6586.0	48.5	135.8	0.458	0.458	0.344	0.344	0.252	2033.5	1527.4	1527.4	1118.9
BGP283/293/393 LED74-4S/722	6512.0	54.0	120.6	0.509	0.509	0.382	0.382	0.28	2260.0	1696.1	1696.1	1243.2
BGP283/293/393 LED74-4S/830	6438.0	48.0	134.1	0.453	0.453	0.34	0.34	0.249	2011.3	1509.6	1509.6	1105.6
BGP283/293/393 LED80-4S/740	6960.0	43.5	160.0	0.41	0.41	0.307	0.307	0.226	1820.4	1363.1	1363.1	1003.4
BGP283/293/393 LED80-4S/730	6960.0	46.5	149.7	0.439	0.439	0.329	0.329	0.241	1949.2	1460.8	1460.8	1070.0
BGP283/293/393 LED80-4S/727	7040.0	53.0	132.8	0.5	0.5	0.375	0.375	0.275	2220.0	1665.0	1665.0	1221.0
BGP283/293/393 LED80-4S/722	7040.0	59.0	119.3	0.557	0.557	0.418	0.418	0.306	2473.1	1855.9	1855.9	1358.6
BGP283/293/393 LED80-4S/830	6960.0	52.0	133.8	0.491	0.491	0.368	0.368	0.27	2180.0	1633.9	1633.9	1198.8
BGP283/293/393 LED84-4S/740	7308.0	46.0	158.9	0.434	0.434	0.326	0.326	0.239	1927.0	1447.4	1447.4	1061.2
BGP283/293/393 LED84-4S/730	7308.0	49.0	149.1	0.462	0.462	0.347	0.347	0.254	2051.3	1540.7	1540.7	1127.8
BGP283/293/393 LED84-4S/727	7392.0	55.0	134.4	0.519	0.519	0.389	0.389	0.285	2304.4	1727.2	1727.2	1265.4
BGP283/293/393 LED84-4S/722	7392.0	62.0	119.2	0.585	0.585	0.439	0.439	0.322	2597.4	1949.2	1949.2	1429.7
BGP283/293/393 LED84-4S/830	7308.0	55.0	132.9	0.519	0.519	0.389	0.389	0.285	2304.4	1727.2	1727.2	1265.4
BGP283/293/393 LED90-4S/740	7830.0	49.5	158.2	0.467	0.467	0.35	0.35	0.257	2073.5	1554.0	1554.0	1141.1
BGP283/293/393 LED90-4S/730	7830.0	52.0	150.6	0.491	0.491	0.368	0.368	0.27	2180.0	1633.9	1633.9	1198.8
BGP283/293/393 LED90-4S/727	7920.0	59.0	134.2	0.557	0.557	0.418	0.418	0.306	2473.1	1855.9	1855.9	1358.6
BGP283/293/393 LED90-4S/722	7920.0	67.0	118.2	0.632	0.632	0.474	0.474	0.348	2806.1	2104.6	2104.6	1545.1
BGP283/293/393 LED90-4S/830	7830.0	59.0	132.7	0.557	0.557	0.418	0.418	0.306	2473.1	1855.9	1855.9	1358.6
BGP283/293/393 LED94-4S/740	8178.0	52.0	157.3	0.491	0.491	0.368	0.368	0.27	2180.0	1633.9	1633.9	1198.8
BGP283/293/393 LED94-4S/730	8178.0	55.0	148.7	0.519	0.519	0.389	0.389	0.285	2304.4	1727.2	1727.2	1265.4
BGP283/293/393 LED94-4S/727	8272.0	62.0	133.4	0.585	0.585	0.439	0.439	0.322	2597.4	1949.2	1949.2	1429.7
BGP283/293/393 LED94-4S/722	8272.0	70.0	118.2	0.66	0.66	0.495	0.495	0.363	2930.4	2197.8	2197.8	1611.7
BGP283/293/393 LED94-4S/830	8178.0	62.0	131.9	0.585	0.585	0.439	0.439	0.322	2597.4	1949.2	1949.2	1429.7

BGP283/293/393 LED99-4S/740	8700.0	54.0	161.1	0.509	0.509	0.382	0.382	0.28	2260.0	1696.1	1696.1	1243.2
BGP283/293/393 LED99-4S/730	8700.0	58.0	150.0	0.547	0.547	0.41	0.41	0.301	2428.7	1820.4	1820.4	1336.4
BGP283/293/393 LED99-4S/727	8800.0	66.0	133.3	0.623	0.623	0.467	0.467	0.343	2766.1	2073.5	2073.5	1522.9
BGP283/293/393 LED99-4S/722	8800.0	74.0	118.9	0.698	0.698	0.523	0.523	0.384	3099.1	2322.1	2322.1	1705.0
BGP283/293/393 LED99-4S/830	8600.0	65.0	132.3	0.613	0.613	0.46	0.46	0.337	2721.7	2042.4	2042.4	1496.3
BGP283/293/393 LED109-4S/740	9570.0	60.0	159.5	0.566	0.566	0.424	0.424	0.311	2513.0	1882.6	1882.6	1380.8
BGP283/293/393 LED109-4S/730	9460.0	64.0	147.8	0.604	0.604	0.453	0.453	0.332	2681.8	2011.3	2011.3	1474.1
BGP283/293/393 LED109-4S/727	9680.0	73.0	132.6	0.689	0.689	0.517	0.517	0.379	3059.2	2295.5	2295.5	1682.8
BGP283/293/393 LED109-4S/722	9570.0	82.0	116.7	0.774	0.774	0.581	0.581	0.426	3436.6	2579.6	2579.6	1891.4
BGP283/293/393 LED109-4S/830	9460.0	72.0	131.4	0.679	0.679	0.509	0.509	0.373	3014.8	2260.0	2260.0	1656.1
BGP283/293/393 LED119-4S/740	10320.0	66.0	156.4	0.623	0.623	0.467	0.467	0.343	2766.1	2073.5	2073.5	1522.9
BGP283/293/393 LED119-4S/730	10320.0	70.0	147.4	0.66	0.66	0.495	0.495	0.363	2930.4	2197.8	2197.8	1611.7
BGP283/293/393 LED119-4S/727	10440.0	80.0	130.5	0.755	0.755	0.566	0.566	0.415	3352.2	2513.0	2513.0	1842.6
BGP283/293/393 LED119-4S/722	10440.0	90.0	116.0	0.849	0.849	0.637	0.637	0.467	3769.6	2828.3	2828.3	2073.5
BGP283/293/393 LED119-4S/830	10320.0	79.0	130.6	0.745	0.745	0.559	0.559	0.41	3307.8	2482.0	2482.0	1820.4
BGP283/293/393 LED130-4S/740	11180.0	72.0	155.3	0.679	0.679	0.509	0.509	0.373	3014.8	2260.0	2260.0	1656.1
BGP283/293/393 LED130-4S/730	11180.0	77.0	145.2	0.726	0.726	0.544	0.544	0.399	3223.4	2415.4	2415.4	1771.6
BGP283/293/393 LED130-4S/727	11310.0	88.0	128.5	0.83	0.83	0.622	0.622	0.457	3685.2	2761.7	2761.7	2029.1
BGP283/293/393 LED130-4S/722	11180.0	100.0	111.8	0.943	0.943	0.707	0.707	0.519	4186.9	3139.1	3139.1	2304.4
BGP283/293/393 LED130-4S/830	11050.0	88.0	125.6	0.83	0.83	0.622	0.622	0.457	3685.2	2761.7	2761.7	2029.1
BGP283/293/393 LED139-4S/740	12040.0	78.0	154.4	0.736	0.736	0.552	0.552	0.405	3267.8	2450.9	2450.9	1798.2
BGP283/293/393 LED139-4S/730	11900.0	83.0	143.4	0.783	0.783	0.587	0.587	0.431	3476.5	2606.3	2606.3	1913.6
BGP283/293/393 LED139-4S/727	12180.0	95.0	128.2	0.896	0.896	0.672	0.672	0.493	3978.2	2983.7	2983.7	2188.9
BGP283/293/393 LED139-4S/722	12040.0	108.0	111.5	1.019	1.019	0.764	0.764	0.56	4524.4	3392.2	3392.2	2486.4

BGP283/293/393 LED139-4S/830	11900.0	94.0	126.6	0.887	0.887	0.665	0.665	0.488	3938.3	2952.6	2952.6	2166.7
BGP283/293/393 LED149-4S/740	12750.0	84.0	151.8	0.792	0.792	0.594	0.594	0.436	3516.5	2637.4	2637.4	1935.8
BGP283/293/393 LED149-4S/730	12750.0	90.0	141.7	0.849	0.849	0.637	0.637	0.467	3769.6	2828.3	2828.3	2073.5
BGP283/293/393 LED149-4S/727	12900.0	104.0	124.0	0.981	0.981	0.736	0.736	0.54	4355.6	3267.8	3267.8	2397.6
BGP283/293/393 LED149-4S/722	13050.0	112.0	116.5	1.057	1.057	0.793	0.793	0.581	4693.1	3520.9	3520.9	2579.6
BGP283/293/393 LED149-4S/830	12750.0	102.0	125.0	0.962	0.962	0.722	0.722	0.529	4271.3	3205.7	3205.7	2348.8
BGP283/293/393 LED160-4S/740	13600.0	91.0	149.5	0.858	0.858	0.643	0.643	0.472	3809.5	2854.9	2854.9	2095.7
BGP283/293/393 LED160-4S/730	13600.0	97.0	140.2	0.915	0.915	0.686	0.686	0.503	4062.6	3045.8	3045.8	2233.3
BGP283/293/393 LED160-4S/722	13760.0	120.0	114.7	1.132	1.132	0.849	0.849	0.623	5026.1	3769.6	3769.6	2766.1
BGP283/293/393 LED160-4S/830	13600.0	106.0	128.3	1.0	1.0	0.75	0.75	0.55	4440.0	3330.0	3330.0	2442.0
BGP283/293/393 LED170-4S/740	14450.0	97.0	149.0	0.915	0.915	0.686	0.686	0.503	4062.6	3045.8	3045.8	2233.3
BGP283/293/393 LED170-4S/730	14450.0	104.0	138.9	0.981	0.981	0.736	0.736	0.54	4355.6	3267.8	3267.8	2397.6
BGP283/293/393 LED170-4S/727	14790.0	114.0	129.7	1.075	1.075	0.806	0.806	0.591	4773.0	3578.6	3578.6	2624.0
BGP283/293/393 LED170-4S/722	14620.0	130.0	112.5	1.226	1.226	0.919	0.919	0.674	5443.4	4080.4	4080.4	2992.6
BGP283/293/393 LED170-4S/830	14280.0	112.0	127.5	1.057	1.057	0.793	0.793	0.581	4693.1	3520.9	3520.9	2579.6
BGP283/293/393 LED180-4S/740	15300.0	104.0	147.1	0.981	0.981	0.736	0.736	0.54	4355.6	3267.8	3267.8	2397.6
BGP293 LED180-4S/730 II DM50 D9 48/60S	15300.0	106.0	144.3	1.0	1.0	0.75	0.75	0.55	4440.0	3330.0	3330.0	2442.0
BGP283/293/393 LED180-4S/727	15480.0	122.0	126.9	1.151	1.151	0.863	0.863	0.633	5110.4	3831.7	3831.7	2810.5
BGP283/293/393 LED180-4S/830	15120.0	120.0	126.0	1.132	1.132	0.849	0.849	0.623	5026.1	3769.6	3769.6	2766.1
BGP283/293/393 LED190-4S/740	16150.0	106.0	152.4	1.0	1.0	0.75	0.75	0.55	4440.0	3330.0	3330.0	2442.0
BGP283/293/393 LED190-4S/730	15960.0	112.0	142.5	1.057	1.057	0.793	0.793	0.581	4693.1	3520.9	3520.9	2579.6
BGP283/293/393 LED190-4S/727	16340.0	130.0	125.7	1.226	1.226	0.919	0.919	0.674	5443.4	4080.4	4080.4	2992.6
BGP283/293/393 LED190-4S/830	15770.0	128.0	123.2	1.208	1.208	0.906	0.906	0.664	5363.5	4022.6	4022.6	2948.2
BGP283/293/393 LED200-4S/740	16800.0	112.0	150.0	1.057	1.057	0.793	0.793	0.581	4693.1	3520.9	3520.9	2579.6

BGP283/293/393 LED200-4S/730	16800.0	118.0	142.4	1.113	1.113	0.835	0.835	0.612	4941.7	3707.4	3707.4	2717.3
BGP283/293/393 LED200-4S/727	17200.0	138.0	124.6	1.302	1.302	0.977	0.977	0.716	5780.9	4337.9	4337.9	3179.0
BGP283/293/393 LED200-4S/830	16400.0	136.0	120.6	1.283	1.283	0.962	0.962	0.706	5696.5	4271.3	4271.3	3134.6
BGP283/293/393 LED215-4S/727	18700.0	150.0	124.7	1.415	1.415	1.061	1.061	0.778	6282.6	4710.8	4710.8	3454.3
BGP283/293/393 LED220-4S/740	18260.0	124.0	147.3	1.17	1.17	0.877	0.877	0.643	5194.8	3893.9	3893.9	2854.9
BGP283/293/393 LED220-4S/730	18260.0	132.0	138.3	1.245	1.245	0.934	0.934	0.685	5527.8	4147.0	4147.0	3041.4
BGP283/293/393 LED240-4S/740	19680.0	136.0	144.7	1.283	1.283	0.962	0.962	0.706	5696.5	4271.3	4271.3	3134.6
BGP283/293/393 LED240-4S/730	19440.0	146.0	133.2	1.377	1.377	1.033	1.033	0.757	6113.9	4586.5	4586.5	3361.1

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 refence 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 (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 to 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
BGP283/293/393 LED47-4S/740	4136.0	26.0	159.1	0.245	0.021	0.016	0.016	0.012	93.2	71.0	71.0	53.3
BGP283/293/393 LED47-4S/730	4136.0	28.0	147.7	0.264	0.022	0.017	0.017	0.012	97.7	75.5	75.5	53.3
BGP283/293/393 LED47-4S/727	4136.0	31.0	133.4	0.292	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED47-4S/722	4136.0	35.0	118.2	0.33	0.028	0.021	0.021	0.015	124.3	93.2	93.2	66.6
BGP283/293/393 LED47-4S/830	4136.0	31.0	133.4	0.292	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED50-4S/740	4400.0	28.0	157.1	0.264	0.021	0.016	0.016	0.012	93.2	71.0	71.0	53.3
BGP283/293/393 LED50-4S/730	4400.0	29.5	149.2	0.278	0.022	0.017	0.017	0.012	97.7	75.5	75.5	53.3
BGP283/293/393 LED50-4S/727	4400.0	33.0	133.3	0.311	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2

Product													
BGP283/293/393 LED50-4S/722		4400.0	37.0	118.9	0.349	0.028	0.021	0.021	0.015	124.3	93.2	93.2	66.6
BGP283/293/393 LED50-4S/830		4400.0	33.0	133.3	0.311	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED54-4S/740		4752.0	30.0	158.4	0.283	0.021	0.016	0.016	0.012	93.2	71.0	71.0	53.3
BGP283/293/393 LED54-4S/730		4752.0	32.0	148.5	0.302	0.022	0.017	0.017	0.012	97.7	75.5	75.5	53.3
BGP283/293/393 LED54-4S/727		4752.0	36.0	132.0	0.34	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED54-4S/722		4752.0	40.0	118.8	0.377	0.028	0.021	0.021	0.015	124.3	93.2	93.2	66.6
BGP283/293/393 LED54-4S/830		4752.0	36.0	132.0	0.34	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED56-4S/740		4928.0	31.0	159.0	0.292	0.021	0.016	0.016	0.012	93.2	71.0	71.0	53.3
BGP283/293/393 LED56-4S/730		4928.0	33.0	149.3	0.311	0.022	0.017	0.017	0.012	97.7	75.5	75.5	53.3
BGP283/293/393 LED56-4S/727		4928.0	37.0	133.2	0.349	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED56-4S/722		4872.0	41.5	117.4	0.392	0.028	0.021	0.021	0.015	124.3	93.2	93.2	66.6
BGP283/293/393 LED56-4S/830		4928.0	37.0	133.2	0.349	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED60-4S/740		5280.0	33.5	157.6	0.316	0.021	0.016	0.016	0.012	93.2	71.0	71.0	53.3
BGP283/293/393 LED60-4S/730		5280.0	35.5	148.7	0.335	0.022	0.017	0.017	0.012	97.7	75.5	75.5	53.3
BGP283/293/393 LED60-4S/727		5280.0	40.0	132.0	0.377	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED60-4S/722		5220.0	44.5	117.3	0.42	0.028	0.021	0.021	0.015	124.3	93.2	93.2	66.6
BGP283/293/393 LED60-4S/830		5280.0	40.0	132.0	0.377	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED64-4S/740		5632.0	35.5	158.6	0.335	0.021	0.016	0.016	0.012	93.2	71.0	71.0	53.3
BGP283/293/393 LED64-4S/730		5632.0	38.0	148.2	0.358	0.022	0.017	0.017	0.012	97.7	75.5	75.5	53.3
BGP283/293/393 LED64-4S/727		5568.0	42.5	131.0	0.401	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED64-4S/722		5568.0	48.0	116.0	0.453	0.029	0.022	0.022	0.016	128.8	97.7	97.7	71.0
BGP283/293/393 LED64-4S/830		5568.0	42.5	131.0	0.401	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED70-4S/740		6160.0	38.0	162.1	0.358	0.02	0.015	0.015	0.011	88.8	66.6	66.6	48.8
BGP283/293/393 LED70-4S/730		6160.0	40.5	152.1	0.382	0.022	0.017	0.017	0.012	97.7	75.5	75.5	53.3

BGP283/293/393 LED70-4S/727	6230.0	46.0	135.4	0.434	0.024	0.018	0.018	0.013	106.6	79.9	79.9	57.7
BGP283/293/393 LED70-4S/722	6160.0	51.0	120.8	0.481	0.027	0.02	0.02	0.015	119.9	88.8	88.8	66.6
BGP283/293/393 LED70-4S/830	6090.0	45.5	133.8	0.429	0.024	0.018	0.018	0.013	106.6	79.9	79.9	57.7
BGP283/293/393 LED74-4S/740	6512.0	40.5	160.8	0.382	0.021	0.016	0.016	0.012	93.2	71.0	71.0	53.3
BGP283/293/393 LED74-4S/730	6438.0	43.0	149.7	0.406	0.022	0.017	0.017	0.012	97.7	75.5	75.5	53.3
BGP283/293/393 LED74-4S/727	6586.0	48.5	135.8	0.458	0.024	0.018	0.018	0.013	106.6	79.9	79.9	57.7
BGP283/293/393 LED74-4S/722	6512.0	54.0	120.6	0.509	0.027	0.02	0.02	0.015	119.9	88.8	88.8	66.6
BGP283/293/393 LED74-4S/830	6438.0	48.0	134.1	0.453	0.024	0.018	0.018	0.013	106.6	79.9	79.9	57.7
BGP283/293/393 LED80-4S/740	6960.0	43.5	160.0	0.41	0.021	0.016	0.016	0.012	93.2	71.0	71.0	53.3
BGP283/293/393 LED80-4S/730	6960.0	46.5	149.7	0.439	0.022	0.017	0.017	0.012	97.7	75.5	75.5	53.3
BGP283/293/393 LED80-4S/727	7040.0	53.0	132.8	0.5	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED80-4S/722	7040.0	59.0	119.3	0.557	0.028	0.021	0.021	0.015	124.3	93.2	93.2	66.6
BGP283/293/393 LED80-4S/830	6960.0	52.0	133.8	0.491	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED84-4S/740	7308.0	46.0	158.9	0.434	0.021	0.016	0.016	0.012	93.2	71.0	71.0	53.3
BGP283/293/393 LED84-4S/730	7308.0	49.0	149.1	0.462	0.022	0.017	0.017	0.012	97.7	75.5	75.5	53.3
BGP283/293/393 LED84-4S/727	7392.0	55.0	134.4	0.519	0.024	0.018	0.018	0.013	106.6	79.9	79.9	57.7
BGP283/293/393 LED84-4S/722	7392.0	62.0	119.2	0.585	0.027	0.02	0.02	0.015	119.9	88.8	88.8	66.6
BGP283/293/393 LED84-4S/830	7308.0	55.0	132.9	0.519	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED90-4S/740	7830.0	49.5	158.2	0.467	0.021	0.016	0.016	0.012	93.2	71.0	71.0	53.3
BGP283/293/393 LED90-4S/730	7830.0	52.0	150.6	0.491	0.022	0.017	0.017	0.012	97.7	75.5	75.5	53.3
BGP283/293/393 LED90-4S/727	7920.0	59.0	134.2	0.557	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED90-4S/722	7920.0	67.0	118.2	0.632	0.028	0.021	0.021	0.015	124.3	93.2	93.2	66.6
BGP283/293/393 LED90-4S/830	7830.0	59.0	132.7	0.557	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED94-4S/740	8178.0	52.0	157.3	0.491	0.021	0.016	0.016	0.012	93.2	71.0	71.0	53.3

BGP283/293/393 LED94-4S/730	8178.0	55.0	148.7	0.519	0.022	0.017	0.017	0.012	97.7	75.5	75.5	53.3
BGP283/293/393 LED94-4S/727	8272.0	62.0	133.4	0.585	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED94-4S/722	8272.0	70.0	118.2	0.66	0.028	0.021	0.021	0.015	124.3	93.2	93.2	66.6
BGP283/293/393 LED94-4S/830	8178.0	62.0	131.9	0.585	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED99-4S/740	8700.0	54.0	161.1	0.509	0.02	0.015	0.015	0.011	88.8	66.6	66.6	48.8
BGP283/293/393 LED99-4S/730	8700.0	58.0	150.0	0.547	0.022	0.017	0.017	0.012	97.7	75.5	75.5	53.3
BGP283/293/393 LED99-4S/727	8800.0	66.0	133.3	0.623	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED99-4S/722	8800.0	74.0	118.9	0.698	0.028	0.021	0.021	0.015	124.3	93.2	93.2	66.6
BGP283/293/393 LED99-4S/830	8600.0	65.0	132.3	0.613	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED109-4S/740	9570.0	60.0	159.5	0.566	0.021	0.016	0.016	0.012	93.2	71.0	71.0	53.3
BGP283/293/393 LED109-4S/730	9460.0	64.0	147.8	0.604	0.022	0.017	0.017	0.012	97.7	75.5	75.5	53.3
BGP283/293/393 LED109-4S/727	9680.0	73.0	132.6	0.689	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED109-4S/722	9570.0	82.0	116.7	0.774	0.029	0.022	0.022	0.016	128.8	97.7	97.7	71.0
BGP283/293/393 LED109-4S/830	9460.0	72.0	131.4	0.679	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED119-4S/740	10320.0	66.0	156.4	0.623	0.021	0.016	0.016	0.012	93.2	71.0	71.0	53.3
BGP283/293/393 LED119-4S/730	10320.0	70.0	147.4	0.66	0.022	0.017	0.017	0.012	97.7	75.5	75.5	53.3
BGP283/293/393 LED119-4S/727	10440.0	80.0	130.5	0.755	0.026	0.019	0.019	0.014	115.4	84.4	84.4	62.2
BGP283/293/393 LED119-4S/722	10440.0	90.0	116.0	0.849	0.029	0.022	0.022	0.016	128.8	97.7	97.7	71.0
BGP283/293/393 LED119-4S/830	10320.0	79.0	130.6	0.745	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2
BGP283/293/393 LED130-4S/740	11180.0	72.0	155.3	0.679	0.021	0.016	0.016	0.012	93.2	71.0	71.0	53.3
BGP283/293/393 LED130-4S/730	11180.0	77.0	145.2	0.726	0.023	0.017	0.017	0.013	102.1	75.5	75.5	57.7
BGP283/293/393 LED130-4S/727	11310.0	88.0	128.5	0.83	0.026	0.019	0.019	0.014	115.4	84.4	84.4	62.2
BGP283/293/393 LED130-4S/722	11180.0	100.0	111.8	0.943	0.029	0.022	0.022	0.016	128.8	97.7	97.7	71.0
BGP283/293/393 LED130-4S/830	11050.0	88.0	125.6	0.83	0.027	0.02	0.02	0.015	119.9	88.8	88.8	66.6

Product												
BGP283/293/393 LED139-4S/740	12040.0	78.0	154.4	0.736	0.021	0.016	0.016	0.012	93.2	71.0	71.0	53.3
BGP283/293/393 LED139-4S/730	11900.0	83.0	143.4	0.783	0.023	0.017	0.017	0.013	102.1	75.5	75.5	57.7
BGP283/293/393 LED139-4S/727	12180.0	95.0	128.2	0.896	0.026	0.019	0.019	0.014	115.4	84.4	84.4	62.2
BGP283/293/393 LED139-4S/722	12040.0	108.0	111.5	1.019	0.03	0.022	0.022	0.017	133.2	97.7	97.7	75.5
BGP283/293/393 LED139-4S/830	11900.0	94.0	126.6	0.887	0.026	0.019	0.019	0.014	115.4	84.4	84.4	62.2
BGP283/293/393 LED149-4S/740	12750.0	84.0	151.8	0.792	0.021	0.016	0.016	0.012	93.2	71.0	71.0	53.3
BGP283/293/393 LED149-4S/730	12750.0	90.0	141.7	0.849	0.023	0.017	0.017	0.013	102.1	75.5	75.5	57.7
BGP283/293/393 LED149-4S/727	12900.0	104.0	124.0	0.981	0.026	0.019	0.019	0.014	115.4	84.4	84.4	62.2
BGP283/293/393 LED149-4S/722	13050.0	112.0	116.5	1.057	0.029	0.022	0.022	0.016	128.8	97.7	97.7	71.0
BGP283/293/393 LED149-4S/830	12750.0	102.0	125.0	0.962	0.026	0.019	0.019	0.014	115.4	84.4	84.4	62.2
BGP283/293/393 LED160-4S/740	13600.0	91.0	149.5	0.858	0.022	0.017	0.017	0.012	97.7	75.5	75.5	53.3
BGP283/293/393 LED160-4S/730	13600.0	97.0	140.2	0.915	0.024	0.018	0.018	0.013	106.6	79.9	79.9	57.7
BGP283/293/393 LED160-4S/722	13760.0	120.0	114.7	1.132	0.028	0.021	0.021	0.015	124.3	93.2	93.2	66.6
BGP283/293/393 LED160-4S/830	13600.0	106.0	128.3	1.0	0.026	0.019	0.019	0.014	115.4	84.4	84.4	62.2
BGP283/293/393 LED170-4S/740	14450.0	97.0	149.0	0.915	0.022	0.017	0.017	0.012	97.7	75.5	75.5	53.3
BGP283/293/393 LED170-4S/730	14450.0	104.0	138.9	0.981	0.024	0.018	0.018	0.013	106.6	79.9	79.9	57.7
BGP283/293/393 LED170-4S/727	14790.0	114.0	129.7	1.075	0.026	0.019	0.019	0.014	115.4	84.4	84.4	62.2
BGP283/293/393 LED170-4S/722	14620.0	130.0	112.5	1.226	0.029	0.022	0.022	0.016	128.8	97.7	97.7	71.0
BGP283/293/393 LED170-4S/830	14280.0	112.0	127.5	1.057	0.026	0.019	0.019	0.014	115.4	84.4	84.4	62.2
BGP283/293/393 LED180-4S/740	15300.0	104.0	147.1	0.981	0.023	0.017	0.017	0.013	102.1	75.5	75.5	57.7
BGP293 LED180-4S/730 II DM50 D9 48/60S	15300.0	106.0	144.3	1.0	0.023	0.017	0.017	0.013	102.1	75.5	75.5	57.7
BGP283/293/393 LED180-4S/727	15480.0	122.0	126.9	1.151	0.026	0.019	0.019	0.014	115.4	84.4	84.4	62.2
BGP283/293/393 LED180-4S/830	15120.0	120.0	126.0	1.132	0.026	0.019	0.019	0.014	115.4	84.4	84.4	62.2
BGP283/293/393 LED190-4S/740	16150.0	106.0	152.4	1.0	0.022	0.017	0.017	0.012	97.7	75.5	75.5	53.3

BGP283/293/393 LED190-4S/730	15960.0	112.0	142.5	1.057	0.023	0.017	0.017	0.013	102.1	75.5	75.5	57.7
BGP283/293/393 LED190-4S/727	16340.0	130.0	125.7	1.226	0.026	0.019	0.019	0.014	115.4	84.4	84.4	62.2
BGP283/293/393 LED190-4S/830	15770.0	128.0	123.2	1.208	0.027	0.02	0.02	0.015	119.9	88.8	88.8	66.6
BGP283/293/393 LED200-4S/740	16800.0	112.0	150.0	1.057	0.022	0.017	0.017	0.012	97.7	75.5	75.5	53.3
BGP283/293/393 LED200-4S/730	16800.0	118.0	142.4	1.113	0.023	0.017	0.017	0.013	102.1	75.5	75.5	57.7
BGP283/293/393 LED200-4S/727	17200.0	138.0	124.6	1.302	0.026	0.019	0.019	0.014	115.4	84.4	84.4	62.2
BGP283/293/393 LED200-4S/830	16400.0	136.0	120.6	1.283	0.027	0.02	0.02	0.015	119.9	88.8	88.8	66.6
BGP283/293/393 LED215-4S/727	18700.0	150.0	124.7	1.415	0.027	0.02	0.02	0.015	119.9	88.8	88.8	66.6
BGP283/293/393 LED220-4S/740	18260.0	124.0	147.3	1.17	0.022	0.017	0.017	0.012	97.7	75.5	75.5	53.3
BGP283/293/393 LED220-4S/730	18260.0	132.0	138.3	1.245	0.024	0.018	0.018	0.013	106.6	79.9	79.9	57.7
BGP283/293/393 LED240-4S/740	19680.0	136.0	144.7	1.283	0.023	0.017	0.017	0.013	102.1	75.5	75.5	57.7
BGP283/293/393 LED240-4S/730	19440.0	146.0	133.2	1.377	0.025	0.019	0.019	0.014	111.0	84.4	84.4	62.2

*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.

26