

ENVIRONMENTAL PRODUCT DECLARATION

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

UniStreet/LumiStreet gen2 Large
BGP284/294/394
Signify N.V.

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

GENERAL INFORMATION

MANUFACTURER

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

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR version 1.0, 1 Feb 2022
Sector	Electrical product
Category of EPD	Pre-verified EPD
Scope of the EPD	Cradle to gate with options, A4-B7, and modules C1-C4, D
EPD author	Sustainability Signify
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input checked="" type="checkbox"/> Internal certification <input type="checkbox"/> External verification

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

PRODUCT

Product name	Unistreet/Lumistreet gen2 Large
Additional labels	BGP284 LED280-4S/730 II DM12 DDF2 D24 SR
Product reference	910770226665
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	12.698 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	1.09E+02
GWP-total, A1-A3 (kgCO ₂ e)	1.08E+02
Secondary material, inputs (%)	35.1
Secondary material, outputs (%)	54.1
Total energy use, A1-A3 (kWh)	371
Net fresh water use, A1-A3 (m ³)	0.74

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/LumiStreet 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 Service tag and the 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/LumiStreet 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.

Further information can be found at <https://www.signify.com/global>.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	51.33	EU , APAC
Minerals	22.49	EU , APAC
Fossil materials	26.18	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	0.001

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 unit
Mass per declared unit	12.698 kg
Functional unit	24406 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 UniStreet/LumiStreet gen2 Large

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: $\text{Wattage} \times \text{Reference lifetime} = \text{kWh}$ consumed throughout the entire use phase B6.

PRODUCT END OF LIFE (C1-C4, D)

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

SYSTEM BOUNDARY



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

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

ALLOCATION, ESTIMATES AND ASSUMPTIONS

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

Data type	Allocation
Raw materials	No allocation
No allocation	No allocation
No allocation	Allocated by mass or volume
Allocated by mass or volume	Allocated by mass or volume

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

AVERAGES AND VARIABILITY

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

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

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. Ecoinvent 3.8 database was used as the source of environmental data.

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	1,05E+02	2,39E+00	5,37E-01	1,08E+02	2,39E+00	4,17E-03	MNR	MNR	MNR	MNR	MNR	6,54E+03	MNR	MNR	1,76E-01	3,36E+00	2,10E+00	-1,63E+01
GWP – fossil	kg CO ₂ e	1,06E+02	2,39E+00	5,40E-01	1,09E+02	2,38E+00	8,54E-04	MNR	MNR	MNR	MNR	MNR	6,52E+03	MNR	MNR	1,76E-01	3,36E+00	2,10E+00	-1,63E+01
GWP – biogenic	kg CO ₂ e	-9,03E-01	0,00E+00	-2,90E-03	-9,06E-01	9,22E-04	3,31E-03	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	0,00E+00	0,00E+00	-7,59E-03
GWP – LULUC	kg CO ₂ e	1,60E-01	1,37E-03	1,92E-04	1,61E-01	8,79E-04	4,18E-08	MNR	MNR	MNR	MNR	MNR	1,52E+01	MNR	MNR	6,49E-05	2,18E-04	1,68E-04	-3,58E-03
Ozone depletion pot.	kg CFC _{1,1,1} e	1,94E-05	5,06E-07	1,01E-07	2,00E-05	5,48E-07	9,65E-12	MNR	MNR	MNR	MNR	MNR	3,31E-04	MNR	MNR	4,05E-08	2,03E-08	2,13E-08	-4,42E-07
Acidification potential	mol H ⁺ e	8,38E-01	4,86E-02	1,16E-03	8,88E-01	1,01E-02	9,60E-07	MNR	MNR	MNR	MNR	MNR	3,73E+01	MNR	MNR	7,45E-04	2,11E-03	1,12E-03	-2,20E-01
EP-freshwater ²⁾	kg Pe	5,73E-03	1,33E-05	4,40E-06	5,74E-03	1,95E-05	1,11E-09	MNR	MNR	MNR	MNR	MNR	6,91E-01	MNR	MNR	1,44E-06	6,59E-06	9,62E-06	-1,18E-03
EP-marine	kg Ne	1,18E-01	1,22E-02	2,66E-04	1,31E-01	3,00E-03	4,45E-07	MNR	MNR	MNR	MNR	MNR	4,94E+00	MNR	MNR	2,21E-04	6,39E-04	2,21E-03	-1,98E-02
EP-terrestrial	mol Ne	1,25E+00	1,35E-01	2,69E-03	1,39E+00	3,31E-02	4,53E-06	MNR	MNR	MNR	MNR	MNR	5,62E+01	MNR	MNR	2,44E-03	6,92E-03	4,09E-03	-2,38E-01
POCP (“smog”) ³⁾	kg NMVOCe	3,99E-01	3,59E-02	1,19E-03	4,36E-01	1,06E-02	1,12E-06	MNR	MNR	MNR	MNR	MNR	1,54E+01	MNR	MNR	7,81E-04	1,79E-03	1,42E-03	-6,83E-02
ADP-minerals & metals ⁴⁾	kg Sbe	8,61E-03	4,29E-06	2,42E-06	8,62E-03	5,59E-06	3,03E-10	MNR	MNR	MNR	MNR	MNR	6,09E-02	MNR	MNR	4,12E-07	1,28E-05	4,58E-07	-1,99E-03
ADP-fossil resources	MJ	1,27E+03	3,25E+01	7,73E+00	1,31E+03	3,58E+01	8,92E-04	MNR	MNR	MNR	MNR	MNR	1,39E+05	MNR	MNR	2,64E+00	2,20E+00	1,97E+00	-1,61E+02
Water use ⁵⁾	m ³ e depr.	3,63E+01	1,20E-01	6,21E-02	3,65E+01	1,60E-01	1,85E-04	MNR	MNR	MNR	MNR	MNR	3,79E+03	MNR	MNR	1,18E-02	1,55E-01	1,35E-01	-1,77E+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	7,44E-06	1,61E-07	1,85E-08	7,62E-06	2,75E-07	8,02E-12	MNR	MNR	MNR	MNR	MNR	1,22E-04	MNR	MNR	2,03E-08	2,31E-08	1,54E-08	-1,11E-06
Ionizing radiation ⁶⁾	kBq U235e	6,11E+00	1,52E-01	9,03E-03	6,27E+00	1,70E-01	2,66E-06	MNR	MNR	MNR	MNR	MNR	3,76E+03	MNR	MNR	1,26E-02	1,26E-02	9,94E-03	-9,65E-01
Ecotoxicity (freshwater)	CTUe	5,69E+03	2,47E+01	8,32E+00	5,72E+03	3,22E+01	3,66E-03	MNR	MNR	MNR	MNR	MNR	9,44E+04	MNR	MNR	2,38E+00	1,36E+01	5,56E+02	-9,05E+02
Human toxicity, cancer	CTUh	2,64E-07	1,16E-09	3,74E-10	2,66E-07	7,91E-10	3,47E-13	MNR	MNR	MNR	MNR	MNR	3,09E-06	MNR	MNR	5,84E-11	4,95E-10	1,83E-09	-9,79E-09
Human tox. non-cancer	CTUh	4,86E-06	2,06E-08	3,41E-09	4,89E-06	3,19E-08	1,43E-11	MNR	MNR	MNR	MNR	MNR	1,02E-04	MNR	MNR	2,35E-09	1,94E-08	9,49E-08	-1,31E-06
SQP ⁷⁾	-	4,75E+02	2,01E+01	1,76E+00	4,97E+02	4,13E+01	5,39E-04	MNR	MNR	MNR	MNR	MNR	2,51E+04	MNR	MNR	3,04E+00	3,00E+00	2,94E+00	-5,83E+01

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

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy ⁸⁾	MJ	1,11E+02	2,91E-01	8,38E+00	1,19E+02	4,03E-01	2,09E-05	MNR	MNR	MNR	MNR	MNR	2,83E+04	MNR	MNR	2,98E-02	2,54E-01	7,78E-02	-6,50E+00
Renew. PER as material	MJ	1,08E+01	0,00E+00	3,26E-02	1,08E+01	0,00E+00	-3,26E-02	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	-9,15E-01	-1,70E+00	0,00E+00
Total use of renew. PER	MJ	1,22E+02	2,91E-01	8,41E+00	1,30E+02	4,03E-01	-3,26E-02	MNR	MNR	MNR	MNR	MNR	2,83E+04	MNR	MNR	2,98E-02	-6,62E-01	-1,62E+00	-6,50E+00
Non-re. PER as energy	MJ	1,18E+03	3,25E+01	7,24E+00	1,22E+03	3,58E+01	8,92E-04	MNR	MNR	MNR	MNR	MNR	1,38E+05	MNR	MNR	2,64E+00	2,20E+00	1,97E+00	-1,60E+02
Non-re. PER as material	MJ	9,04E+01	0,00E+00	8,44E-04	9,04E+01	0,00E+00	-8,44E-04	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	-3,69E+01	-3,72E+01	1,63E+00
Total use of non-re. PER	MJ	1,27E+03	3,25E+01	7,24E+00	1,31E+03	3,58E+01	4,74E-05	MNR	MNR	MNR	MNR	MNR	1,38E+05	MNR	MNR	2,64E+00	-3,46E+01	-3,53E+01	-1,59E+02
Secondary materials	kg	4,46E+00	1,21E-02	4,65E-03	4,48E+00	9,94E-03	1,00E-06	MNR	MNR	MNR	MNR	MNR	1,43E+01	MNR	MNR	7,34E-04	2,09E-03	3,71E-03	6,83E-01
Renew. secondary fuels	MJ	1,70E-01	6,41E-05	4,31E-05	1,70E-01	1,00E-04	8,13E-09	MNR	MNR	MNR	MNR	MNR	1,16E-01	MNR	MNR	7,40E-06	9,87E-05	3,77E-05	-1,78E-03
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m ³	7,33E-01	3,08E-03	1,49E-03	7,37E-01	4,64E-03	6,53E-07	MNR	MNR	MNR	MNR	MNR	1,19E+02	MNR	MNR	3,42E-04	5,59E-03	3,29E-03	-7,71E-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	1,50E+01	4,38E-02	2,52E-02	1,51E+01	4,75E-02	8,37E-05	MNR	MNR	MNR	MNR	MNR	4,98E+02	MNR	MNR	3,50E-03	1,19E-02	5,45E-02	-2,45E+00
Non-hazardous waste	kg	1,93E+02	5,25E-01	1,59E-01	1,94E+02	7,80E-01	6,36E-04	MNR	MNR	MNR	MNR	MNR	3,15E+04	MNR	MNR	5,76E-02	1,83E+00	5,67E+00	-6,30E+01
Radioactive waste	kg	2,58E-03	2,24E-04	7,99E-06	2,81E-03	2,40E-04	2,61E-09	MNR	MNR	MNR	MNR	MNR	1,01E+00	MNR	MNR	1,77E-05	6,89E-06	0,00E+00	-3,56E-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	5,58E+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	1,29E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	4,36E-01	4,36E-01	0,00E+00	0,00E+00	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	3,00E+01	0,00E+00	0,00E+00

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

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO ₂ e	1,03E+02	2,37E+00	5,35E-01	1,06E+02	2,36E+00	8,47E-04	MNR	MNR	MNR	MNR	MNR	6,46E+03	MNR	MNR	1,74E-01	3,35E+00	2,87E+00	-1,59E+01
Ozone depletion Pot.	kg CFC-11e	1,40E-05	4,01E-07	8,80E-08	1,45E-05	4,34E-07	8,20E-12	MNR	MNR	MNR	MNR	MNR	2,87E-04	MNR	MNR	3,21E-08	1,71E-08	1,74E-08	-3,73E-07
Acidification	kg SO ₂ e	7,11E-01	3,88E-02	9,43E-04	7,50E-01	7,84E-03	6,86E-07	MNR	MNR	MNR	MNR	MNR	3,16E+01	MNR	MNR	5,79E-04	1,63E-03	8,50E-04	-1,91E-01
Eutrophication	kg PO ₄ ³ e	2,29E-01	4,71E-03	5,38E-04	2,34E-01	1,79E-03	5,49E-07	MNR	MNR	MNR	MNR	MNR	2,43E+01	MNR	MNR	1,32E-04	7,73E-04	9,11E-03	-5,19E-02
POCP ("smog")	kg C ₂ H ₄ e	4,22E-02	1,04E-03	7,56E-05	4,33E-02	3,06E-04	1,75E-08	MNR	MNR	MNR	MNR	MNR	1,29E+00	MNR	MNR	2,26E-05	5,45E-05	2,30E-04	-8,71E-03
ADP-elements	kg Sbe	8,58E-03	4,18E-06	2,40E-06	8,59E-03	5,41E-06	2,45E-10	MNR	MNR	MNR	MNR	MNR	6,07E-02	MNR	MNR	3,99E-07	1,27E-05	4,11E-07	-1,98E-03
ADP-fossil	MJ	1,27E+03	3,25E+01	7,73E+00	1,31E+03	3,58E+01	8,92E-04	MNR	MNR	MNR	MNR	MNR	1,38E+05	MNR	MNR	2,64E+00	2,20E+00	1,97E+00	-1,61E+02

APPENDIX (EPD HUB ALIGNED)

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

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

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

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

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

$$TSF = PSF * CSF$$

Table A1: Light management function (PEP EcoPassport aligned)

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

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

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

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

Configuration	Flux [lm]	Power [W]	Efficacy [lm/W]	PSF	Total Scaling Factor (TSF)				Scaled Impacts (GWP100 B6 - kg CO2eq.)			
					NC	DD	PS	DD+PS	NC	DD	PS	DD+PS
BGP284/294/394 LED109-4S/722	9680,000	79,0	122,5	0,479	0,479	0,359	0,359	0,263	3131,3	2348,5	2348,5	1722,2
BGP284/294/394 LED120-4S/722	10560,000	87,0	121,4	0,527	0,527	0,395	0,395	0,290	3448,4	2586,3	2586,3	1896,6
BGP284/294/394 LED130-4S/727	11440,000	85,0	134,6	0,515	0,515	0,386	0,386	0,283	3369,1	2526,8	2526,8	1853,0
BGP284/294/394 LED130-4S/722	11440,000	95,0	120,4	0,576	0,576	0,432	0,432	0,317	3765,5	2824,1	2824,1	2071,0
BGP284/294/394 LED139-4S/730	12320,000	80,0	154,0	0,485	0,485	0,364	0,364	0,267	3170,9	2378,2	2378,2	1744,0
BGP284/294/394 LED139-4S/727	12320,000	91,0	135,4	0,552	0,552	0,414	0,414	0,303	3606,9	2705,2	2705,2	1983,8
BGP284/294/394 LED139-4S/722	12320,000	102,0	120,8	0,618	0,618	0,464	0,464	0,340	4042,9	3032,2	3032,2	2223,6
BGP284/294/394 LED139-4S/830	12320,000	91,0	135,4	0,552	0,552	0,414	0,414	0,303	3606,9	2705,2	2705,2	1983,8
BGP284/294/394 LED149-4S/740	13200,000	81,0	163,0	0,491	0,491	0,368	0,368	0,270	3210,5	2407,9	2407,9	1765,8
BGP284/294/394 LED149-4S/730	13200,000	86,0	153,5	0,521	0,521	0,391	0,391	0,287	3408,7	2556,5	2556,5	1874,8
BGP284/294/394 LED149-4S/727	13200,000	97,0	136,1	0,588	0,588	0,441	0,441	0,323	3844,7	2883,5	2883,5	2114,6

BGP284/294/394 LED149-4S/722	13200,000	108,0	122,2	0,655	0,655	0,491	0,491	0,360	4280,7	3210,5	3210,5	2354,4
BGP284/294/394 LED149-4S/830	13200,000	97,0	136,1	0,588	0,588	0,441	0,441	0,323	3844,7	2883,5	2883,5	2114,6
BGP284/294/394 LED150-4S/740	13200,000	82,0	161,0	0,497	0,497	0,373	0,373	0,273	3250,2	2437,6	2437,6	1787,6
BGP284/294/394 LED150-4S/730	13200,000	87,0	151,7	0,527	0,527	0,395	0,395	0,290	3448,4	2586,3	2586,3	1896,6
BGP284/294/394 LED150-4S/727	13200,000	98,0	134,7	0,594	0,594	0,445	0,445	0,327	3884,4	2913,3	2913,3	2136,4
BGP284/294/394 LED150-4S/722	13200,000	110,0	120,0	0,667	0,667	0,500	0,500	0,367	4360,0	3270,0	3270,0	2398,0
BGP284/294/394 LED150-4S/830	13200,000	98,0	134,7	0,594	0,594	0,445	0,445	0,327	3884,4	2913,3	2913,3	2136,4
BGP284/294/394 LED160-4S/740	14080,000	87,0	161,8	0,527	0,527	0,395	0,395	0,290	3448,4	2586,3	2586,3	1896,6
BGP284/294/394 LED160-4S/730	14080,000	93,0	151,4	0,564	0,564	0,423	0,423	0,310	3686,2	2764,6	2764,6	2027,4
BGP284/294/394 LED160-4S/727	14080,000	104,0	135,4	0,630	0,630	0,473	0,473	0,347	4122,2	3091,6	3091,6	2267,2
BGP284/294/394 LED160-4S/722	13920,000	116,0	120,0	0,703	0,703	0,527	0,527	0,387	4597,8	3448,4	3448,4	2528,8
BGP284/294/394 LED160-4S/830	14080,000	104,0	135,4	0,630	0,630	0,473	0,473	0,347	4122,2	3091,6	3091,6	2267,2
BGP284/294/394 LED180-4S/740	15840,000	99,0	160,0	0,600	0,600	0,450	0,450	0,330	3924,0	2943,0	2943,0	2158,2
BGP284/294/394 LED180-4S/730	15840,000	104,0	152,3	0,630	0,630	0,473	0,473	0,347	4122,2	3091,6	3091,6	2267,2
BGP284/294/394 LED180-4S/727	15660,000	118,0	132,7	0,715	0,715	0,536	0,536	0,393	4677,1	3507,8	3507,8	2572,4
BGP284/294/394 LED180-4S/722	15660,000	132,0	118,6	0,800	0,800	0,600	0,600	0,440	5232,0	3924,0	3924,0	2877,6
BGP284/294/394 LED180-4S/830	15660,000	118,0	132,7	0,715	0,715	0,536	0,536	0,393	4677,1	3507,8	3507,8	2572,4
BGP284/294/394 LED200-4S/740	17600,000	110,0	160,0	0,667	0,667	0,500	0,500	0,367	4360,0	3270,0	3270,0	2398,0
BGP284/294/394 LED200-4S/730	17600,000	116,0	151,7	0,703	0,703	0,527	0,527	0,387	4597,8	3448,4	3448,4	2528,8
BGP284/294/394 LED200-4S/727	17400,000	132,0	131,8	0,800	0,800	0,600	0,600	0,440	5232,0	3924,0	3924,0	2877,6

BGP284/294/394 LED200-4S/722	17400,000	148,0	117,6	0,897	0,897	0,673	0,673	0,493	5866,2	4399,6	4399,6	3226,4
BGP284/294/394 LED200-4S/830	17400,000	132,0	131,8	0,800	0,800	0,600	0,600	0,440	5232,0	3924,0	3924,0	2877,6
BGP284/294/394 LED220-4S/740	19140,000	122,0	156,9	0,739	0,739	0,555	0,555	0,407	4835,6	3626,7	3626,7	2659,6
BGP284/294/394 LED220-4S/730	19140,000	130,0	147,2	0,788	0,788	0,591	0,591	0,433	5152,7	3864,5	3864,5	2834,0
BGP284/294/394 LED220-4S/727	19140,000	146,0	131,1	0,885	0,885	0,664	0,664	0,487	5786,9	4340,2	4340,2	3182,8
BGP284/294/394 LED220-4S/722	18920,000	164,0	115,4	0,994	0,994	0,745	0,745	0,547	6500,4	4875,3	4875,3	3575,2
BGP284/294/394 LED220-4S/830	19140,000	146,0	131,1	0,885	0,885	0,664	0,664	0,487	5786,9	4340,2	4340,2	3182,8
BGP284/294/394 LED240-4S/740	20880,000	134,0	155,8	0,812	0,812	0,609	0,609	0,447	5311,3	3983,5	3983,5	2921,2
BGP284/294/394 LED240-4S/730	20880,000	142,0	147,0	0,861	0,861	0,645	0,645	0,473	5628,4	4221,3	4221,3	3095,6
BGP284/294/394 LED240-4S/727	20640,000	160,0	129,0	0,970	0,970	0,727	0,727	0,533	6341,8	4756,4	4756,4	3488,0
BGP284/294/394 LED240-4S/722	20400,000	182,0	112,1	1,103	1,103	0,827	0,827	0,607	7213,8	5410,4	5410,4	3967,6
BGP284/294/394 LED240-4S/830	20640,000	160,0	129,0	0,970	0,970	0,727	0,727	0,533	6341,8	4756,4	4756,4	3488,0
BGP284/294/394 LED260-4S/740	22620,000	144,0	157,1	0,873	0,873	0,655	0,655	0,480	5707,6	4280,7	4280,7	3139,2
BGP284/294/394 LED260-4S/730	22360,000	154,0	145,2	0,933	0,933	0,700	0,700	0,513	6104,0	4578,0	4578,0	3357,2
BGP284/294/394 LED260-4S/727	22360,000	176,0	127,0	1,067	1,067	0,800	0,800	0,587	6976,0	5232,0	5232,0	3836,8
BGP284/294/394 LED260-4S/722	22100,000	190,0	116,3	1,152	1,152	0,864	0,864	0,633	7530,9	5648,2	5648,2	4142,0
BGP284/294/394 LED260-4S/830	22360,000	176,0	127,0	1,067	1,067	0,800	0,800	0,587	6976,0	5232,0	5232,0	3836,8
BGP284/294/394 LED280-4S/740	24080,000	158,0	152,4	0,958	0,958	0,718	0,718	0,527	6262,5	4696,9	4696,9	3444,4
BGP284/294/394 LED280-4S/730	24080,000	168,0	143,3	1,018	1,018	0,764	0,764	0,560	6658,9	4994,2	4994,2	3662,4
BGP284/294/394 LED280-4S/727	23800,000	190,0	125,3	1,152	1,152	0,864	0,864	0,633	7530,9	5648,2	5648,2	4142,0

BGP284/294/394 LED280-4S/722	23800,000	205,0	116,1	1,242	1,242	0,932	0,932	0,683	8125,5	6094,1	6094,1	4469,0
BGP284/294/394 LED280-4S/830	23800,000	190,0	125,3	1,152	1,152	0,864	0,864	0,633	7530,9	5648,2	5648,2	4142,0
BGP284/294/394 LED300-4S/740	25800,000	170,0	151,8	1,030	1,030	0,773	0,773	0,567	6738,2	5053,6	5053,6	3706,0
BGP284/294/394 LED300-4S/730	25800,000	182,0	141,8	1,103	1,103	0,827	0,827	0,607	7213,8	5410,4	5410,4	3967,6
BGP284/294/394 LED300-4S/727	25500,000	205,0	124,4	1,242	1,242	0,932	0,932	0,683	8125,5	6094,1	6094,1	4469,0
BGP284/294/394 LED300-4S/722	25500,000	220,0	115,9	1,333	1,333	1,000	1,000	0,733	8720,0	6540,0	6540,0	4796,0
BGP284/294/394 LED300-4S/830	25500,000	198,0	128,8	1,200	1,200	0,900	0,900	0,660	7848,0	5886,0	5886,0	4316,4
BGP284/294/394 LED320-4S/740	27200,000	182,0	149,5	1,103	1,103	0,827	0,827	0,607	7213,8	5410,4	5410,4	3967,6
BGP284/294/394 LED320-4S/730	27200,000	196,0	138,8	1,188	1,188	0,891	0,891	0,653	7768,7	5826,5	5826,5	4272,8
BGP284/294/394 LED320-4S/727	27200,000	225,0	120,9	1,364	1,364	1,023	1,023	0,750	8918,2	6688,6	6688,6	4905,0
BGP284/294/394 LED320-4S/722	27200,000	240,0	113,3	1,455	1,455	1,091	1,091	0,800	9512,7	7134,5	7134,5	5232,0
BGP284/294/394 LED320-4S/830	27200,000	210,0	129,5	1,273	1,273	0,955	0,955	0,700	8323,6	6242,7	6242,7	4578,0
BGP284/294/394 LED340-4S/740	29240,000	186,0	157,2	1,127	1,127	0,845	0,845	0,620	7372,4	5529,3	5529,3	4054,8
BGP284/294/394 LED340-4S/730	28900,000	200,0	144,5	1,212	1,212	0,909	0,909	0,667	7927,3	5945,5	5945,5	4360,0
BGP284/294/394 LED340-4S/727	28900,000	225,0	128,4	1,364	1,364	1,023	1,023	0,750	8918,2	6688,6	6688,6	4905,0
BGP284/294/394 LED340-4S/830	28900,000	225,0	128,4	1,364	1,364	1,023	1,023	0,750	8918,2	6688,6	6688,6	4905,0
BGP284/294/394 LED380-4S/740	32300,000	210,0	153,8	1,273	1,273	0,955	0,955	0,700	8323,6	6242,7	6242,7	4578,0
BGP284/294/394 LED380-4S/730	32300,000	225,0	143,6	1,364	1,364	1,023	1,023	0,750	8918,2	6688,6	6688,6	4905,0
BGP284/294/394 LED400-4S/740	34000,000	225,0	151,1	1,364	1,364	1,023	1,023	0,750	8918,2	6688,6	6688,6	4905,0
BGP284/294/394 LED400-4S/730	34000,000	240,0	141,7	1,455	1,455	1,091	1,091	0,800	9512,7	7134,5	7134,5	5232,0

BGP284/294/394 LED420-4S/740	35700,000	235,0	151,9	1,424	1,424	1,068	1,068	0,783	9314,5	6985,9	6985,9	5123,0
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* Note that if the product is non-dimmable, only the values for “NC (No Control)” are valid; if the driver type is PSU, only the values for “NC (No Control)” and “PS (presence sensing)” for are valid.

APPENDIX (PEP ECOPASSPORT ALIGNED)

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

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

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

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

- 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 (Slpep) is presented in Table A4.

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

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

$$PGSF = PSF * GSF$$

- 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

- 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
BGP284/294/394 LED109-4S/722	9680	79	122,5	0,479	0,017	0,013	0,013	0,010	113,2	84,9	84,9	62,3
BGP284/294/394 LED120-4S/722	10560	87	121,4	0,527	0,017	0,013	0,013	0,010	114,3	85,7	85,7	62,9
BGP284/294/394 LED130-4S/727	11440	85	134,6	0,515	0,016	0,012	0,012	0,009	103,1	77,3	77,3	56,7
BGP284/294/394 LED130-4S/722	11440	95	120,4	0,576	0,018	0,013	0,013	0,010	115,2	86,4	86,4	63,4
BGP284/294/394 LED139-4S/730	12320	80	154,0	0,485	0,014	0,010	0,010	0,008	90,1	67,6	67,6	49,5
BGP284/294/394 LED139-4S/727	12320	91	135,4	0,552	0,016	0,012	0,012	0,009	102,5	76,9	76,9	56,4
BGP284/294/394 LED139-4S/722	12320	102	120,8	0,618	0,018	0,013	0,013	0,010	114,9	86,1	86,1	63,2
BGP284/294/394 LED139-4S/830	12320	91	135,4	0,552	0,016	0,012	0,012	0,009	102,5	76,9	76,9	56,4
BGP284/294/394 LED149-4S/740	13200	81	163,0	0,491	0,013	0,010	0,010	0,007	85,1	63,8	63,8	46,8
BGP284/294/394 LED149-4S/730	13200	86	153,5	0,521	0,014	0,010	0,010	0,008	90,4	67,8	67,8	49,7
BGP284/294/394 LED149-4S/727	13200	97	136,1	0,588	0,016	0,012	0,012	0,009	101,9	76,5	76,5	56,1
BGP284/294/394 LED149-4S/722	13200	108	122,2	0,655	0,017	0,013	0,013	0,010	113,5	85,1	85,1	62,4
BGP284/294/394 LED149-4S/830	13200	97	136,1	0,588	0,016	0,012	0,012	0,009	101,9	76,5	76,5	56,1

BGP284/294/394 LED150-4S/740	13200	82	161,0	0,497	0,013	0,010	0,010	0,007	86,2	64,6	64,6	47,4
BGP284/294/394 LED150-4S/730	13200	87	151,7	0,527	0,014	0,010	0,010	0,008	91,4	68,6	68,6	50,3
BGP284/294/394 LED150-4S/727	13200	98	134,7	0,594	0,016	0,012	0,012	0,009	103,0	77,2	77,2	56,6
BGP284/294/394 LED150-4S/722	13200	110	120,0	0,667	0,018	0,013	0,013	0,010	115,6	86,7	86,7	63,6
BGP284/294/394 LED150-4S/830	13200	98	134,7	0,594	0,016	0,012	0,012	0,009	103,0	77,2	77,2	56,6
BGP284/294/394 LED160-4S/740	14080	87	161,8	0,527	0,013	0,010	0,010	0,007	85,7	64,3	64,3	47,1
BGP284/294/394 LED160-4S/730	14080	93	151,4	0,564	0,014	0,011	0,011	0,008	91,6	68,7	68,7	50,4
BGP284/294/394 LED160-4S/727	14080	104	135,4	0,630	0,016	0,012	0,012	0,009	102,5	76,9	76,9	56,4
BGP284/294/394 LED160-4S/722	13920	116	120,0	0,703	0,018	0,013	0,013	0,010	115,6	86,7	86,7	63,6
BGP284/294/394 LED160-4S/830	14080	104	135,4	0,630	0,016	0,012	0,012	0,009	102,5	76,9	76,9	56,4
BGP284/294/394 LED180-4S/740	15840	99	160,0	0,600	0,013	0,010	0,010	0,007	86,7	65,0	65,0	47,7
BGP284/294/394 LED180-4S/730	15840	104	152,3	0,630	0,014	0,010	0,010	0,008	91,1	68,3	68,3	50,1
BGP284/294/394 LED180-4S/727	15660	118	132,7	0,715	0,016	0,012	0,012	0,009	104,5	78,4	78,4	57,5
BGP284/294/394 LED180-4S/722	15660	132	118,6	0,800	0,018	0,013	0,013	0,010	116,9	87,7	87,7	64,3
BGP284/294/394 LED180-4S/830	15660	118	132,7	0,715	0,016	0,012	0,012	0,009	104,5	78,4	78,4	57,5
BGP284/294/394 LED200-4S/740	17600	110	160,0	0,667	0,013	0,010	0,010	0,007	86,7	65,0	65,0	47,7
BGP284/294/394 LED200-4S/730	17600	116	151,7	0,703	0,014	0,010	0,010	0,008	91,4	68,6	68,6	50,3
BGP284/294/394 LED200-4S/727	17400	132	131,8	0,800	0,016	0,012	0,012	0,009	105,2	78,9	78,9	57,9
BGP284/294/394 LED200-4S/722	17400	148	117,6	0,897	0,018	0,014	0,014	0,010	118,0	88,5	88,5	64,9
BGP284/294/394 LED200-4S/830	17400	132	131,8	0,800	0,016	0,012	0,012	0,009	105,2	78,9	78,9	57,9

BGP284/294/394 LED220-4S/740	19140	122	156,9	0,739	0,014	0,010	0,010	0,007	88,4	66,3	66,3	48,6
BGP284/294/394 LED220-4S/730	19140	130	147,2	0,788	0,014	0,011	0,011	0,008	94,2	70,7	70,7	51,8
BGP284/294/394 LED220-4S/727	19140	146	131,1	0,885	0,016	0,012	0,012	0,009	105,8	79,4	79,4	58,2
BGP284/294/394 LED220-4S/722	18920	164	115,4	0,994	0,018	0,014	0,014	0,010	120,2	90,2	90,2	66,1
BGP284/294/394 LED220-4S/830	19140	146	131,1	0,885	0,016	0,012	0,012	0,009	105,8	79,4	79,4	58,2
BGP284/294/394 LED240-4S/740	20880	134	155,8	0,812	0,014	0,010	0,010	0,007	89,0	66,8	66,8	49,0
BGP284/294/394 LED240-4S/730	20880	142	147,0	0,861	0,014	0,011	0,011	0,008	94,3	70,8	70,8	51,9
BGP284/294/394 LED240-4S/727	20640	160	129,0	0,970	0,016	0,012	0,012	0,009	107,5	80,7	80,7	59,1
BGP284/294/394 LED240-4S/722	20400	182	112,1	1,103	0,019	0,014	0,014	0,010	123,8	92,8	92,8	68,1
BGP284/294/394 LED240-4S/830	20640	160	129,0	0,970	0,016	0,012	0,012	0,009	107,5	80,7	80,7	59,1
BGP284/294/394 LED260-4S/740	22620	144	157,1	0,873	0,014	0,010	0,010	0,007	88,3	66,2	66,2	48,6
BGP284/294/394 LED260-4S/730	22360	154	145,2	0,933	0,015	0,011	0,011	0,008	95,5	71,7	71,7	52,6
BGP284/294/394 LED260-4S/727	22360	176	127,0	1,067	0,017	0,013	0,013	0,009	109,2	81,9	81,9	60,1
BGP284/294/394 LED260-4S/722	22100	190	116,3	1,152	0,018	0,014	0,014	0,010	119,3	89,5	89,5	65,6
BGP284/294/394 LED260-4S/830	22360	176	127,0	1,067	0,017	0,013	0,013	0,009	109,2	81,9	81,9	60,1
BGP284/294/394 LED280-4S/740	24080	158	152,4	0,958	0,014	0,010	0,010	0,008	91,0	68,3	68,3	50,1
BGP284/294/394 LED280-4S/730	24080	168	143,3	1,018	0,015	0,011	0,011	0,008	96,8	72,6	72,6	53,2
BGP284/294/394 LED280-4S/727	23800	190	125,3	1,152	0,017	0,013	0,013	0,009	110,7	83,1	83,1	60,9
BGP284/294/394 LED280-4S/722	23800	205	116,1	1,242	0,018	0,014	0,014	0,010	119,5	89,6	89,6	65,7
BGP284/294/394 LED280-4S/830	23800	190	125,3	1,152	0,017	0,013	0,013	0,009	110,7	83,1	83,1	60,9

BGP284/294/394 LED300-4S/740	25800	170	151,8	1,030	0,014	0,010	0,010	0,008	91,4	68,6	68,6	50,3
BGP284/294/394 LED300-4S/730	25800	182	141,8	1,103	0,015	0,011	0,011	0,008	97,9	73,4	73,4	53,8
BGP284/294/394 LED300-4S/727	25500	205	124,4	1,242	0,017	0,013	0,013	0,009	111,5	83,6	83,6	61,3
BGP284/294/394 LED300-4S/722	25500	220	115,9	1,333	0,018	0,014	0,014	0,010	119,7	89,8	89,8	65,8
BGP284/294/394 LED300-4S/830	25500	198	128,8	1,200	0,016	0,012	0,012	0,009	107,7	80,8	80,8	59,2
BGP284/294/394 LED320-4S/740	27200	182	149,5	1,103	0,014	0,011	0,011	0,008	92,8	69,6	69,6	51,1
BGP284/294/394 LED320-4S/730	27200	196	138,8	1,188	0,015	0,011	0,011	0,008	100,0	75,0	75,0	55,0
BGP284/294/394 LED320-4S/727	27200	225	120,9	1,364	0,018	0,013	0,013	0,010	114,8	86,1	86,1	63,1
BGP284/294/394 LED320-4S/722	27200	240	113,3	1,455	0,019	0,014	0,014	0,010	122,4	91,8	91,8	67,3
BGP284/294/394 LED320-4S/830	27200	210	129,5	1,273	0,016	0,012	0,012	0,009	107,1	80,3	80,3	58,9
BGP284/294/394 LED340-4S/740	29240	186	157,2	1,127	0,013	0,010	0,010	0,007	88,2	66,2	66,2	48,5
BGP284/294/394 LED340-4S/730	28900	200	144,5	1,212	0,015	0,011	0,011	0,008	96,0	72,0	72,0	52,8
BGP284/294/394 LED340-4S/727	28900	225	128,4	1,364	0,017	0,012	0,012	0,009	108,0	81,0	81,0	59,4
BGP284/294/394 LED340-4S/830	28900	225	128,4	1,364	0,017	0,012	0,012	0,009	108,0	81,0	81,0	59,4
BGP284/294/394 LED380-4S/740	32300	210	153,8	1,273	0,014	0,010	0,010	0,008	90,2	67,6	67,6	49,6
BGP284/294/394 LED380-4S/730	32300	225	143,6	1,364	0,015	0,011	0,011	0,008	96,6	72,5	72,5	53,2
BGP284/294/394 LED400-4S/740	34000	225	151,1	1,364	0,014	0,011	0,011	0,008	91,8	68,9	68,9	50,5
BGP284/294/394 LED400-4S/730	34000	240	141,7	1,455	0,015	0,011	0,011	0,008	97,9	73,4	73,4	53,9
BGP284/294/394 LED420-4S/740	35700	235	151,9	1,424	0,014	0,010	0,010	0,008	91,3	68,5	68,5	50,2

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

ANNEX

USE PHASE (B6) VALUES FOR DIFFERENT COUNTRY MIX

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

Example on how to use the table:

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

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

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

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

Divide that value according to the EU value from the following table (EU = 3,96E-01) and then multiplying for the Finland value from the same table (FINLAND = 2,70E-01).

Thus, the calculation of this example would be:

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

UniStreet/LumiStreet gen2 Large

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