

# ENVIRONMENTAL PRODUCT DECLARATION

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

UniStreet/LumiStreet gen2  
BGP282/292/392  
Signify N.V.

 The Signify logo, featuring a green circular icon with a stylized 'S' followed by the word 'signify' in a lowercase, green, 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	<a href="https://www.signify.com/global">https://www.signify.com/global</a>

### 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 Mini
Additional labels	BGP282 LED130-4S/740 I DM10 DDF2 D18 SRG
Product reference	910770235380
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	5.836 kg
GWP-fossil, A1-A3 (kgCO <sub>2</sub> e)	4.97E+01
GWP-total, A1-A3 (kgCO <sub>2</sub> e)	4.93E+01
Secondary material, inputs (%)	47.7
Secondary material, outputs (%)	58.3
Total energy use, A1-A3 (kWh)	170
Net fresh water use, A1-A3 (m <sup>3</sup> )	0.29

## 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 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/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	66.97	EU , APAC
Minerals	20.12	EU , APAC
Fossil materials	12.9	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	5.836 kg
Functional unit	11132 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 Mini

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 <sup>1)</sup>	kg CO <sub>2</sub> e	4,80E+01	1,10E+00	2,50E-01	4,93E+01	1,10E+00	4,17E-03	MNR	MNR	MNR	MNR	MNR	3,05E+03	MNR	MNR	8,20E-02	6,52E-01	5,27E-01	-8,24E+00
GWP – fossil	kg CO <sub>2</sub> e	4,83E+01	1,10E+00	2,53E-01	4,97E+01	1,10E+00	8,54E-04	MNR	MNR	MNR	MNR	MNR	3,04E+03	MNR	MNR	8,20E-02	6,52E-01	5,27E-01	-8,24E+00
GWP – biogenic	kg CO <sub>2</sub> e	-4,15E-01	0,00E+00	-3,00E-03	-4,18E-01	4,24E-04	3,31E-03	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	0,00E+00	0,00E+00	-2,37E-03
GWP – LULUC	kg CO <sub>2</sub> e	8,45E-02	6,92E-04	1,36E-04	8,53E-02	4,04E-04	4,18E-08	MNR	MNR	MNR	MNR	MNR	7,12E+00	MNR	MNR	3,03E-05	1,07E-04	7,99E-05	-1,20E-03
Ozone depletion pot.	kg CFC <sub>1,1</sub> e	6,49E-06	2,27E-07	4,70E-08	6,76E-06	2,52E-07	9,65E-12	MNR	MNR	MNR	MNR	MNR	1,55E-04	MNR	MNR	1,89E-08	8,99E-09	8,86E-09	-2,27E-07
Acidification potential	mol H <sup>+</sup> e	3,90E-01	2,71E-02	5,61E-04	4,17E-01	4,64E-03	9,60E-07	MNR	MNR	MNR	MNR	MNR	1,74E+01	MNR	MNR	3,47E-04	9,35E-04	4,28E-04	-1,02E-01
EP-freshwater <sup>2)</sup>	kg Pe	2,62E-03	5,32E-06	2,36E-06	2,63E-03	8,97E-06	1,11E-09	MNR	MNR	MNR	MNR	MNR	3,22E-01	MNR	MNR	6,71E-07	3,33E-06	4,23E-06	-5,76E-04
EP-marine	kg Ne	5,39E-02	6,73E-03	1,31E-04	6,08E-02	1,38E-03	4,45E-07	MNR	MNR	MNR	MNR	MNR	2,30E+00	MNR	MNR	1,03E-04	2,33E-04	8,95E-04	-9,77E-03
EP-terrestrial	mol Ne	5,75E-01	7,48E-02	1,31E-03	6,52E-01	1,52E-02	4,53E-06	MNR	MNR	MNR	MNR	MNR	2,62E+01	MNR	MNR	1,14E-03	2,60E-03	1,42E-03	-1,16E-01
POCP (“smog”) <sup>3)</sup>	kg NMVOCe	1,81E-01	1,96E-02	5,84E-04	2,01E-01	4,87E-03	1,12E-06	MNR	MNR	MNR	MNR	MNR	7,18E+00	MNR	MNR	3,64E-04	6,95E-04	5,31E-04	-3,33E-02
ADP-minerals & metals <sup>4)</sup>	kg Sbe	3,35E-03	1,81E-06	1,15E-06	3,35E-03	2,57E-06	3,03E-10	MNR	MNR	MNR	MNR	MNR	2,84E-02	MNR	MNR	1,92E-07	7,72E-06	1,77E-07	-6,63E-04
ADP-fossil resources	MJ	5,55E+02	1,45E+01	3,62E+00	5,73E+02	1,65E+01	8,92E-04	MNR	MNR	MNR	MNR	MNR	6,48E+04	MNR	MNR	1,23E+00	9,98E-01	8,53E-01	-8,09E+01
Water use <sup>5)</sup>	m <sup>3</sup> e depr.	1,62E+01	5,00E-02	3,33E-02	1,63E+01	7,37E-02	1,85E-04	MNR	MNR	MNR	MNR	MNR	1,77E+03	MNR	MNR	5,51E-03	3,80E-02	4,95E-02	-7,20E-01

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO<sub>4</sub>e; 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	3,62E-06	5,97E-08	9,15E-09	3,69E-06	1,26E-07	8,02E-12	MNR	MNR	MNR	MNR	MNR	5,71E-05	MNR	MNR	9,45E-09	1,15E-08	6,93E-09	-4,95E-07
Ionizing radiation <sup>6)</sup>	kBq U235e	2,88E+00	6,76E-02	4,48E-03	2,95E+00	7,84E-02	2,66E-06	MNR	MNR	MNR	MNR	MNR	1,75E+03	MNR	MNR	5,87E-03	5,96E-03	4,50E-03	-4,92E-01
Ecotoxicity (freshwater)	CTUe	2,60E+03	1,04E+01	4,10E+00	2,62E+03	1,48E+01	3,66E-03	MNR	MNR	MNR	MNR	MNR	4,41E+04	MNR	MNR	1,11E+00	5,14E+00	3,37E+02	-3,36E+02
Human toxicity, cancer	CTUh	1,45E-07	5,77E-10	1,82E-10	1,46E-07	3,64E-10	3,47E-13	MNR	MNR	MNR	MNR	MNR	1,44E-06	MNR	MNR	2,72E-11	1,67E-10	6,80E-10	-2,47E-09
Human tox. non-cancer	CTUh	2,12E-06	8,10E-09	1,68E-09	2,13E-06	1,47E-08	1,43E-11	MNR	MNR	MNR	MNR	MNR	4,74E-05	MNR	MNR	1,10E-09	6,94E-09	3,06E-08	-4,89E-07
SQP <sup>7)</sup>	-	2,22E+02	6,62E+00	1,05E+00	2,30E+02	1,90E+01	5,39E-04	MNR	MNR	MNR	MNR	MNR	1,17E+04	MNR	MNR	1,42E+00	1,70E+00	1,30E+00	-2,29E+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 <sup>8)</sup>	MJ	5,33E+01	1,20E-01	3,90E+00	5,73E+01	1,85E-01	2,09E-05	MNR	MNR	MNR	MNR	MNR	1,32E+04	MNR	MNR	1,39E-02	1,36E-01	3,61E-02	-2,03E+00
Renew. PER as material	MJ	4,42E+00	0,00E+00	3,26E-02	4,45E+00	0,00E+00	-3,26E-02	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	-2,31E-01	-4,29E-01	0,00E+00
Total use of renew. PER	MJ	5,77E+01	1,20E-01	3,93E+00	6,18E+01	1,85E-01	-3,26E-02	MNR	MNR	MNR	MNR	MNR	1,32E+04	MNR	MNR	1,39E-02	-9,54E-02	-3,93E-01	-2,03E+00
Non-re. PER as energy	MJ	5,36E+02	1,45E+01	3,39E+00	5,53E+02	1,65E+01	8,92E-04	MNR	MNR	MNR	MNR	MNR	6,46E+04	MNR	MNR	1,23E+00	9,98E-01	8,53E-01	-8,09E+01
Non-re. PER as material	MJ	1,81E+01	0,00E+00	8,44E-04	1,81E+01	0,00E+00	-8,44E-04	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	-5,17E+00	-5,71E+00	0,00E+00
Total use of non-re. PER	MJ	5,54E+02	1,45E+01	3,39E+00	5,72E+02	1,65E+01	4,74E-05	MNR	MNR	MNR	MNR	MNR	6,46E+04	MNR	MNR	1,23E+00	-4,18E+00	-4,86E+00	-8,09E+01
Secondary materials	kg	2,78E+00	5,83E-03	2,37E-03	2,79E+00	4,57E-03	1,00E-06	MNR	MNR	MNR	MNR	MNR	6,67E+00	MNR	MNR	3,42E-04	9,76E-04	1,97E-03	3,50E-01
Renew. secondary fuels	MJ	7,00E-02	2,50E-05	2,91E-05	7,00E-02	4,61E-05	8,13E-09	MNR	MNR	MNR	MNR	MNR	5,41E-02	MNR	MNR	3,45E-06	4,92E-05	1,58E-05	-4,50E-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 <sup>3</sup>	2,93E-01	1,23E-03	7,95E-04	2,95E-01	2,13E-03	6,53E-07	MNR	MNR	MNR	MNR	MNR	5,57E+01	MNR	MNR	1,60E-04	1,30E-03	8,06E-04	-3,31E-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	8,30E+00	1,97E-02	1,23E-02	8,33E+00	2,18E-02	8,37E-05	MNR	MNR	MNR	MNR	MNR	2,32E+02	MNR	MNR	1,63E-03	6,63E-03	1,77E-02	-1,28E+00
Non-hazardous waste	kg	8,93E+01	2,10E-01	8,31E-02	8,96E+01	3,59E-01	6,36E-04	MNR	MNR	MNR	MNR	MNR	1,47E+04	MNR	MNR	2,68E-02	4,84E-01	2,42E+00	-2,94E+01
Radioactive waste	kg	1,25E-03	1,01E-04	3,82E-06	1,35E-03	1,10E-04	2,61E-09	MNR	MNR	MNR	MNR	MNR	4,71E-01	MNR	MNR	8,24E-06	3,89E-06	0,00E+00	-1,81E-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	3,16E+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	2,43E-01	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	2,00E-01	2,00E-01	0,00E+00	0,00E+00	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	5,34E+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 <sub>2</sub> e	4,73E+01	1,09E+00	2,51E-01	4,86E+01	1,08E+00	8,47E-04	MNR	MNR	MNR	MNR	MNR	3,01E+03	MNR	MNR	8,12E-02	6,49E-01	8,63E-01	-8,08E+00
Ozone depletion Pot.	kg CFC-11e	4,87E-06	1,80E-07	4,08E-08	5,09E-06	2,00E-07	8,20E-12	MNR	MNR	MNR	MNR	MNR	1,34E-04	MNR	MNR	1,49E-08	7,37E-09	7,15E-09	-1,92E-07
Acidification	kg SO <sub>2</sub> e	3,31E-01	2,17E-02	4,57E-04	3,53E-01	3,61E-03	6,86E-07	MNR	MNR	MNR	MNR	MNR	1,47E+01	MNR	MNR	2,70E-04	7,41E-04	3,31E-04	-8,85E-02
Eutrophication	kg PO <sub>4</sub> <sup>3</sup> e	1,03E-01	2,53E-03	2,61E-04	1,06E-01	8,21E-04	5,49E-07	MNR	MNR	MNR	MNR	MNR	1,13E+01	MNR	MNR	6,14E-05	2,73E-04	2,80E-03	-2,43E-02
POCP ("smog")	kg C <sub>2</sub> H <sub>4</sub> e	2,05E-02	5,70E-04	3,79E-05	2,11E-02	1,41E-04	1,75E-08	MNR	MNR	MNR	MNR	MNR	6,03E-01	MNR	MNR	1,05E-05	2,68E-05	9,75E-05	-4,15E-03
ADP-elements	kg Sbe	3,34E-03	1,77E-06	1,14E-06	3,34E-03	2,49E-06	2,45E-10	MNR	MNR	MNR	MNR	MNR	2,83E-02	MNR	MNR	1,86E-07	7,70E-06	1,64E-07	-6,62E-04
ADP-fossil	MJ	5,55E+02	1,45E+01	3,62E+00	5,73E+02	1,65E+01	8,92E-04	MNR	MNR	MNR	MNR	MNR	6,46E+04	MNR	MNR	1,23E+00	9,98E-01	8,53E-01	-8,09E+01

## APPENDIX (EPD HUB ALIGNED)

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

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

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

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

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

$$TSF = PSF * CSF$$

**Table A1: Light management function (PEP EcoPassport aligned)**

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

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

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

**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
BGP282/292/392 LED14-4S/740	1232,000	8,9	138,4	0,116	0,116	0,087	0,087	0,064	352,5	264,4	264,4	193,9
BGP282/292/392 LED16-4S/740	1408,000	10,0	140,8	0,130	0,130	0,097	0,097	0,071	396,1	297,1	297,1	217,9
BGP282/292/392 LED18-4S/740	1584,000	11,2	141,4	0,145	0,145	0,109	0,109	0,080	443,6	332,7	332,7	244,0
BGP282/292/392 LED20-4S/740	1760,000	12,4	141,9	0,161	0,161	0,121	0,121	0,089	491,2	368,4	368,4	270,1
BGP282/292/392 LED22-4S/740	1936,000	13,6	142,4	0,177	0,177	0,132	0,132	0,097	538,7	404,0	404,0	296,3
BGP282/292/392 LED25-4S/740	2200,000	14,8	148,6	0,192	0,192	0,144	0,144	0,106	586,2	439,7	439,7	322,4
BGP282/292/392 LED27-4S/740	2376,000	16,0	148,5	0,208	0,208	0,156	0,156	0,114	633,8	475,3	475,3	348,6
BGP282/292/392 LED30-4S/740	2640,000	17,8	148,3	0,231	0,231	0,173	0,173	0,127	705,1	528,8	528,8	387,8
BGP282/292/392 LED35-4S/740	3080,000	20,5	150,2	0,266	0,266	0,200	0,200	0,146	812,0	609,0	609,0	446,6
BGP282/292/392 LED40-4S/740	3520,000	23,5	149,8	0,305	0,305	0,229	0,229	0,168	930,8	698,1	698,1	512,0
BGP282/292/392 LED45-4S/740	3915,000	26,5	147,7	0,344	0,344	0,258	0,258	0,189	1049,7	787,3	787,3	577,3

BGP282/292/392 LED50-4S/740	4350,000	30,0	145,0	0,390	0,390	0,292	0,292	0,214	1188,3	891,2	891,2	653,6
BGP282/292/392 LED54-4S/740	4698,000	32,5	144,6	0,422	0,422	0,317	0,317	0,232	1287,3	965,5	965,5	708,0
BGP282/292/392 LED56-4S/740	4872,000	34,0	143,3	0,442	0,442	0,331	0,331	0,243	1346,8	1010,1	1010,1	740,7
BGP282/292/392 LED60-4S/740	5220,000	36,5	143,0	0,474	0,474	0,356	0,356	0,261	1445,8	1084,3	1084,3	795,2
BGP282/292/392 LED65-4S/740	5742,000	37,5	153,1	0,487	0,487	0,365	0,365	0,268	1485,4	1114,0	1114,0	817,0
BGP282/292/392 LED70-4S/740	6090,000	40,5	150,4	0,526	0,526	0,394	0,394	0,289	1604,2	1203,2	1203,2	882,3
BGP282/292/392 LED75-4S/740	6612,000	44,0	150,3	0,571	0,571	0,429	0,429	0,314	1742,9	1307,1	1307,1	958,6
BGP282/292/392 LED80-4S/740	6960,000	47,0	148,1	0,610	0,610	0,458	0,458	0,336	1861,7	1396,3	1396,3	1023,9
BGP282/292/392 LED85-4S/740	7482,000	50,0	149,6	0,649	0,649	0,487	0,487	0,357	1980,5	1485,4	1485,4	1089,3
BGP282/292/392 LED90-4S/740	7740,000	54,0	143,3	0,701	0,701	0,526	0,526	0,386	2139,0	1604,2	1604,2	1176,4
BGP282/292/392 LED94-4S/740	8084,000	57,0	141,8	0,740	0,740	0,555	0,555	0,407	2257,8	1693,3	1693,3	1241,8
BGP282/292/392 LED99-4S/740	8600,000	60,0	143,3	0,779	0,779	0,584	0,584	0,429	2376,6	1782,5	1782,5	1307,1
BGP282/292/392 LED109-4S/740	9460,000	63,0	150,2	0,818	0,818	0,614	0,614	0,450	2495,5	1871,6	1871,6	1372,5
BGP282/292/392 LED119-4S/740	10320,000	70,0	147,4	0,909	0,909	0,682	0,682	0,500	2772,7	2079,5	2079,5	1525,0
BGP282/292/392 LED130-4S/740	11050,000	77,0	143,5	1,000	1,000	0,750	0,750	0,550	3050,0	2287,5	2287,5	1677,5
BGP282/292/392 LED135-4S/740	11475,000	81,0	141,7	1,052	1,052	0,789	0,789	0,579	3208,4	2406,3	2406,3	1764,6
BGP282/292/392 LED139-4S/740	11900,000	83,0	143,4	1,078	1,078	0,808	0,808	0,593	3287,7	2465,7	2465,7	1808,2
BGP282/292/392 LED149-4S/740	12750,000	90,0	141,7	1,169	1,169	0,877	0,877	0,643	3564,9	2673,7	2673,7	1960,7
BGP282/292/392 LED160-4S/740	13440,000	98,0	137,1	1,273	1,273	0,955	0,955	0,700	3881,8	2911,4	2911,4	2135,0
BGP282/292/392 LED14-4S/730	1232,000	9,4	131,1	0,122	0,122	0,092	0,092	0,067	372,3	279,3	279,3	204,8

BGP282/292/392 LED16-4S/730	1408,000	10,6	132,8	0,138	0,138	0,103	0,103	0,076	419,9	314,9	314,9	230,9
BGP282/292/392 LED18-4S/730	1584,000	11,8	134,2	0,153	0,153	0,115	0,115	0,084	467,4	350,6	350,6	257,1
BGP282/292/392 LED20-4S/730	1760,000	13,2	133,3	0,171	0,171	0,129	0,129	0,094	522,9	392,1	392,1	287,6
BGP282/292/392 LED22-4S/730	1936,000	14,6	132,6	0,190	0,190	0,142	0,142	0,104	578,3	433,7	433,7	318,1
BGP282/292/392 LED25-4S/730	2200,000	15,8	139,2	0,205	0,205	0,154	0,154	0,113	625,8	469,4	469,4	344,2
BGP282/292/392 LED27-4S/730	2376,000	17,0	139,8	0,221	0,221	0,166	0,166	0,121	673,4	505,0	505,0	370,4
BGP282/292/392 LED30-4S/730	2640,000	18,8	140,4	0,244	0,244	0,183	0,183	0,134	744,7	558,5	558,5	409,6
BGP282/292/392 LED35-4S/730	3080,000	22,0	140,0	0,286	0,286	0,214	0,214	0,157	871,4	653,6	653,6	479,3
BGP282/292/392 LED40-4S/730	3480,000	25,0	139,2	0,325	0,325	0,244	0,244	0,179	990,3	742,7	742,7	544,6
BGP282/292/392 LED45-4S/730	3915,000	28,5	137,4	0,370	0,370	0,278	0,278	0,204	1128,9	846,7	846,7	620,9
BGP282/292/392 LED50-4S/730	4350,000	32,0	135,9	0,416	0,416	0,312	0,312	0,229	1267,5	950,6	950,6	697,1
BGP282/292/392 LED54-4S/730	4698,000	34,5	136,2	0,448	0,448	0,336	0,336	0,246	1366,6	1024,9	1024,9	751,6
BGP282/292/392 LED56-4S/730	4872,000	36,0	135,3	0,468	0,468	0,351	0,351	0,257	1426,0	1069,5	1069,5	784,3
BGP282/292/392 LED60-4S/730	5220,000	39,0	133,8	0,506	0,506	0,380	0,380	0,279	1544,8	1158,6	1158,6	849,6
BGP282/292/392 LED65-4S/730	5742,000	40,0	143,6	0,519	0,519	0,390	0,390	0,286	1584,4	1188,3	1188,3	871,4
BGP282/292/392 LED70-4S/730	6090,000	43,5	140,0	0,565	0,565	0,424	0,424	0,311	1723,1	1292,3	1292,3	947,7
BGP282/292/392 LED75-4S/730	6612,000	46,5	142,2	0,604	0,604	0,453	0,453	0,332	1841,9	1381,4	1381,4	1013,0
BGP282/292/392 LED80-4S/730	6960,000	50,0	139,2	0,649	0,649	0,487	0,487	0,357	1980,5	1485,4	1485,4	1089,3
BGP282/292/392 LED85-4S/730	7396,000	54,0	137,0	0,701	0,701	0,526	0,526	0,386	2139,0	1604,2	1604,2	1176,4
BGP282/292/392 LED90-4S/730	7740,000	58,0	133,4	0,753	0,753	0,565	0,565	0,414	2297,4	1723,1	1723,1	1263,6

BGP282/292/392 LED94-4S/730	8084,000	61,0	132,5	0,792	0,792	0,594	0,594	0,436	2416,2	1812,2	1812,2	1328,9
BGP282/292/392 LED99-4S/730	8600,000	61,0	141,0	0,792	0,792	0,594	0,594	0,436	2416,2	1812,2	1812,2	1328,9
BGP282/292/392 LED109-4S/730	9460,000	68,0	139,1	0,883	0,883	0,662	0,662	0,486	2693,5	2020,1	2020,1	1481,4
BGP282/292/392 LED119-4S/730	10200,000	75,0	136,0	0,974	0,974	0,731	0,731	0,536	2970,8	2228,1	2228,1	1633,9
BGP282/292/392 LED130-4S/730	11050,000	83,0	133,1	1,078	1,078	0,808	0,808	0,593	3287,7	2465,7	2465,7	1808,2
BGP282/292/392 LED135-4S/730	11475,000	86,0	133,4	1,117	1,117	0,838	0,838	0,614	3406,5	2554,9	2554,9	1873,6
BGP282/292/392 LED139-4S/730	11900,000	89,0	133,7	1,156	1,156	0,867	0,867	0,636	3525,3	2644,0	2644,0	1938,9
BGP282/292/392 LED149-4S/730	12600,000	97,0	129,9	1,260	1,260	0,945	0,945	0,693	3842,2	2881,7	2881,7	2113,2
BGP282/292/392 LED14-4S/727	1246,000	10,6	117,5	0,138	0,138	0,103	0,103	0,076	419,9	314,9	314,9	230,9
BGP282/292/392 LED16-4S/727	1424,000	11,8	120,7	0,153	0,153	0,115	0,115	0,084	467,4	350,6	350,6	257,1
BGP282/292/392 LED18-4S/727	1602,000	13,4	119,6	0,174	0,174	0,131	0,131	0,096	530,8	398,1	398,1	291,9
BGP282/292/392 LED20-4S/727	1780,000	15,0	118,7	0,195	0,195	0,146	0,146	0,107	594,2	445,6	445,6	326,8
BGP282/292/392 LED22-4S/727	1958,000	16,4	119,4	0,213	0,213	0,160	0,160	0,117	649,6	487,2	487,2	357,3
BGP282/292/392 LED25-4S/727	2225,000	17,6	126,4	0,229	0,229	0,171	0,171	0,126	697,1	522,9	522,9	383,4
BGP282/292/392 LED27-4S/727	2403,000	19,0	126,5	0,247	0,247	0,185	0,185	0,136	752,6	564,4	564,4	413,9
BGP282/292/392 LED30-4S/727	2670,000	21,0	127,1	0,273	0,273	0,205	0,205	0,150	831,8	623,9	623,9	457,5
BGP282/292/392 LED35-4S/727	3080,000	24,5	125,7	0,318	0,318	0,239	0,239	0,175	970,5	727,8	727,8	533,8
BGP282/292/392 LED40-4S/727	3520,000	28,5	123,5	0,370	0,370	0,278	0,278	0,204	1128,9	846,7	846,7	620,9
BGP282/292/392 LED45-4S/727	3960,000	32,5	121,8	0,422	0,422	0,317	0,317	0,232	1287,3	965,5	965,5	708,0
BGP282/292/392 LED50-4S/727	4350,000	36,5	119,2	0,474	0,474	0,356	0,356	0,261	1445,8	1084,3	1084,3	795,2

BGP282/292/392 LED54-4S/727	4698,000	39,5	118,9	0,513	0,513	0,385	0,385	0,282	1564,6	1173,5	1173,5	860,5
BGP282/292/392 LED56-4S/727	4872,000	41,0	118,8	0,532	0,532	0,399	0,399	0,293	1624,0	1218,0	1218,0	893,2
BGP282/292/392 LED60-4S/727	5280,000	41,5	127,2	0,539	0,539	0,404	0,404	0,296	1643,8	1232,9	1232,9	904,1
BGP282/292/392 LED65-4S/727	5808,000	45,5	127,6	0,591	0,591	0,443	0,443	0,325	1802,3	1351,7	1351,7	991,3
BGP282/292/392 LED70-4S/727	6090,000	49,5	123,0	0,643	0,643	0,482	0,482	0,354	1960,7	1470,5	1470,5	1078,4
BGP282/292/392 LED75-4S/727	6612,000	53,0	124,8	0,688	0,688	0,516	0,516	0,379	2099,4	1574,5	1574,5	1154,6
BGP282/292/392 LED80-4S/727	6960,000	57,0	122,1	0,740	0,740	0,555	0,555	0,407	2257,8	1693,3	1693,3	1241,8
BGP282/292/392 LED85-4S/727	7396,000	62,0	119,3	0,805	0,805	0,604	0,604	0,443	2455,8	1841,9	1841,9	1350,7
BGP282/292/392 LED90-4S/727	7830,000	62,0	126,3	0,805	0,805	0,604	0,604	0,443	2455,8	1841,9	1841,9	1350,7
BGP282/292/392 LED94-4S/727	8178,000	65,0	125,8	0,844	0,844	0,633	0,633	0,464	2574,7	1931,0	1931,0	1416,1
BGP282/292/392 LED99-4S/727	8700,000	69,0	126,1	0,896	0,896	0,672	0,672	0,493	2733,1	2049,8	2049,8	1503,2
BGP282/292/392 LED109-4S/727	9460,000	77,0	122,9	1,000	1,000	0,750	0,750	0,550	3050,0	2287,5	2287,5	1677,5
BGP282/292/392 LED119-4S/727	10200,000	86,0	118,6	1,117	1,117	0,838	0,838	0,614	3406,5	2554,9	2554,9	1873,6
BGP282/292/392 LED130-4S/727	11050,000	95,0	116,3	1,234	1,234	0,925	0,925	0,679	3763,0	2822,2	2822,2	2069,6
BGP282/292/392 LED135-4S/727	11475,000	99,0	115,9	1,286	1,286	0,964	0,964	0,707	3921,4	2941,1	2941,1	2156,8
BGP282/292/392 LED139-4S/727	11900,000	102,0	116,7	1,325	1,325	0,994	0,994	0,729	4040,3	3030,2	3030,2	2222,1
BGP282/292/392 LED14-4S/722	1246,000	11,6	107,4	0,151	0,151	0,113	0,113	0,083	459,5	344,6	344,6	252,7
BGP282/292/392 LED16-4S/722	1424,000	13,4	106,3	0,174	0,174	0,131	0,131	0,096	530,8	398,1	398,1	291,9
BGP282/292/392 LED18-4S/722	1602,000	15,0	106,8	0,195	0,195	0,146	0,146	0,107	594,2	445,6	445,6	326,8
BGP282/292/392 LED20-4S/722	1780,000	16,8	106,0	0,218	0,218	0,164	0,164	0,120	665,5	499,1	499,1	366,0

BGP282/292/392 LED22-4S/722	1958,000	18,6	105,3	0,242	0,242	0,181	0,181	0,133	736,8	552,6	552,6	405,2
BGP282/292/392 LED25-4S/722	2225,000	19,8	112,4	0,257	0,257	0,193	0,193	0,141	784,3	588,2	588,2	431,4
BGP282/292/392 LED27-4S/722	2403,000	21,0	114,4	0,273	0,273	0,205	0,205	0,150	831,8	623,9	623,9	457,5
BGP282/292/392 LED30-4S/722	2670,000	23,5	113,6	0,305	0,305	0,229	0,229	0,168	930,8	698,1	698,1	512,0
BGP282/292/392 LED35-4S/722	3080,000	28,0	110,0	0,364	0,364	0,273	0,273	0,200	1109,1	831,8	831,8	610,0
BGP282/292/392 LED40-4S/722	3520,000	32,0	110,0	0,416	0,416	0,312	0,312	0,229	1267,5	950,6	950,6	697,1
BGP282/292/392 LED45-4S/722	3915,000	36,5	107,3	0,474	0,474	0,356	0,356	0,261	1445,8	1084,3	1084,3	795,2
BGP282/292/392 LED50-4S/722	4400,000	38,5	114,3	0,500	0,500	0,375	0,375	0,275	1525,0	1143,8	1143,8	838,8
BGP282/292/392 LED54-4S/722	4752,000	42,0	113,1	0,545	0,545	0,409	0,409	0,300	1663,6	1247,7	1247,7	915,0
BGP282/292/392 LED56-4S/722	4928,000	43,5	113,3	0,565	0,565	0,424	0,424	0,311	1723,1	1292,3	1292,3	947,7
BGP282/292/392 LED60-4S/722	5220,000	47,0	111,1	0,610	0,610	0,458	0,458	0,336	1861,7	1396,3	1396,3	1023,9
BGP282/292/392 LED65-4S/722	5742,000	51,0	112,6	0,662	0,662	0,497	0,497	0,364	2020,1	1515,1	1515,1	1111,1
BGP282/292/392 LED70-4S/722	6090,000	56,0	108,8	0,727	0,727	0,545	0,545	0,400	2218,2	1663,6	1663,6	1220,0
BGP282/292/392 LED75-4S/722	6536,000	60,0	108,9	0,779	0,779	0,584	0,584	0,429	2376,6	1782,5	1782,5	1307,1
BGP282/292/392 LED80-4S/722	6960,000	61,0	114,1	0,792	0,792	0,594	0,594	0,436	2416,2	1812,2	1812,2	1328,9
BGP282/292/392 LED85-4S/722	7482,000	66,0	113,4	0,857	0,857	0,643	0,643	0,471	2614,3	1960,7	1960,7	1437,9
BGP282/292/392 LED90-4S/722	7740,000	70,0	110,6	0,909	0,909	0,682	0,682	0,500	2772,7	2079,5	2079,5	1525,0
BGP282/292/392 LED94-4S/722	8084,000	74,0	109,2	0,961	0,961	0,721	0,721	0,529	2931,2	2198,4	2198,4	1612,1
BGP282/292/392 LED99-4S/722	8600,000	78,0	110,3	1,013	1,013	0,760	0,760	0,557	3089,6	2317,2	2317,2	1699,3
BGP282/292/392 LED109-4S/722	9350,000	88,0	106,3	1,143	1,143	0,857	0,857	0,629	3485,7	2614,3	2614,3	1917,1

BGP282/292/392 LED14-4S/830	1232,000	10,4	118,5	0,135	0,135	0,101	0,101	0,074	411,9	309,0	309,0	226,6
BGP282/292/392 LED16-4S/830	1408,000	11,8	119,3	0,153	0,153	0,115	0,115	0,084	467,4	350,6	350,6	257,1
BGP282/292/392 LED18-4S/830	1584,000	13,2	120,0	0,171	0,171	0,129	0,129	0,094	522,9	392,1	392,1	287,6
BGP282/292/392 LED20-4S/830	1760,000	14,8	118,9	0,192	0,192	0,144	0,144	0,106	586,2	439,7	439,7	322,4
BGP282/292/392 LED22-4S/830	1936,000	16,4	118,0	0,213	0,213	0,160	0,160	0,117	649,6	487,2	487,2	357,3
BGP282/292/392 LED25-4S/830	2200,000	17,6	125,0	0,229	0,229	0,171	0,171	0,126	697,1	522,9	522,9	383,4
BGP282/292/392 LED27-4S/830	2376,000	18,8	126,4	0,244	0,244	0,183	0,183	0,134	744,7	558,5	558,5	409,6
BGP282/292/392 LED30-4S/830	2640,000	21,0	125,7	0,273	0,273	0,205	0,205	0,150	831,8	623,9	623,9	457,5
BGP282/292/392 LED35-4S/830	3045,000	24,5	124,3	0,318	0,318	0,239	0,239	0,175	970,5	727,8	727,8	533,8
BGP282/292/392 LED40-4S/830	3480,000	28,5	122,1	0,370	0,370	0,278	0,278	0,204	1128,9	846,7	846,7	620,9
BGP282/292/392 LED45-4S/830	3915,000	32,0	122,3	0,416	0,416	0,312	0,312	0,229	1267,5	950,6	950,6	697,1
BGP282/292/392 LED50-4S/830	4350,000	36,0	120,8	0,468	0,468	0,351	0,351	0,257	1426,0	1069,5	1069,5	784,3
BGP282/292/392 LED54-4S/830	4698,000	39,5	118,9	0,513	0,513	0,385	0,385	0,282	1564,6	1173,5	1173,5	860,5
BGP282/292/392 LED56-4S/830	4872,000	38,5	126,5	0,500	0,500	0,375	0,375	0,275	1525,0	1143,8	1143,8	838,8
BGP282/292/392 LED60-4S/830	5220,000	41,5	125,8	0,539	0,539	0,404	0,404	0,296	1643,8	1232,9	1232,9	904,1
BGP282/292/392 LED65-4S/830	5742,000	45,0	127,6	0,584	0,584	0,438	0,438	0,321	1782,5	1336,9	1336,9	980,4
BGP282/292/392 LED70-4S/830	6090,000	49,0	124,3	0,636	0,636	0,477	0,477	0,350	1940,9	1455,7	1455,7	1067,5
BGP282/292/392 LED75-4S/830	6536,000	53,0	123,3	0,688	0,688	0,516	0,516	0,379	2099,4	1574,5	1574,5	1154,6
BGP282/292/392 LED80-4S/830	6880,000	57,0	120,7	0,740	0,740	0,555	0,555	0,407	2257,8	1693,3	1693,3	1241,8
BGP282/292/392 LED85-4S/830	7396,000	58,0	127,5	0,753	0,753	0,565	0,565	0,414	2297,4	1723,1	1723,1	1263,6

BGP282/292/392 LED90-4S/830	7740,000	62,0	124,8	0,805	0,805	0,604	0,604	0,443	2455,8	1841,9	1841,9	1350,7
BGP282/292/392 LED94-4S/830	8084,000	65,0	124,4	0,844	0,844	0,633	0,633	0,464	2574,7	1931,0	1931,0	1416,1
BGP282/292/392 LED99-4S/830	8600,000	69,0	124,6	0,896	0,896	0,672	0,672	0,493	2733,1	2049,8	2049,8	1503,2
BGP282/292/392 LED109-4S/830	9350,000	77,0	121,4	1,000	1,000	0,750	0,750	0,550	3050,0	2287,5	2287,5	1677,5
BGP282/292/392 LED119-4S/830	10200,000	85,0	120,0	1,104	1,104	0,828	0,828	0,607	3366,9	2525,2	2525,2	1851,8
BGP282/292/392 LED130-4S/830	10920,000	94,0	116,2	1,221	1,221	0,916	0,916	0,671	3723,4	2792,5	2792,5	2047,9
BGP282/292/392 LED135-4S/830	11205,000	99,0	113,2	1,286	1,286	0,964	0,964	0,707	3921,4	2941,1	2941,1	2156,8
BGP282/292/392 LED139-4S/830	11620,000	102,0	113,9	1,325	1,325	0,994	0,994	0,729	4040,3	3030,2	3030,2	2222,1

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

## APPENDIX (PEP ECOPASSPORT ALIGNED)

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

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

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

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

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

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

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

$$PGSF = PSF * GSF$$

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

$$TSF = PGSF * CSF$$

**Table A3: Light management functions (PEP EcoPassport aligned)**

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

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

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

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

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

Configuration	Flux [lm]	Power [W]	Efficacy [lm/W]	PSF	Total Scaling Factor (TSF)				Scaled Impacts (GWP100 B6 - kg CO2eq.)			
					NC	DD	PS	DD+PS	NC	DD	PS	DD+PS
BGP282/292/392 LED14-4S/740	1232	8,9	138,4	0,116	0,033	0,025	0,025	0,018	100,2	75,1	75,1	55,1
BGP282/292/392 LED16-4S/740	1408	10	140,8	0,130	0,032	0,024	0,024	0,018	98,5	73,8	73,8	54,2

BGP282/292/392 LED18-4S/740	1584	11,2	141,4	0,145	0,032	0,024	0,024	0,018	98,0	73,5	73,5	53,9
BGP282/292/392 LED20-4S/740	1760	12,4	141,9	0,161	0,032	0,024	0,024	0,018	97,7	73,3	73,3	53,7
BGP282/292/392 LED22-4S/740	1936	13,6	142,4	0,177	0,032	0,024	0,024	0,018	97,4	73,0	73,0	53,6
BGP282/292/392 LED25-4S/740	2200	14,8	148,6	0,192	0,031	0,023	0,023	0,017	93,3	69,9	69,9	51,3
BGP282/292/392 LED27-4S/740	2376	16	148,5	0,208	0,031	0,023	0,023	0,017	93,4	70,0	70,0	51,3
BGP282/292/392 LED30-4S/740	2640	17,8	148,3	0,231	0,031	0,023	0,023	0,017	93,5	70,1	70,1	51,4
BGP282/292/392 LED35-4S/740	3080	20,5	150,2	0,266	0,030	0,023	0,023	0,017	92,3	69,2	69,2	50,8
BGP282/292/392 LED40-4S/740	3520	23,5	149,8	0,305	0,030	0,023	0,023	0,017	92,6	69,4	69,4	50,9
BGP282/292/392 LED45-4S/740	3915	26,5	147,7	0,344	0,031	0,023	0,023	0,017	93,8	70,4	70,4	51,6
BGP282/292/392 LED50-4S/740	4350	30	145,0	0,390	0,031	0,024	0,024	0,017	95,6	71,7	71,7	52,6
BGP282/292/392 LED54-4S/740	4698	32,5	144,6	0,422	0,031	0,024	0,024	0,017	95,9	71,9	71,9	52,7
BGP282/292/392 LED56-4S/740	4872	34	143,3	0,442	0,032	0,024	0,024	0,017	96,7	72,6	72,6	53,2
BGP282/292/392 LED60-4S/740	5220	36,5	143,0	0,474	0,032	0,024	0,024	0,017	96,9	72,7	72,7	53,3
BGP282/292/392 LED65-4S/740	5742	37,5	153,1	0,487	0,030	0,022	0,022	0,016	90,5	67,9	67,9	49,8
BGP282/292/392 LED70-4S/740	6090	40,5	150,4	0,526	0,030	0,023	0,023	0,017	92,2	69,1	69,1	50,7
BGP282/292/392 LED75-4S/740	6612	44	150,3	0,571	0,030	0,023	0,023	0,017	92,3	69,2	69,2	50,7
BGP282/292/392 LED80-4S/740	6960	47	148,1	0,610	0,031	0,023	0,023	0,017	93,6	70,2	70,2	51,5
BGP282/292/392 LED85-4S/740	7482	50	149,6	0,649	0,030	0,023	0,023	0,017	92,6	69,5	69,5	51,0
BGP282/292/392 LED90-4S/740	7740	54	143,3	0,701	0,032	0,024	0,024	0,017	96,7	72,5	72,5	53,2
BGP282/292/392 LED94-4S/740	8084	57	141,8	0,740	0,032	0,024	0,024	0,018	97,8	73,3	73,3	53,8

BGP282/292/392 LED99-4S/740	8600	60	143,3	0,779	0,032	0,024	0,024	0,017	96,7	72,5	72,5	53,2
BGP282/292/392 LED109-4S/740	9460	63	150,2	0,818	0,030	0,023	0,023	0,017	92,3	69,2	69,2	50,8
BGP282/292/392 LED119-4S/740	10320	70	147,4	0,909	0,031	0,023	0,023	0,017	94,0	70,5	70,5	51,7
BGP282/292/392 LED130-4S/740	11050	77	143,5	1,000	0,032	0,024	0,024	0,017	96,6	72,5	72,5	53,1
BGP282/292/392 LED135-4S/740	11475	81	141,7	1,052	0,032	0,024	0,024	0,018	97,9	73,4	73,4	53,8
BGP282/292/392 LED139-4S/740	11900	83	143,4	1,078	0,032	0,024	0,024	0,017	96,7	72,5	72,5	53,2
BGP282/292/392 LED149-4S/740	12750	90	141,7	1,169	0,032	0,024	0,024	0,018	97,9	73,4	73,4	53,8
BGP282/292/392 LED160-4S/740	13440	98	137,1	1,273	0,033	0,025	0,025	0,018	101,1	75,8	75,8	55,6
BGP282/292/392 LED14-4S/730	1232	9,4	131,1	0,122	0,035	0,026	0,026	0,019	105,8	79,3	79,3	58,2
BGP282/292/392 LED16-4S/730	1408	10,6	132,8	0,138	0,034	0,026	0,026	0,019	104,4	78,3	78,3	57,4
BGP282/292/392 LED18-4S/730	1584	11,8	134,2	0,153	0,034	0,025	0,025	0,019	103,3	77,5	77,5	56,8
BGP282/292/392 LED20-4S/730	1760	13,2	133,3	0,171	0,034	0,026	0,026	0,019	104,0	78,0	78,0	57,2
BGP282/292/392 LED22-4S/730	1936	14,6	132,6	0,190	0,034	0,026	0,026	0,019	104,6	78,4	78,4	57,5
BGP282/292/392 LED25-4S/730	2200	15,8	139,2	0,205	0,033	0,024	0,024	0,018	99,6	74,7	74,7	54,8
BGP282/292/392 LED27-4S/730	2376	17	139,8	0,221	0,033	0,024	0,024	0,018	99,2	74,4	74,4	54,6
BGP282/292/392 LED30-4S/730	2640	18,8	140,4	0,244	0,032	0,024	0,024	0,018	98,7	74,0	74,0	54,3
BGP282/292/392 LED35-4S/730	3080	22	140,0	0,286	0,032	0,024	0,024	0,018	99,0	74,3	74,3	54,5
BGP282/292/392 LED40-4S/730	3480	25	139,2	0,325	0,033	0,024	0,024	0,018	99,6	74,7	74,7	54,8
BGP282/292/392 LED45-4S/730	3915	28,5	137,4	0,370	0,033	0,025	0,025	0,018	100,9	75,7	75,7	55,5
BGP282/292/392 LED50-4S/730	4350	32	135,9	0,416	0,033	0,025	0,025	0,018	102,0	76,5	76,5	56,1

BGP282/292/392 LED54-4S/730	4698	34,5	136,2	0,448	0,033	0,025	0,025	0,018	101,8	76,4	76,4	56,0
BGP282/292/392 LED56-4S/730	4872	36	135,3	0,468	0,034	0,025	0,025	0,018	102,4	76,8	76,8	56,3
BGP282/292/392 LED60-4S/730	5220	39	133,8	0,506	0,034	0,025	0,025	0,019	103,6	77,7	77,7	57,0
BGP282/292/392 LED65-4S/730	5742	40	143,6	0,519	0,032	0,024	0,024	0,017	96,6	72,4	72,4	53,1
BGP282/292/392 LED70-4S/730	6090	43,5	140,0	0,565	0,032	0,024	0,024	0,018	99,0	74,3	74,3	54,5
BGP282/292/392 LED75-4S/730	6612	46,5	142,2	0,604	0,032	0,024	0,024	0,018	97,5	73,1	73,1	53,6
BGP282/292/392 LED80-4S/730	6960	50	139,2	0,649	0,033	0,024	0,024	0,018	99,6	74,7	74,7	54,8
BGP282/292/392 LED85-4S/730	7396	54	137,0	0,701	0,033	0,025	0,025	0,018	101,2	75,9	75,9	55,7
BGP282/292/392 LED90-4S/730	7740	58	133,4	0,753	0,034	0,026	0,026	0,019	103,9	77,9	77,9	57,1
BGP282/292/392 LED94-4S/730	8084	61	132,5	0,792	0,034	0,026	0,026	0,019	104,6	78,5	78,5	57,5
BGP282/292/392 LED99-4S/730	8600	61	141,0	0,792	0,032	0,024	0,024	0,018	98,3	73,8	73,8	54,1
BGP282/292/392 LED109-4S/730	9460	68	139,1	0,883	0,033	0,025	0,025	0,018	99,7	74,7	74,7	54,8
BGP282/292/392 LED119-4S/730	10200	75	136,0	0,974	0,033	0,025	0,025	0,018	101,9	76,5	76,5	56,1
BGP282/292/392 LED130-4S/730	11050	83	133,1	1,078	0,034	0,026	0,026	0,019	104,1	78,1	78,1	57,3
BGP282/292/392 LED135-4S/730	11475	86	133,4	1,117	0,034	0,026	0,026	0,019	103,9	77,9	77,9	57,1
BGP282/292/392 LED139-4S/730	11900	89	133,7	1,156	0,034	0,025	0,025	0,019	103,7	77,8	77,8	57,0
BGP282/292/392 LED149-4S/730	12600	97	129,9	1,260	0,035	0,026	0,026	0,019	106,7	80,0	80,0	58,7
BGP282/292/392 LED14-4S/727	1246	10,6	117,5	0,138	0,039	0,029	0,029	0,021	117,9	88,5	88,5	64,9
BGP282/292/392 LED16-4S/727	1424	11,8	120,7	0,153	0,038	0,028	0,028	0,021	114,9	86,2	86,2	63,2
BGP282/292/392 LED18-4S/727	1602	13,4	119,6	0,174	0,038	0,029	0,029	0,021	116,0	87,0	87,0	63,8

BGP282/292/392 LED20-4S/727	1780	15	118,7	0,195	0,038	0,029	0,029	0,021	116,8	87,6	87,6	64,3
BGP282/292/392 LED22-4S/727	1958	16,4	119,4	0,213	0,038	0,029	0,029	0,021	116,1	87,1	87,1	63,9
BGP282/292/392 LED25-4S/727	2225	17,6	126,4	0,229	0,036	0,027	0,027	0,020	109,7	82,2	82,2	60,3
BGP282/292/392 LED27-4S/727	2403	19	126,5	0,247	0,036	0,027	0,027	0,020	109,6	82,2	82,2	60,3
BGP282/292/392 LED30-4S/727	2670	21	127,1	0,273	0,036	0,027	0,027	0,020	109,0	81,8	81,8	60,0
BGP282/292/392 LED35-4S/727	3080	24,5	125,7	0,318	0,036	0,027	0,027	0,020	110,3	82,7	82,7	60,7
BGP282/292/392 LED40-4S/727	3520	28,5	123,5	0,370	0,037	0,028	0,028	0,020	112,2	84,2	84,2	61,7
BGP282/292/392 LED45-4S/727	3960	32,5	121,8	0,422	0,037	0,028	0,028	0,021	113,8	85,3	85,3	62,6
BGP282/292/392 LED50-4S/727	4350	36,5	119,2	0,474	0,038	0,029	0,029	0,021	116,3	87,2	87,2	64,0
BGP282/292/392 LED54-4S/727	4698	39,5	118,9	0,513	0,038	0,029	0,029	0,021	116,6	87,4	87,4	64,1
BGP282/292/392 LED56-4S/727	4872	41	118,8	0,532	0,038	0,029	0,029	0,021	116,7	87,5	87,5	64,2
BGP282/292/392 LED60-4S/727	5280	41,5	127,2	0,539	0,036	0,027	0,027	0,020	109,0	81,7	81,7	59,9
BGP282/292/392 LED65-4S/727	5808	45,5	127,6	0,591	0,036	0,027	0,027	0,020	108,6	81,5	81,5	59,7
BGP282/292/392 LED70-4S/727	6090	49,5	123,0	0,643	0,037	0,028	0,028	0,020	112,7	84,5	84,5	62,0
BGP282/292/392 LED75-4S/727	6612	53	124,8	0,688	0,036	0,027	0,027	0,020	111,1	83,3	83,3	61,1
BGP282/292/392 LED80-4S/727	6960	57	122,1	0,740	0,037	0,028	0,028	0,020	113,5	85,2	85,2	62,4
BGP282/292/392 LED85-4S/727	7396	62	119,3	0,805	0,038	0,029	0,029	0,021	116,2	87,2	87,2	63,9
BGP282/292/392 LED90-4S/727	7830	62	126,3	0,805	0,036	0,027	0,027	0,020	109,8	82,3	82,3	60,4
BGP282/292/392 LED94-4S/727	8178	65	125,8	0,844	0,036	0,027	0,027	0,020	110,2	82,6	82,6	60,6
BGP282/292/392 LED99-4S/727	8700	69	126,1	0,896	0,036	0,027	0,027	0,020	110,0	82,5	82,5	60,5

BGP282/292/392 LED109-4S/727	9460	77	122,9	1,000	0,037	0,028	0,028	0,020	112,8	84,6	84,6	62,1
BGP282/292/392 LED119-4S/727	10200	86	118,6	1,117	0,038	0,029	0,029	0,021	116,9	87,7	87,7	64,3
BGP282/292/392 LED130-4S/727	11050	95	116,3	1,234	0,039	0,029	0,029	0,021	119,2	89,4	89,4	65,6
BGP282/292/392 LED135-4S/727	11475	99	115,9	1,286	0,039	0,029	0,029	0,022	119,6	89,7	89,7	65,8
BGP282/292/392 LED139-4S/727	11900	102	116,7	1,325	0,039	0,029	0,029	0,021	118,8	89,1	89,1	65,4
BGP282/292/392 LED14-4S/722	1246	11,6	107,4	0,151	0,042	0,032	0,032	0,023	129,1	96,8	96,8	71,0
BGP282/292/392 LED16-4S/722	1424	13,4	106,3	0,174	0,043	0,032	0,032	0,024	130,5	97,8	97,8	71,8
BGP282/292/392 LED18-4S/722	1602	15	106,8	0,195	0,043	0,032	0,032	0,023	129,8	97,4	97,4	71,4
BGP282/292/392 LED20-4S/722	1780	16,8	106,0	0,218	0,043	0,032	0,032	0,024	130,8	98,1	98,1	72,0
BGP282/292/392 LED22-4S/722	1958	18,6	105,3	0,242	0,043	0,032	0,032	0,024	131,7	98,8	98,8	72,4
BGP282/292/392 LED25-4S/722	2225	19,8	112,4	0,257	0,040	0,030	0,030	0,022	123,4	92,5	92,5	67,9
BGP282/292/392 LED27-4S/722	2403	21	114,4	0,273	0,040	0,030	0,030	0,022	121,2	90,9	90,9	66,6
BGP282/292/392 LED30-4S/722	2670	23,5	113,6	0,305	0,040	0,030	0,030	0,022	122,0	91,5	91,5	67,1
BGP282/292/392 LED35-4S/722	3080	28	110,0	0,364	0,041	0,031	0,031	0,023	126,0	94,5	94,5	69,3
BGP282/292/392 LED40-4S/722	3520	32	110,0	0,416	0,041	0,031	0,031	0,023	126,0	94,5	94,5	69,3
BGP282/292/392 LED45-4S/722	3915	36,5	107,3	0,474	0,042	0,032	0,032	0,023	129,3	96,9	96,9	71,1
BGP282/292/392 LED50-4S/722	4400	38,5	114,3	0,500	0,040	0,030	0,030	0,022	121,3	91,0	91,0	66,7
BGP282/292/392 LED54-4S/722	4752	42	113,1	0,545	0,040	0,030	0,030	0,022	122,5	91,9	91,9	67,4
BGP282/292/392 LED56-4S/722	4928	43,5	113,3	0,565	0,040	0,030	0,030	0,022	122,4	91,8	91,8	67,3
BGP282/292/392 LED60-4S/722	5220	47	111,1	0,610	0,041	0,031	0,031	0,023	124,8	93,6	93,6	68,7

BGP282/292/392 LED65-4S/722	5742	51	112,6	0,662	0,040	0,030	0,030	0,022	123,1	92,4	92,4	67,7
BGP282/292/392 LED70-4S/722	6090	56	108,8	0,727	0,042	0,031	0,031	0,023	127,5	95,6	95,6	70,1
BGP282/292/392 LED75-4S/722	6536	60	108,9	0,779	0,042	0,031	0,031	0,023	127,3	95,5	95,5	70,0
BGP282/292/392 LED80-4S/722	6960	61	114,1	0,792	0,040	0,030	0,030	0,022	121,5	91,1	91,1	66,8
BGP282/292/392 LED85-4S/722	7482	66	113,4	0,857	0,040	0,030	0,030	0,022	122,3	91,7	91,7	67,3
BGP282/292/392 LED90-4S/722	7740	70	110,6	0,909	0,041	0,031	0,031	0,023	125,4	94,0	94,0	69,0
BGP282/292/392 LED94-4S/722	8084	74	109,2	0,961	0,042	0,031	0,031	0,023	126,9	95,2	95,2	69,8
BGP282/292/392 LED99-4S/722	8600	78	110,3	1,013	0,041	0,031	0,031	0,023	125,7	94,3	94,3	69,2
BGP282/292/392 LED109-4S/722	9350	88	106,3	1,143	0,043	0,032	0,032	0,024	130,5	97,9	97,9	71,8
BGP282/292/392 LED14-4S/830	1232	10,4	118,5	0,135	0,038	0,029	0,029	0,021	117,0	87,8	87,8	64,4
BGP282/292/392 LED16-4S/830	1408	11,8	119,3	0,153	0,038	0,029	0,029	0,021	116,2	87,1	87,1	63,9
BGP282/292/392 LED18-4S/830	1584	13,2	120,0	0,171	0,038	0,028	0,028	0,021	115,5	86,6	86,6	63,5
BGP282/292/392 LED20-4S/830	1760	14,8	118,9	0,192	0,038	0,029	0,029	0,021	116,6	87,4	87,4	64,1
BGP282/292/392 LED22-4S/830	1936	16,4	118,0	0,213	0,039	0,029	0,029	0,021	117,4	88,1	88,1	64,6
BGP282/292/392 LED25-4S/830	2200	17,6	125,0	0,229	0,036	0,027	0,027	0,020	110,9	83,2	83,2	61,0
BGP282/292/392 LED27-4S/830	2376	18,8	126,4	0,244	0,036	0,027	0,027	0,020	109,7	82,3	82,3	60,3
BGP282/292/392 LED30-4S/830	2640	21	125,7	0,273	0,036	0,027	0,027	0,020	110,3	82,7	82,7	60,7
BGP282/292/392 LED35-4S/830	3045	24,5	124,3	0,318	0,037	0,027	0,027	0,020	111,5	83,7	83,7	61,4
BGP282/292/392 LED40-4S/830	3480	28,5	122,1	0,370	0,037	0,028	0,028	0,020	113,5	85,2	85,2	62,4
BGP282/292/392 LED45-4S/830	3915	32	122,3	0,416	0,037	0,028	0,028	0,020	113,3	85,0	85,0	62,3

BGP282/292/392 LED50-4S/830	4350	36	120,8	0,468	0,038	0,028	0,028	0,021	114,7	86,1	86,1	63,1
BGP282/292/392 LED54-4S/830	4698	39,5	118,9	0,513	0,038	0,029	0,029	0,021	116,6	87,4	87,4	64,1
BGP282/292/392 LED56-4S/830	4872	38,5	126,5	0,500	0,036	0,027	0,027	0,020	109,6	82,2	82,2	60,3
BGP282/292/392 LED60-4S/830	5220	41,5	125,8	0,539	0,036	0,027	0,027	0,020	110,2	82,7	82,7	60,6
BGP282/292/392 LED65-4S/830	5742	45	127,6	0,584	0,036	0,027	0,027	0,020	108,6	81,5	81,5	59,8
BGP282/292/392 LED70-4S/830	6090	49	124,3	0,636	0,037	0,027	0,027	0,020	111,5	83,7	83,7	61,4
BGP282/292/392 LED75-4S/830	6536	53	123,3	0,688	0,037	0,028	0,028	0,020	112,4	84,3	84,3	61,8
BGP282/292/392 LED80-4S/830	6880	57	120,7	0,740	0,038	0,028	0,028	0,021	114,9	86,1	86,1	63,2
BGP282/292/392 LED85-4S/830	7396	58	127,5	0,753	0,036	0,027	0,027	0,020	108,7	81,5	81,5	59,8
BGP282/292/392 LED90-4S/830	7740	62	124,8	0,805	0,036	0,027	0,027	0,020	111,1	83,3	83,3	61,1
BGP282/292/392 LED94-4S/830	8084	65	124,4	0,844	0,037	0,027	0,027	0,020	111,5	83,6	83,6	61,3
BGP282/292/392 LED99-4S/830	8600	69	124,6	0,896	0,036	0,027	0,027	0,020	111,2	83,4	83,4	61,2
BGP282/292/392 LED109-4S/830	9350	77	121,4	1,000	0,037	0,028	0,028	0,021	114,2	85,6	85,6	62,8
BGP282/292/392 LED119-4S/830	10200	85	120,0	1,104	0,038	0,028	0,028	0,021	115,5	86,6	86,6	63,5
BGP282/292/392 LED130-4S/830	10920	94	116,2	1,221	0,039	0,029	0,029	0,022	119,3	89,5	89,5	65,6
BGP282/292/392 LED135-4S/830	11205	99	113,2	1,286	0,040	0,030	0,030	0,022	122,5	91,9	91,9	67,4
BGP282/292/392 LED139-4S/830	11620	102	113,9	1,325	0,040	0,030	0,030	0,022	121,7	91,3	91,3	66,9

\* 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 <sup>21</sup>	kg CO <sub>2e</sub>	5,88E+00	2,61E-01	-1,25E-01	6,02E+00	3,02E-01	5,41E-01	MND	MND	MND	MND	MND	4,06E+02	MND	MNR	1,77E-02	2,62E-01	1,88E-01	-1,09E+01

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

Thus, the calculation of this example would be:

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

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

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

Source Ecoinvent 3.8