

ENVIRONMENTAL PRODUCT DECLARATION

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

Philips ClearFlood

BVP650
Signify N.V.



EPD HUB
Publishing 2024-07-02

The logo features a green circular icon with a stylized 'S' inside, followed by the word 'signify' in a green, 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: ☒ 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 ClearFlood
Additional labels	BVP650 LED440-4S/740 OFA52 ALU PSU
Product reference	912300023955
Place of production	Spain
Period for data	2022
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	%

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 unit of 36960 lumens over 100000 hours
Declared unit mass	6.423 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	5,39E+01
GWP-total, A1-A3 (kgCO ₂ e)	5,19E+01
Secondary material, inputs (%)	14.5
Secondary material, outputs (%)	55.2
Total energy use, A1-A3 (kWh)	196
Total water use, A1-A3 (m ³ e)	0.57

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

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

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

PRODUCT DESCRIPTION

ClearFlood is a range of floodlights that enables you to choose the exact lumen rating that you need for your specific application. Designed around state-of-the-art LEDs and extremely high-efficiency optics, this very competitive solution offers an industry-leading lux per euro ratio and significant energy savings. The choice of different optics in the ClearFlood range opens new application possibilities for LEDs. ClearFlood BVP650 is also easy to install and to maintain.

For more information, please visit
<https://www.lighting.philips.com/link/BVP650/fam/aa/en>

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	56.85	EUR, ASIA
Minerals	23.42	EU

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Fossil materials	19.74	EUR, ASIA
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	0.554

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 Product
Mass per declared unit	6.423 kg
Functional unit	1 unit of 36960 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).

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.

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Thus, it is possible to allocate it according to the weight of the product analysed in this study. Some of the wastes are due to ancillary materials used during manufacturing while the rest is due to material losses.

TRANSPORT AND INSTALLATION (A4-A5)

Transport distances were calculated on the base of the supplier location and manufacturing location and then made a cumulative group choosing the conservative scenario. Environmental impacts from installation include waste packaging materials (A5). The impacts of energy consumption and the used ancillary materials during installation are considered negligible.

PRODUCT USE AND MAINTENANCE (B1-B7)

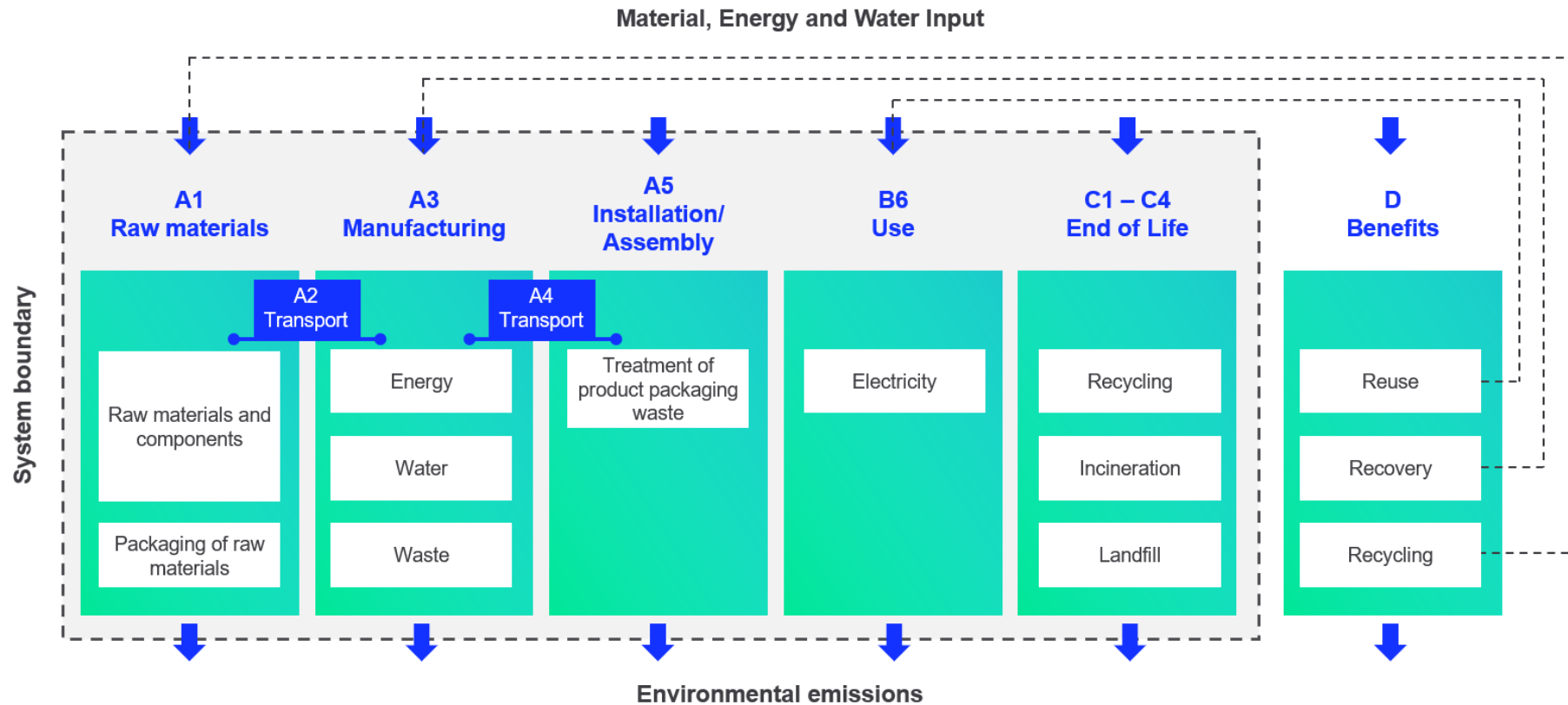
During the use phase, the product consumes electricity from Europe's electricity grid mix (B6). The total power consumption of the reference product is calculated as follows: Wattage x Reference lifetime = kWh consumed throughout the entire use phase B6.

PRODUCT END OF LIFE (C1-C4, D)

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

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

SYSTEM BOUNDARY



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

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

ALLOCATION, ESTIMATES AND ASSUMPTIONS

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

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

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

AVERAGES AND VARIABILITY

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

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

LCA SOFTWARE AND BIBLIOGRAPHY

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

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	5,09E+01	1,46E+00	-4,80E-01	5,19E+01	1,46E+00	2,05E+00	MNR	MNR	MNR	MNR	MNR	1,07E+04	MNR	MNR	8,98E-02	1,15E+00	6,47E-01	-1,02E+01
GWP – fossil	kg CO ₂ e	5,09E+01	1,46E+00	1,51E+00	5,39E+01	1,46E+00	5,26E-02	MNR	MNR	MNR	MNR	MNR	1,07E+04	MNR	MNR	8,97E-02	1,15E+00	6,47E-01	-1,02E+01
GWP – biogenic	kg CO ₂ e	-4,25E-02	0,00E+00	-2,00E+00	-2,04E+00	5,66E-04	2,00E+00	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	0,00E+00	0,00E+00	-5,16E-03
GWP – LULUC	kg CO ₂ e	6,99E-02	5,60E-04	1,01E-02	8,05E-02	5,40E-04	1,80E-05	MNR	MNR	MNR	MNR	MNR	2,50E+01	MNR	MNR	3,31E-05	1,29E-04	7,13E-05	-2,92E-03
Ozone depletion pot.	kg CFC ₁₁ e	9,39E-06	3,35E-07	1,46E-07	9,87E-06	3,37E-07	5,25E-09	MNR	MNR	MNR	MNR	MNR	5,42E-04	MNR	MNR	2,06E-08	1,01E-08	9,83E-09	-3,11E-07
Acidification potential	mol H ⁺ e	5,91E-01	7,78E-03	7,55E-03	6,07E-01	6,20E-03	4,12E-04	MNR	MNR	MNR	MNR	MNR	6,10E+01	MNR	MNR	3,80E-04	1,07E-03	4,67E-04	-1,79E-01
EP-freshwater ²⁾	kg Pe	2,83E-03	1,17E-05	8,68E-05	2,93E-03	1,20E-05	5,49E-07	MNR	MNR	MNR	MNR	MNR	1,13E+00	MNR	MNR	7,35E-07	3,95E-06	6,51E-06	-8,55E-04
EP-marine	kg Ne	6,21E-02	2,22E-03	3,68E-03	6,80E-02	1,84E-03	1,75E-04	MNR	MNR	MNR	MNR	MNR	8,08E+00	MNR	MNR	1,13E-04	2,88E-04	1,55E-03	-1,38E-02
EP-terrestrial	mol Ne	1,17E+00	2,45E-02	2,23E-02	1,22E+00	2,03E-02	1,81E-03	MNR	MNR	MNR	MNR	MNR	9,20E+01	MNR	MNR	1,25E-03	3,17E-03	1,63E-03	-1,72E-01
POCP (“smog”) ³⁾	kg NMVOCe	2,14E-01	7,54E-03	5,71E-03	2,28E-01	6,50E-03	4,53E-04	MNR	MNR	MNR	MNR	MNR	2,52E+01	MNR	MNR	3,98E-04	8,32E-04	6,89E-04	-4,93E-02
ADP-minerals & metals ⁴⁾	kg Sbe	6,79E-03	3,38E-06	8,56E-06	6,80E-03	3,43E-06	1,72E-07	MNR	MNR	MNR	MNR	MNR	9,96E-02	MNR	MNR	2,10E-07	7,48E-06	1,93E-07	-2,93E-03
ADP-fossil resources	MJ	6,15E+02	2,18E+01	1,97E+01	6,57E+02	2,20E+01	4,09E-01	MNR	MNR	MNR	MNR	MNR	2,27E+05	MNR	MNR	1,35E+00	1,20E+00	8,67E-01	-1,03E+02
Water use ⁵⁾	m ³ e depr.	2,24E+01	9,67E-02	7,91E-01	2,32E+01	9,83E-02	9,64E-02	MNR	MNR	MNR	MNR	MNR	6,21E+03	MNR	MNR	6,03E-03	5,97E-02	5,07E-02	-1,39E+00

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO₄e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	4,93E-06	1,64E-07	1,41E-07	5,23E-06	1,69E-07	3,83E-09	MNR	MNR	MNR	MNR	MNR	2,00E-04	MNR	MNR	1,03E-08	1,25E-08	6,69E-09	-7,18E-07
Ionizing radiation ⁶⁾	kBq U235e	3,63E+00	1,04E-01	6,68E-02	3,80E+00	1,05E-01	1,48E-03	MNR	MNR	MNR	MNR	MNR	6,15E+03	MNR	MNR	6,42E-03	7,69E-03	4,54E-03	-6,62E-01

Ecotoxicity (freshwater)	CTUe	3,88E+03	1,95E+01	6,77E+01	3,97E+03	1,98E+01	2,80E+00	MNR	MNR	MNR	MNR	MNR	1,54E+05	MNR	MNR	1,21E+00	6,83E+00	9,09E+01	-8,68E+02
Human toxicity, cancer	CTUh	1,43E-07	5,01E-10	1,08E-09	1,45E-07	4,86E-10	1,28E-10	MNR	MNR	MNR	MNR	MNR	5,06E-06	MNR	MNR	2,98E-11	2,19E-10	1,29E-09	-1,38E-08
Human tox. non-cancer	CTUh	3,60E-06	1,91E-08	2,10E-08	3,64E-06	1,96E-08	5,33E-09	MNR	MNR	MNR	MNR	MNR	1,66E-04	MNR	MNR	1,20E-09	8,77E-09	8,47E-08	-1,58E-06
SQP ⁷⁾	-	2,26E+02	2,45E+01	5,99E+01	3,10E+02	2,53E+01	2,24E-01	MNR	MNR	MNR	MNR	MNR	4,11E+04	MNR	MNR	1,55E+00	1,71E+00	1,45E+00	-4,86E+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	6,56E+01	2,43E-01	1,37E+01	7,96E+01	2,48E-01	1,34E-02	MNR	MNR	MNR	MNR	MNR	4,62E+04	MNR	MNR	1,52E-02	1,52E-01	3,10E-02	-4,39E+00
Renew. PER as material	MJ	3,12E+00	0,00E+00	1,76E+01	2,07E+01	0,00E+00	-1,76E+01	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	-9,46E-01	-1,76E+00	0,00E+00
Total use of renew. PER	MJ	6,88E+01	2,43E-01	3,13E+01	1,00E+02	2,48E-01	-1,76E+01	MNR	MNR	MNR	MNR	MNR	4,62E+04	MNR	MNR	1,52E-02	-7,94E-01	-1,73E+00	-4,39E+00
Non-re. PER as energy	MJ	5,85E+02	2,18E+01	1,92E+01	6,26E+02	2,20E+01	4,09E-01	MNR	MNR	MNR	MNR	MNR	2,27E+05	MNR	MNR	1,35E+00	1,20E+00	8,67E-01	-1,03E+02
Non-re. PER as material	MJ	2,82E+01	0,00E+00	1,55E-01	2,84E+01	0,00E+00	-1,55E-01	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	-1,02E+01	-1,13E+01	3,82E-01
Total use of non-re. PER	MJ	6,14E+02	2,18E+01	1,94E+01	6,55E+02	2,20E+01	2,54E-01	MNR	MNR	MNR	MNR	MNR	2,27E+05	MNR	MNR	1,35E+00	-9,04E+00	-1,04E+01	-1,02E+02
Secondary materials	kg	9,28E-01	6,19E-03	1,32E+00	2,26E+00	6,10E-03	4,86E-04	MNR	MNR	MNR	MNR	MNR	2,34E+01	MNR	MNR	3,74E-04	1,07E-03	1,82E-03	4,84E-01
Renew. secondary fuels	MJ	3,42E-02	6,01E-05	9,39E-02	1,28E-01	6,16E-05	7,97E-06	MNR	MNR	MNR	MNR	MNR	1,90E-01	MNR	MNR	3,78E-06	5,66E-05	1,47E-05	-2,36E-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	5,46E-01	2,78E-03	1,87E-02	5,68E-01	2,85E-03	1,67E-03	MNR	MNR	MNR	MNR	MNR	1,95E+02	MNR	MNR	1,75E-04	2,09E-03	1,24E-03	-6,45E-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	9,31E+00	2,90E-02	8,38E-02	9,42E+00	2,91E-02	1,93E-03	MNR	MNR	MNR	MNR	MNR	8,15E+02	MNR	MNR	1,79E-03	7,40E-03	5,65E-02	-1,70E+00
Non-hazardous waste	kg	1,29E+02	4,68E-01	1,65E+00	1,31E+02	4,79E-01	1,33E+00	MNR	MNR	MNR	MNR	MNR	5,16E+04	MNR	MNR	2,94E-02	7,20E-01	2,80E+00	-5,49E+01
Radioactive waste	kg	1,51E-03	1,46E-04	4,08E-05	1,70E-03	1,47E-04	6,79E-07	MNR	MNR	MNR	MNR	MNR	1,65E+00	MNR	MNR	9,02E-06	4,20E-06	0,00E+00	-2,46E-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	3,11E+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	4,33E-01	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	3,56E-01	3,56E-01	0,00E+00	0,00E+00	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	9,89E+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 ₂ e	4,98E+01	1,45E+00	1,58E+00	5,29E+01	1,45E+00	5,02E-02	MNR	MNR	MNR	MNR	MNR	1,06E+04	MNR	MNR	8,88E-02	1,14E+00	1,27E+00	-1,00E+01
Ozone depletion Pot.	kg CFC-11e	7,05E-06	2,65E-07	1,21E-07	7,44E-06	2,67E-07	4,58E-09	MNR	MNR	MNR	MNR	MNR	4,70E-04	MNR	MNR	1,63E-08	8,40E-09	7,96E-09	-2,62E-07
Acidification	kg SO ₂ e	4,67E-01	6,08E-03	5,44E-03	4,78E-01	4,81E-03	3,00E-04	MNR	MNR	MNR	MNR	MNR	5,17E+01	MNR	MNR	2,95E-04	8,42E-04	3,58E-04	-1,56E-01
Eutrophication	kg PO ₄ ³ e	1,50E-01	1,22E-03	4,01E-03	1,56E-01	1,10E-03	2,24E-04	MNR	MNR	MNR	MNR	MNR	3,98E+01	MNR	MNR	6,72E-05	3,57E-04	5,13E-03	-4,01E-02
POCP ("smog")	kg C ₂ H ₄ e	2,47E-02	2,18E-04	4,10E-04	2,53E-02	1,88E-04	9,37E-06	MNR	MNR	MNR	MNR	MNR	2,11E+00	MNR	MNR	1,15E-05	3,00E-05	1,62E-04	-6,82E-03
ADP-elements	kg Sbe	6,76E-03	3,27E-06	7,27E-06	6,78E-03	3,32E-06	1,35E-07	MNR	MNR	MNR	MNR	MNR	9,94E-02	MNR	MNR	2,04E-07	7,46E-06	1,77E-07	-2,93E-03
ADP-fossil	MJ	6,15E+02	2,18E+01	1,96E+01	6,56E+02	2,20E+01	4,09E-01	MNR	MNR	MNR	MNR	MNR	2,27E+05	MNR	MNR	1,35E+00	1,20E+00	8,67E-01	-1,03E+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
BVP650 LED110-4S/722	9790.0	89.0	110.0	0.33	0.33	0.248	0.248	0.182	3531.0	2653.6	2653.6	1947.4
BVP650 LED130-4S/722	11440.0	106.0	107.9	0.393	0.393	0.295	0.295	0.216	4205.1	3156.5	3156.5	2311.2
BVP650 LED140-4S/722	12320.0	114.0	108.1	0.422	0.422	0.316	0.316	0.232	4515.4	3381.2	3381.2	2482.4
BVP650 LED160-4S/722	14080.0	132.0	106.7	0.489	0.489	0.367	0.367	0.269	5232.3	3926.9	3926.9	2878.3
BVP650 LED180-4S/722	15840.0	150.0	105.6	0.556	0.556	0.417	0.417	0.306	5949.2	4461.9	4461.9	3274.2
BVP650 LED200-4S/722	17400.0	160.0	108.8	0.593	0.593	0.445	0.445	0.326	6345.1	4761.5	4761.5	3488.2
BVP650 LED220-4S/722	19140.0	178.0	107.5	0.659	0.659	0.494	0.494	0.362	7051.3	5285.8	5285.8	3873.4
BVP650 LED240-4S/722	20880.0	194.0	107.6	0.719	0.719	0.539	0.539	0.395	7693.3	5767.3	5767.3	4226.5
BVP650 LED260-4S/722	22360.0	215.0	104.0	0.796	0.796	0.597	0.597	0.438	8517.2	6387.9	6387.9	4686.6
BVP650 LED280-4S/722	24080.0	230.0	104.7	0.852	0.852	0.639	0.639	0.469	9116.4	6837.3	6837.3	5018.3
BVP650 LED300-4S/722	25800.0	250.0	103.2	0.926	0.926	0.694	0.694	0.509	9908.2	7425.8	7425.8	5446.3
BVP650 LED320-4S/722	27200.0	270.0	100.7	1.0	1.0	0.75	0.75	0.55	10700.0	8025.0	8025.0	5885.0

BVP650 LED340-4S/722	28900.0	290.0	99.7	1.074	1.074	0.806	0.806	0.591	11491.8	8624.2	8624.2	6323.7
BVP650 LED70-4S/722	6230.0	57.0	109.3	0.211	0.211	0.158	0.158	0.116	2257.7	1690.6	1690.6	1241.2
BVP650 LED90-4S/722	8010.0	74.0	108.2	0.274	0.274	0.206	0.206	0.151	2931.8	2204.2	2204.2	1615.7
BVP650 LED100-4S/727	8900.0	68.0	130.9	0.252	0.252	0.189	0.189	0.139	2696.4	2022.3	2022.3	1487.3
BVP650 LED120-4S/727	10560.0	83.0	127.2	0.307	0.307	0.23	0.23	0.169	3284.9	2461.0	2461.0	1808.3
BVP650 LED140-4S/727	12320.0	97.0	127.0	0.359	0.359	0.269	0.269	0.197	3841.3	2878.3	2878.3	2107.9
BVP650 LED160-4S/727	14080.0	112.0	125.7	0.415	0.415	0.311	0.311	0.228	4440.5	3327.7	3327.7	2439.6
BVP650 LED180-4S/727	15840.0	128.0	123.8	0.474	0.474	0.356	0.356	0.261	5071.8	3809.2	3809.2	2792.7
BVP650 LED200-4S/727	17400.0	144.0	120.8	0.533	0.533	0.4	0.4	0.293	5703.1	4280.0	4280.0	3135.1
BVP650 LED220-4S/727	19140.0	160.0	119.6	0.593	0.593	0.445	0.445	0.326	6345.1	4761.5	4761.5	3488.2
BVP650 LED240-4S/727	20880.0	166.0	125.8	0.615	0.615	0.461	0.461	0.338	6580.5	4932.7	4932.7	3616.6
BVP650 LED260-4S/727	22360.0	180.0	124.2	0.667	0.667	0.5	0.5	0.367	7136.9	5350.0	5350.0	3926.9
BVP650 LED280-4S/727	24080.0	196.0	122.9	0.726	0.726	0.544	0.544	0.399	7768.2	5820.8	5820.8	4269.3
BVP650 LED300-4S/727	25800.0	210.0	122.9	0.778	0.778	0.584	0.584	0.428	8324.6	6248.8	6248.8	4579.6
BVP650 LED320-4S/727	27200.0	225.0	120.9	0.833	0.833	0.625	0.625	0.458	8913.1	6687.5	6687.5	4900.6
BVP650 LED340-4S/727	28900.0	245.0	118.0	0.907	0.907	0.68	0.68	0.499	9704.9	7276.0	7276.0	5339.3
BVP650 LED360-4S/727	30240.0	260.0	116.3	0.963	0.963	0.722	0.722	0.53	10304.1	7725.4	7725.4	5671.0
BVP650 LED380-4S/727	31920.0	280.0	114.0	1.037	1.037	0.778	0.778	0.57	11095.9	8324.6	8324.6	6099.0
BVP650 LED400-4S/727	33600.0	295.0	113.9	1.093	1.093	0.82	0.82	0.601	11695.1	8774.0	8774.0	6430.7
BVP650 LED70-4S/727	6230.0	48.0	129.8	0.178	0.178	0.134	0.134	0.098	1904.6	1433.8	1433.8	1048.6
BVP650 LED80-4S/727	7120.0	55.0	129.5	0.204	0.204	0.153	0.153	0.112	2182.8	1637.1	1637.1	1198.4
BVP650 LED100-4S/730	8900.0	61.0	145.9	0.226	0.226	0.17	0.17	0.124	2418.2	1819.0	1819.0	1326.8
BVP650 LED120-4S/730	10680.0	74.0	144.3	0.274	0.274	0.206	0.206	0.151	2931.8	2204.2	2204.2	1615.7
BVP650 LED140-4S/730	12460.0	87.0	143.2	0.322	0.322	0.242	0.242	0.177	3445.4	2589.4	2589.4	1893.9
BVP650 LED160-4S/730	14080.0	100.0	140.8	0.37	0.37	0.277	0.277	0.204	3959.0	2963.9	2963.9	2182.8

BVP650 LED180-4S/730	15840.0	114.0	138.9	0.422	0.422	0.316	0.316	0.232	4515.4	3381.2	3381.2	2482.4
BVP650 LED200-4S/730	17600.0	128.0	137.5	0.474	0.474	0.356	0.356	0.261	5071.8	3809.2	3809.2	2792.7
BVP650 LED220-4S/730	19360.0	142.0	136.3	0.526	0.526	0.394	0.394	0.289	5628.2	4215.8	4215.8	3092.3
BVP650 LED240-4S/730	21120.0	148.0	142.7	0.548	0.548	0.411	0.411	0.301	5863.6	4397.7	4397.7	3220.7
BVP650 LED260-4S/730	22880.0	162.0	141.2	0.6	0.6	0.45	0.45	0.33	6420.0	4815.0	4815.0	3531.0
BVP650 LED280-4S/730	24360.0	176.0	138.4	0.652	0.652	0.489	0.489	0.359	6976.4	5232.3	5232.3	3841.3
BVP650 LED300-4S/730	26100.0	188.0	138.8	0.696	0.696	0.522	0.522	0.383	7447.2	5585.4	5585.4	4098.1
BVP650 LED320-4S/730	27840.0	200.0	139.2	0.741	0.741	0.556	0.556	0.408	7928.7	5949.2	5949.2	4365.6
BVP650 LED340-4S/730	29240.0	215.0	136.0	0.796	0.796	0.597	0.597	0.438	8517.2	6387.9	6387.9	4686.6
BVP650 LED360-4S/730	30960.0	230.0	134.6	0.852	0.852	0.639	0.639	0.469	9116.4	6837.3	6837.3	5018.3
BVP650 LED380-4S/730	32680.0	245.0	133.4	0.907	0.907	0.68	0.68	0.499	9704.9	7276.0	7276.0	5339.3
BVP650 LED400-4S/730	34000.0	260.0	130.8	0.963	0.963	0.722	0.722	0.53	10304.1	7725.4	7725.4	5671.0
BVP650 LED420-4S/730	35700.0	275.0	129.8	1.019	1.019	0.764	0.764	0.56	10903.3	8174.8	8174.8	5992.0
BVP650 LED440-4S/730	37400.0	290.0	129.0	1.074	1.074	0.806	0.806	0.591	11491.8	8624.2	8624.2	6323.7
BVP650 LED70-4S/730	6230.0	43.0	144.9	0.159	0.159	0.119	0.119	0.087	1701.3	1273.3	1273.3	930.9
BVP650 LED80-4S/730	7120.0	49.5	143.8	0.183	0.183	0.137	0.137	0.101	1958.1	1465.9	1465.9	1080.7
BVP650 LED100-4S/740	8900.0	57.0	156.1	0.211	0.211	0.158	0.158	0.116	2257.7	1690.6	1690.6	1241.2
BVP650 LED120-4S/740	10680.0	70.0	152.6	0.259	0.259	0.194	0.194	0.142	2771.3	2075.8	2075.8	1519.4
BVP650 LED140-4S/740	12460.0	82.0	152.0	0.304	0.304	0.228	0.228	0.167	3252.8	2439.6	2439.6	1786.9
BVP650 LED160-4S/740	14240.0	94.0	151.5	0.348	0.348	0.261	0.261	0.191	3723.6	2792.7	2792.7	2043.7
BVP650 LED180-4S/740	15840.0	106.0	149.4	0.393	0.393	0.295	0.295	0.216	4205.1	3156.5	3156.5	2311.2
BVP650 LED200-4S/740	17600.0	120.0	146.7	0.444	0.444	0.333	0.333	0.244	4750.8	3563.1	3563.1	2610.8
BVP650 LED220-4S/740	19360.0	132.0	146.7	0.489	0.489	0.367	0.367	0.269	5232.3	3926.9	3926.9	2878.3
BVP650 LED240-4S/740	21120.0	140.0	150.9	0.519	0.519	0.389	0.389	0.285	5553.3	4162.3	4162.3	3049.5
BVP650 LED260-4S/740	22880.0	152.0	150.5	0.563	0.563	0.422	0.422	0.31	6024.1	4515.4	4515.4	3317.0

BVP650 LED280-4S/740	24360.0	164.0	148.5	0.607	0.607	0.455	0.455	0.334	6494.9	4868.5	4868.5	3573.8
BVP650 LED300-4S/740	26100.0	176.0	148.3	0.652	0.652	0.489	0.489	0.359	6976.4	5232.3	5232.3	3841.3
BVP650 LED320-4S/740	27840.0	190.0	146.5	0.704	0.704	0.528	0.528	0.387	7532.8	5649.6	5649.6	4140.9
BVP650 LED340-4S/740	29580.0	200.0	147.9	0.741	0.741	0.556	0.556	0.408	7928.7	5949.2	5949.2	4365.6
BVP650 LED360-4S/740	30960.0	215.0	144.0	0.796	0.796	0.597	0.597	0.438	8517.2	6387.9	6387.9	4686.6
BVP650 LED380-4S/740	32680.0	230.0	142.1	0.852	0.852	0.639	0.639	0.469	9116.4	6837.3	6837.3	5018.3
BVP650 LED400-4S/740	34400.0	245.0	140.4	0.907	0.907	0.68	0.68	0.499	9704.9	7276.0	7276.0	5339.3
BVP650 LED420-4S/740	36120.0	255.0	141.6	0.944	0.944	0.708	0.708	0.519	10100.8	7575.6	7575.6	5553.3
BVP650 LED440-4S/740	37400.0	270.0	138.5	1.0	1.0	0.75	0.75	0.55	10700.0	8025.0	8025.0	5885.0
BVP650 LED460-4S/740	39100.0	285.0	137.2	1.056	1.056	0.792	0.792	0.581	11299.2	8474.4	8474.4	6216.7
BVP650 LED480-4S/740	40800.0	300.0	136.0	1.111	1.111	0.833	0.833	0.611	11887.7	8913.1	8913.1	6537.7
BVP650 LED70-4S/740	6230.0	40.5	153.8	0.15	0.15	0.112	0.112	0.082	1605.0	1198.4	1198.4	877.4
BVP650 LED80-4S/740	7120.0	46.5	153.1	0.172	0.172	0.129	0.129	0.095	1840.4	1380.3	1380.3	1016.5
BVP650 LED100-4S/757	8900.0	57.0	156.1	0.211	0.211	0.158	0.158	0.116	2257.7	1690.6	1690.6	1241.2
BVP650 LED120-4S/757	10680.0	70.0	152.6	0.259	0.259	0.194	0.194	0.142	2771.3	2075.8	2075.8	1519.4
BVP650 LED140-4S/757	12460.0	82.0	152.0	0.304	0.304	0.228	0.228	0.167	3252.8	2439.6	2439.6	1786.9
BVP650 LED160-4S/757	14240.0	94.0	151.5	0.348	0.348	0.261	0.261	0.191	3723.6	2792.7	2792.7	2043.7
BVP650 LED180-4S/757	15840.0	106.0	149.4	0.393	0.393	0.295	0.295	0.216	4205.1	3156.5	3156.5	2311.2
BVP650 LED200-4S/757	17600.0	120.0	146.7	0.444	0.444	0.333	0.333	0.244	4750.8	3563.1	3563.1	2610.8
BVP650 LED220-4S/757	19360.0	132.0	146.7	0.489	0.489	0.367	0.367	0.269	5232.3	3926.9	3926.9	2878.3
BVP650 LED240-4S/757	21120.0	140.0	150.9	0.519	0.519	0.389	0.389	0.285	5553.3	4162.3	4162.3	3049.5
BVP650 LED260-4S/757	22880.0	152.0	150.5	0.563	0.563	0.422	0.422	0.31	6024.1	4515.4	4515.4	3317.0
BVP650 LED280-4S/757	24360.0	164.0	148.5	0.607	0.607	0.455	0.455	0.334	6494.9	4868.5	4868.5	3573.8
BVP650 LED300-4S/757	26100.0	176.0	148.3	0.652	0.652	0.489	0.489	0.359	6976.4	5232.3	5232.3	3841.3
BVP650 LED320-4S/757	27840.0	190.0	146.5	0.704	0.704	0.528	0.528	0.387	7532.8	5649.6	5649.6	4140.9

BVP650 LED340-4S/757	29580.0	200.0	147.9	0.741	0.741	0.556	0.556	0.408	7928.7	5949.2	5949.2	4365.6
BVP650 LED360-4S/757	30960.0	215.0	144.0	0.796	0.796	0.597	0.597	0.438	8517.2	6387.9	6387.9	4686.6
BVP650 LED380-4S/757	32680.0	230.0	142.1	0.852	0.852	0.639	0.639	0.469	9116.4	6837.3	6837.3	5018.3
BVP650 LED400-4S/757	34400.0	245.0	140.4	0.907	0.907	0.68	0.68	0.499	9704.9	7276.0	7276.0	5339.3
BVP650 LED420-4S/757	36120.0	255.0	141.6	0.944	0.944	0.708	0.708	0.519	10100.8	7575.6	7575.6	5553.3
BVP650 LED440-4S/757	37400.0	270.0	138.5	1.0	1.0	0.75	0.75	0.55	10700.0	8025.0	8025.0	5885.0
BVP650 LED460-4S/757	39100.0	285.0	137.2	1.056	1.056	0.792	0.792	0.581	11299.2	8474.4	8474.4	6216.7
BVP650 LED480-4S/757	40800.0	300.0	136.0	1.111	1.111	0.833	0.833	0.611	11887.7	8913.1	8913.1	6537.7
BVP650 LED70-4S/757	6230.0	40.5	153.8	0.15	0.15	0.112	0.112	0.082	1605.0	1198.4	1198.4	877.4
BVP650 LED80-4S/757	7120.0	46.5	153.1	0.172	0.172	0.129	0.129	0.095	1840.4	1380.3	1380.3	1016.5
BVP650 LED110-4S/827	9790.0	89.0	110.0	0.33	0.33	0.248	0.248	0.182	3531.0	2653.6	2653.6	1947.4
BVP650 LED130-4S/827	11440.0	106.0	107.9	0.393	0.393	0.295	0.295	0.216	4205.1	3156.5	3156.5	2311.2
BVP650 LED140-4S/827	12320.0	114.0	108.1	0.422	0.422	0.316	0.316	0.232	4515.4	3381.2	3381.2	2482.4
BVP650 LED160-4S/827	14080.0	132.0	106.7	0.489	0.489	0.367	0.367	0.269	5232.3	3926.9	3926.9	2878.3
BVP650 LED180-4S/827	15840.0	150.0	105.6	0.556	0.556	0.417	0.417	0.306	5949.2	4461.9	4461.9	3274.2
BVP650 LED200-4S/827	17400.0	160.0	108.8	0.593	0.593	0.445	0.445	0.326	6345.1	4761.5	4761.5	3488.2
BVP650 LED220-4S/827	19140.0	178.0	107.5	0.659	0.659	0.494	0.494	0.362	7051.3	5285.8	5285.8	3873.4
BVP650 LED240-4S/827	20880.0	194.0	107.6	0.719	0.719	0.539	0.539	0.395	7693.3	5767.3	5767.3	4226.5
BVP650 LED260-4S/827	22360.0	215.0	104.0	0.796	0.796	0.597	0.597	0.438	8517.2	6387.9	6387.9	4686.6
BVP650 LED280-4S/827	24080.0	230.0	104.7	0.852	0.852	0.639	0.639	0.469	9116.4	6837.3	6837.3	5018.3
BVP650 LED300-4S/827	25800.0	250.0	103.2	0.926	0.926	0.694	0.694	0.509	9908.2	7425.8	7425.8	5446.3
BVP650 LED320-4S/827	27200.0	270.0	100.7	1.0	1.0	0.75	0.75	0.55	10700.0	8025.0	8025.0	5885.0
BVP650 LED340-4S/827	28900.0	290.0	99.7	1.074	1.074	0.806	0.806	0.591	11491.8	8624.2	8624.2	6323.7
BVP650 LED70-4S/827	6230.0	57.0	109.3	0.211	0.211	0.158	0.158	0.116	2257.7	1690.6	1690.6	1241.2
BVP650 LED90-4S/827	8010.0	74.0	108.2	0.274	0.274	0.206	0.206	0.151	2931.8	2204.2	2204.2	1615.7

BVP650 LED110-4S/830	9790.0	82.0	119.4	0.304	0.304	0.228	0.228	0.167	3252.8	2439.6	2439.6	1786.9
BVP650 LED130-4S/830	11440.0	98.0	116.7	0.363	0.363	0.272	0.272	0.2	3884.1	2910.4	2910.4	2140.0
BVP650 LED140-4S/830	12320.0	106.0	116.2	0.393	0.393	0.295	0.295	0.216	4205.1	3156.5	3156.5	2311.2
BVP650 LED160-4S/830	14080.0	122.0	115.4	0.452	0.452	0.339	0.339	0.249	4836.4	3627.3	3627.3	2664.3
BVP650 LED180-4S/830	15840.0	138.0	114.8	0.511	0.511	0.383	0.383	0.281	5467.7	4098.1	4098.1	3006.7
BVP650 LED200-4S/830	17600.0	148.0	118.9	0.548	0.548	0.411	0.411	0.301	5863.6	4397.7	4397.7	3220.7
BVP650 LED220-4S/830	19140.0	164.0	116.7	0.607	0.607	0.455	0.455	0.334	6494.9	4868.5	4868.5	3573.8
BVP650 LED240-4S/830	20880.0	180.0	116.0	0.667	0.667	0.5	0.5	0.367	7136.9	5350.0	5350.0	3926.9
BVP650 LED260-4S/830	22620.0	196.0	115.4	0.726	0.726	0.544	0.544	0.399	7768.2	5820.8	5820.8	4269.3
BVP650 LED280-4S/830	24080.0	215.0	112.0	0.796	0.796	0.597	0.597	0.438	8517.2	6387.9	6387.9	4686.6
BVP650 LED300-4S/830	25800.0	230.0	112.2	0.852	0.852	0.639	0.639	0.469	9116.4	6837.3	6837.3	5018.3
BVP650 LED320-4S/830	27520.0	250.0	110.1	0.926	0.926	0.694	0.694	0.509	9908.2	7425.8	7425.8	5446.3
BVP650 LED340-4S/830	28900.0	265.0	109.1	0.981	0.981	0.736	0.736	0.54	10496.7	7875.2	7875.2	5778.0
BVP650 LED360-4S/830	30600.0	285.0	107.4	1.056	1.056	0.792	0.792	0.581	11299.2	8474.4	8474.4	6216.7
BVP650 LED380-4S/830	32300.0	305.0	105.9	1.13	1.13	0.847	0.847	0.621	12091.0	9062.9	9062.9	6644.7
BVP650 LED70-4S/830	6230.0	52.0	119.8	0.193	0.193	0.145	0.145	0.106	2065.1	1551.5	1551.5	1134.2
BVP650 LED90-4S/830	8010.0	69.0	116.1	0.256	0.256	0.192	0.192	0.141	2739.2	2054.4	2054.4	1508.7
BVP650 LED110-4S/840	9790.0	80.0	122.4	0.296	0.296	0.222	0.222	0.163	3167.2	2375.4	2375.4	1744.1
BVP650 LED130-4S/840	11570.0	95.0	121.8	0.352	0.352	0.264	0.264	0.194	3766.4	2824.8	2824.8	2075.8
BVP650 LED140-4S/840	12320.0	102.0	120.8	0.378	0.378	0.284	0.284	0.208	4044.6	3038.8	3038.8	2225.6
BVP650 LED160-4S/840	14080.0	118.0	119.3	0.437	0.437	0.328	0.328	0.24	4675.9	3509.6	3509.6	2568.0
BVP650 LED180-4S/840	15840.0	134.0	118.2	0.496	0.496	0.372	0.372	0.273	5307.2	3980.4	3980.4	2921.1
BVP650 LED200-4S/840	17600.0	144.0	122.2	0.533	0.533	0.4	0.4	0.293	5703.1	4280.0	4280.0	3135.1
BVP650 LED220-4S/840	19360.0	158.0	122.5	0.585	0.585	0.439	0.439	0.322	6259.5	4697.3	4697.3	3445.4
BVP650 LED240-4S/840	20880.0	174.0	120.0	0.644	0.644	0.483	0.483	0.354	6890.8	5168.1	5168.1	3787.8

BVP650 LED260-4S/840	22620.0	190.0	119.1	0.704	0.704	0.528	0.528	0.387	7532.8	5649.6	5649.6	4140.9
BVP650 LED280-4S/840	24360.0	205.0	118.8	0.759	0.759	0.569	0.569	0.417	8121.3	6088.3	6088.3	4461.9
BVP650 LED300-4S/840	25800.0	220.0	117.3	0.815	0.815	0.611	0.611	0.448	8720.5	6537.7	6537.7	4793.6
BVP650 LED320-4S/840	27520.0	240.0	114.7	0.889	0.889	0.667	0.667	0.489	9512.3	7136.9	7136.9	5232.3
BVP650 LED340-4S/840	28900.0	255.0	113.3	0.944	0.944	0.708	0.708	0.519	10100.8	7575.6	7575.6	5553.3
BVP650 LED360-4S/840	30600.0	275.0	111.3	1.019	1.019	0.764	0.764	0.56	10903.3	8174.8	8174.8	5992.0
BVP650 LED380-4S/840	32300.0	290.0	111.4	1.074	1.074	0.806	0.806	0.591	11491.8	8624.2	8624.2	6323.7
BVP650 LED70-4S/840	6230.0	51.0	122.2	0.189	0.189	0.142	0.142	0.104	2022.3	1519.4	1519.4	1112.8
BVP650 LED90-4S/840	8010.0	66.0	121.4	0.244	0.244	0.183	0.183	0.134	2610.8	1958.1	1958.1	1433.8

* 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
BVP650 LED110-4S/722	9790.0	89.0	110.0	0.33	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED130-4S/722	11440.0	106.0	107.9	0.393	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED140-4S/722	12320.0	114.0	108.1	0.422	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED160-4S/722	14080.0	132.0	106.7	0.489	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED180-4S/722	15840.0	150.0	105.6	0.556	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9

BVP650 LED200-4S/722	17400.0	160.0	108.8	0.593	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED220-4S/722	19140.0	178.0	107.5	0.659	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED240-4S/722	20880.0	194.0	107.6	0.719	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED260-4S/722	22360.0	215.0	104.0	0.796	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED280-4S/722	24080.0	230.0	104.7	0.852	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED300-4S/722	25800.0	250.0	103.2	0.926	0.013	0.01	0.01	0.007	139.1	107.0	107.0	74.9
BVP650 LED320-4S/722	27200.0	270.0	100.7	1.0	0.013	0.01	0.01	0.007	139.1	107.0	107.0	74.9
BVP650 LED340-4S/722	28900.0	290.0	99.7	1.074	0.013	0.01	0.01	0.007	139.1	107.0	107.0	74.9
BVP650 LED70-4S/722	6230.0	57.0	109.3	0.211	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED90-4S/722	8010.0	74.0	108.2	0.274	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED100-4S/727	8900.0	68.0	130.9	0.252	0.01	0.008	0.008	0.006	107.0	85.6	85.6	64.2
BVP650 LED120-4S/727	10560.0	83.0	127.2	0.307	0.01	0.008	0.008	0.006	107.0	85.6	85.6	64.2
BVP650 LED140-4S/727	12320.0	97.0	127.0	0.359	0.01	0.008	0.008	0.006	107.0	85.6	85.6	64.2
BVP650 LED160-4S/727	14080.0	112.0	125.7	0.415	0.01	0.008	0.008	0.006	107.0	85.6	85.6	64.2
BVP650 LED180-4S/727	15840.0	128.0	123.8	0.474	0.01	0.008	0.008	0.006	107.0	85.6	85.6	64.2
BVP650 LED200-4S/727	17400.0	144.0	120.8	0.533	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED220-4S/727	19140.0	160.0	119.6	0.593	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED240-4S/727	20880.0	166.0	125.8	0.615	0.01	0.008	0.008	0.006	107.0	85.6	85.6	64.2
BVP650 LED260-4S/727	22360.0	180.0	124.2	0.667	0.01	0.008	0.008	0.006	107.0	85.6	85.6	64.2
BVP650 LED280-4S/727	24080.0	196.0	122.9	0.726	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED300-4S/727	25800.0	210.0	122.9	0.778	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED320-4S/727	27200.0	225.0	120.9	0.833	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED340-4S/727	28900.0	245.0	118.0	0.907	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED360-4S/727	30240.0	260.0	116.3	0.963	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED380-4S/727	31920.0	280.0	114.0	1.037	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2

BVP650 LED400-4S/727	33600.0	295.0	113.9	1.093	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED70-4S/727	6230.0	48.0	129.8	0.178	0.01	0.008	0.008	0.006	107.0	85.6	85.6	64.2
BVP650 LED80-4S/727	7120.0	55.0	129.5	0.204	0.01	0.008	0.008	0.006	107.0	85.6	85.6	64.2
BVP650 LED100-4S/730	8900.0	61.0	145.9	0.226	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED120-4S/730	10680.0	74.0	144.3	0.274	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED140-4S/730	12460.0	87.0	143.2	0.322	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED160-4S/730	14080.0	100.0	140.8	0.37	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED180-4S/730	15840.0	114.0	138.9	0.422	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED200-4S/730	17600.0	128.0	137.5	0.474	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED220-4S/730	19360.0	142.0	136.3	0.526	0.01	0.008	0.008	0.006	107.0	85.6	85.6	64.2
BVP650 LED240-4S/730	21120.0	148.0	142.7	0.548	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED260-4S/730	22880.0	162.0	141.2	0.6	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED280-4S/730	24360.0	176.0	138.4	0.652	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED300-4S/730	26100.0	188.0	138.8	0.696	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED320-4S/730	27840.0	200.0	139.2	0.741	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED340-4S/730	29240.0	215.0	136.0	0.796	0.01	0.008	0.008	0.006	107.0	85.6	85.6	64.2
BVP650 LED360-4S/730	30960.0	230.0	134.6	0.852	0.01	0.008	0.008	0.006	107.0	85.6	85.6	64.2
BVP650 LED380-4S/730	32680.0	245.0	133.4	0.907	0.01	0.008	0.008	0.006	107.0	85.6	85.6	64.2
BVP650 LED400-4S/730	34000.0	260.0	130.8	0.963	0.01	0.008	0.008	0.006	107.0	85.6	85.6	64.2
BVP650 LED420-4S/730	35700.0	275.0	129.8	1.019	0.01	0.008	0.008	0.006	107.0	85.6	85.6	64.2
BVP650 LED440-4S/730	37400.0	290.0	129.0	1.074	0.01	0.008	0.008	0.006	107.0	85.6	85.6	64.2
BVP650 LED70-4S/730	6230.0	43.0	144.9	0.159	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED80-4S/730	7120.0	49.5	143.8	0.183	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED100-4S/740	8900.0	57.0	156.1	0.211	0.008	0.006	0.006	0.004	85.6	64.2	64.2	42.8
BVP650 LED120-4S/740	10680.0	70.0	152.6	0.259	0.008	0.006	0.006	0.004	85.6	64.2	64.2	42.8

BVP650 LED140-4S/740	12460.0	82.0	152.0	0.304	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED160-4S/740	14240.0	94.0	151.5	0.348	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED180-4S/740	15840.0	106.0	149.4	0.393	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED200-4S/740	17600.0	120.0	146.7	0.444	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED220-4S/740	19360.0	132.0	146.7	0.489	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED240-4S/740	21120.0	140.0	150.9	0.519	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED260-4S/740	22880.0	152.0	150.5	0.563	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED280-4S/740	24360.0	164.0	148.5	0.607	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED300-4S/740	26100.0	176.0	148.3	0.652	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED320-4S/740	27840.0	190.0	146.5	0.704	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED340-4S/740	29580.0	200.0	147.9	0.741	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED360-4S/740	30960.0	215.0	144.0	0.796	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED380-4S/740	32680.0	230.0	142.1	0.852	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED400-4S/740	34400.0	245.0	140.4	0.907	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED420-4S/740	36120.0	255.0	141.6	0.944	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED440-4S/740	37400.0	270.0	138.5	1.0	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED460-4S/740	39100.0	285.0	137.2	1.056	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED480-4S/740	40800.0	300.0	136.0	1.111	0.01	0.008	0.008	0.006	107.0	85.6	85.6	64.2
BVP650 LED70-4S/740	6230.0	40.5	153.8	0.15	0.008	0.006	0.006	0.004	85.6	64.2	64.2	42.8
BVP650 LED80-4S/740	7120.0	46.5	153.1	0.172	0.008	0.006	0.006	0.004	85.6	64.2	64.2	42.8
BVP650 LED100-4S/757	8900.0	57.0	156.1	0.211	0.008	0.006	0.006	0.004	85.6	64.2	64.2	42.8
BVP650 LED120-4S/757	10680.0	70.0	152.6	0.259	0.008	0.006	0.006	0.004	85.6	64.2	64.2	42.8
BVP650 LED140-4S/757	12460.0	82.0	152.0	0.304	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED160-4S/757	14240.0	94.0	151.5	0.348	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED180-4S/757	15840.0	106.0	149.4	0.393	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5

BVP650 LED200-4S/757	17600.0	120.0	146.7	0.444	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED220-4S/757	19360.0	132.0	146.7	0.489	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED240-4S/757	21120.0	140.0	150.9	0.519	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED260-4S/757	22880.0	152.0	150.5	0.563	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED280-4S/757	24360.0	164.0	148.5	0.607	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED300-4S/757	26100.0	176.0	148.3	0.652	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED320-4S/757	27840.0	190.0	146.5	0.704	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED340-4S/757	29580.0	200.0	147.9	0.741	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED360-4S/757	30960.0	215.0	144.0	0.796	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED380-4S/757	32680.0	230.0	142.1	0.852	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED400-4S/757	34400.0	245.0	140.4	0.907	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED420-4S/757	36120.0	255.0	141.6	0.944	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED440-4S/757	37400.0	270.0	138.5	1.0	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED460-4S/757	39100.0	285.0	137.2	1.056	0.009	0.007	0.007	0.005	96.3	74.9	74.9	53.5
BVP650 LED480-4S/757	40800.0	300.0	136.0	1.111	0.01	0.008	0.008	0.006	107.0	85.6	85.6	64.2
BVP650 LED70-4S/757	6230.0	40.5	153.8	0.15	0.008	0.006	0.006	0.004	85.6	64.2	64.2	42.8
BVP650 LED80-4S/757	7120.0	46.5	153.1	0.172	0.008	0.006	0.006	0.004	85.6	64.2	64.2	42.8
BVP650 LED110-4S/827	9790.0	89.0	110.0	0.33	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED130-4S/827	11440.0	106.0	107.9	0.393	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED140-4S/827	12320.0	114.0	108.1	0.422	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED160-4S/827	14080.0	132.0	106.7	0.489	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED180-4S/827	15840.0	150.0	105.6	0.556	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED200-4S/827	17400.0	160.0	108.8	0.593	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED220-4S/827	19140.0	178.0	107.5	0.659	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED240-4S/827	20880.0	194.0	107.6	0.719	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9

BVP650 LED260-4S/827	22360.0	215.0	104.0	0.796	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED280-4S/827	24080.0	230.0	104.7	0.852	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED300-4S/827	25800.0	250.0	103.2	0.926	0.013	0.01	0.01	0.007	139.1	107.0	107.0	74.9
BVP650 LED320-4S/827	27200.0	270.0	100.7	1.0	0.013	0.01	0.01	0.007	139.1	107.0	107.0	74.9
BVP650 LED340-4S/827	28900.0	290.0	99.7	1.074	0.013	0.01	0.01	0.007	139.1	107.0	107.0	74.9
BVP650 LED70-4S/827	6230.0	57.0	109.3	0.211	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED90-4S/827	8010.0	74.0	108.2	0.274	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED110-4S/830	9790.0	82.0	119.4	0.304	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED130-4S/830	11440.0	98.0	116.7	0.363	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED140-4S/830	12320.0	106.0	116.2	0.393	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED160-4S/830	14080.0	122.0	115.4	0.452	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED180-4S/830	15840.0	138.0	114.8	0.511	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED200-4S/830	17600.0	148.0	118.9	0.548	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED220-4S/830	19140.0	164.0	116.7	0.607	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED240-4S/830	20880.0	180.0	116.0	0.667	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED260-4S/830	22620.0	196.0	115.4	0.726	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED280-4S/830	24080.0	215.0	112.0	0.796	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED300-4S/830	25800.0	230.0	112.2	0.852	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED320-4S/830	27520.0	250.0	110.1	0.926	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED340-4S/830	28900.0	265.0	109.1	0.981	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED360-4S/830	30600.0	285.0	107.4	1.056	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED380-4S/830	32300.0	305.0	105.9	1.13	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED70-4S/830	6230.0	52.0	119.8	0.193	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED90-4S/830	8010.0	69.0	116.1	0.256	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED110-4S/840	9790.0	80.0	122.4	0.296	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2

BVP650 LED130-4S/840	11570.0	95.0	121.8	0.352	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED140-4S/840	12320.0	102.0	120.8	0.378	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED160-4S/840	14080.0	118.0	119.3	0.437	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED180-4S/840	15840.0	134.0	118.2	0.496	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED200-4S/840	17600.0	144.0	122.2	0.533	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED220-4S/840	19360.0	158.0	122.5	0.585	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED240-4S/840	20880.0	174.0	120.0	0.644	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED260-4S/840	22620.0	190.0	119.1	0.704	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED280-4S/840	24360.0	205.0	118.8	0.759	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED300-4S/840	25800.0	220.0	117.3	0.815	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED320-4S/840	27520.0	240.0	114.7	0.889	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED340-4S/840	28900.0	255.0	113.3	0.944	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED360-4S/840	30600.0	275.0	111.3	1.019	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED380-4S/840	32300.0	290.0	111.4	1.074	0.012	0.009	0.009	0.007	128.4	96.3	96.3	74.9
BVP650 LED70-4S/840	6230.0	51.0	122.2	0.189	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2
BVP650 LED90-4S/840	8010.0	66.0	121.4	0.244	0.011	0.008	0.008	0.006	117.7	85.6	85.6	64.2

* 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:

New B6 GWP tot for Finland = (4,06E+02 / 3,96E-01) x 2,70E-01 = 2,76 E+02

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

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

Source Ecoinvent 3.8