

ENVIRONMENTAL PRODUCT DECLARATION

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

Clearflood gen2 Small
BVP655
Signify N.V.



EPD HUB
Publishing date 2024-10-15

The logo features a green circular icon with a white stylized 'S' inside, followed by the word "signify" in a green, lowercase, sans-serif font.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Signify
Address	5600 VB 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	Clearflood gen2 Small
Additional labels	BVP655
Product reference	910771137548
Place of production	SPAIN
Period for data	2024
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	Not applicable

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 Unit
Declared unit mass	12 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	2.44E+02
GWP-total, A1-A3 (kgCO ₂ e)	2.41E+02
Secondary material, inputs (%)	6.73
Secondary material, outputs (%)	62.6
Total energy use, A1-A3 (kWh)	746
Net fresh water use, A1-A3 (m ³ e)	1.01

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

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

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

PRODUCT DESCRIPTION

This new generation of Clearflood range brings the total cost of ownership of your project to the next level. The range comes in 3 sizes (BVP655, BVP656, BVP657) with several finishing and serviceability options, and leverages on the light engine of our Recreational Sports & Area flagship floodlight. This light engine is optimized for sports applications, as well as large areas, such as logistical hubs, outdoor car parks and storage area. Now an innovative design approach allows the availability of connected options such as the SR socket, fully integrated on the floodlight housing, and a multi-sensor on the bracket. The product range is compatible with Interact systems.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	75.25	EU
Minerals	17.26	EU
Fossil materials	7.49	EU
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	0.92

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 Unit
Mass per declared unit	12 kg
Functional unit	24574 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. Thus, it is possible to allocate it according to the weight of the product analysed in this study. Some of the

waste 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.

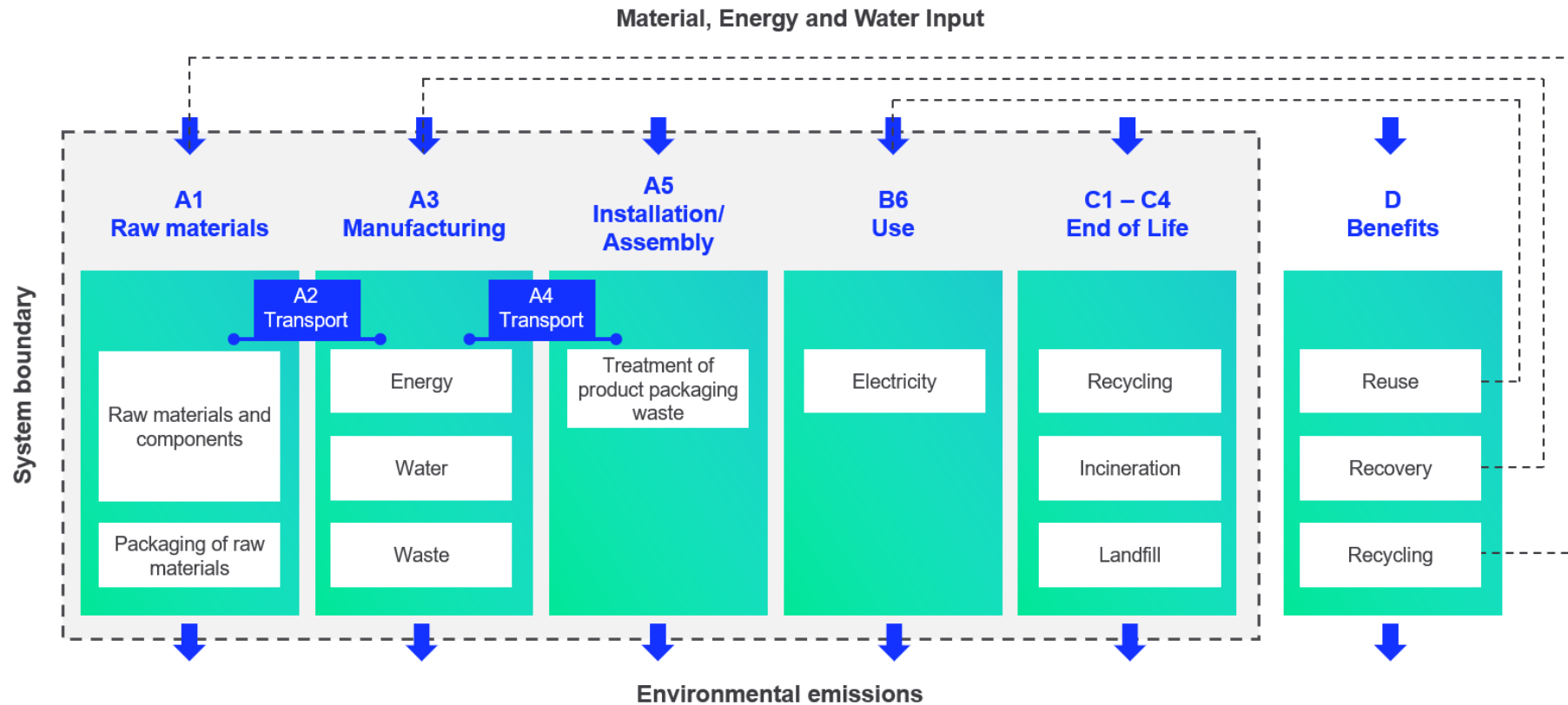
PRODUCT USE AND MAINTENANCE (B1-B7)

During the use phase, the product consumes electricity from EU'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
Packaging materials	No allocation
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

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

AVERAGES AND VARIABILITY

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

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

LCA SOFTWARE AND BIBLIOGRAPHY

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

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	2.38E+02	2.72E+00	-2.24E-02	2.41E+02	2.72E+00	3.41E+00	MNR	MNR	MNR	MNR	MNR	6.70E+03	MNR	MNR	1.71E-01	6.94E-01	8.05E-01	-1.16E+02
GWP – fossil	kg CO ₂ e	2.38E+02	2.72E+00	3.28E+00	2.44E+02	2.72E+00	8.69E-02	MNR	MNR	MNR	MNR	MNR	6.68E+03	MNR	MNR	1.71E-01	6.94E-01	4.17E-01	-1.16E+02
GWP – biogenic	kg CO ₂ e	-3.88E-01	0.00E+00	-3.32E+00	-3.71E+00	1.05E-03	3.32E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	0.00E+00	3.88E-01	-1.25E-02
GWP – LULUC	kg CO ₂ e	1.56E-01	1.00E-03	1.59E-02	1.73E-01	1.00E-03	2.98E-05	MNR	MNR	MNR	MNR	MNR	1.56E+01	MNR	MNR	6.31E-05	2.41E-04	1.66E-04	-8.76E-03
Ozone depletion pot.	kg CFC ₁₁ e	8.93E-06	6.25E-07	4.11E-07	9.96E-06	6.25E-07	8.72E-09	MNR	MNR	MNR	MNR	MNR	3.39E-04	MNR	MNR	3.94E-08	1.94E-08	1.71E-08	-3.14E-06
Acidification potential	mol H ⁺ e	2.14E+00	1.15E-02	1.49E-02	2.17E+00	1.15E-02	6.81E-04	MNR	MNR	MNR	MNR	MNR	3.82E+01	MNR	MNR	7.25E-04	2.03E-03	7.81E-04	-1.16E+00
EP-freshwater ²⁾	kg Pe	1.52E-02	2.22E-05	1.55E-04	1.54E-02	2.22E-05	9.11E-07	MNR	MNR	MNR	MNR	MNR	7.08E-01	MNR	MNR	1.40E-06	7.61E-06	7.92E-06	-7.26E-03
EP-marine	kg Ne	2.66E-01	3.42E-03	6.51E-03	2.76E-01	3.42E-03	2.88E-04	MNR	MNR	MNR	MNR	MNR	5.06E+00	MNR	MNR	2.15E-04	4.63E-04	1.57E-03	-1.29E-01
EP-terrestrial	mol Ne	3.01E+00	3.77E-02	4.18E-02	3.09E+00	3.77E-02	2.99E-03	MNR	MNR	MNR	MNR	MNR	5.76E+01	MNR	MNR	2.38E-03	5.26E-03	2.41E-03	-1.48E+00
POCP (“smog”) ³⁾	kg NMVOCe	8.71E-01	1.21E-02	1.29E-02	8.96E-01	1.21E-02	7.48E-04	MNR	MNR	MNR	MNR	MNR	1.58E+01	MNR	MNR	7.60E-04	1.43E-03	9.34E-04	-4.29E-01
ADP-minerals & metals ⁴⁾	kg Sbe	4.13E-03	6.37E-06	2.87E-05	4.16E-03	6.37E-06	2.87E-07	MNR	MNR	MNR	MNR	MNR	6.24E-02	MNR	MNR	4.01E-07	1.85E-05	3.25E-07	-4.45E-04
ADP-fossil resources	MJ	2.46E+03	4.08E+01	4.91E+01	2.55E+03	4.08E+01	6.77E-01	MNR	MNR	MNR	MNR	MNR	1.42E+05	MNR	MNR	2.57E+00	2.18E+00	1.69E+00	-1.14E+03
Water use ⁵⁾	m ³ e depr.	4.20E+01	1.83E-01	1.56E+00	4.38E+01	1.83E-01	1.60E-01	MNR	MNR	MNR	MNR	MNR	3.89E+03	MNR	MNR	1.15E-02	5.59E-02	8.66E-02	-7.50E+00

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

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

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	1.46E-05	3.13E-07	2.46E-07	1.52E-05	3.13E-07	6.33E-09	MNR	MNR	MNR	MNR	MNR	1.25E-04	MNR	MNR	1.97E-08	2.68E-08	1.40E-08	-6.25E-06
Ionizing radiation ⁶⁾	kBq U235e	1.51E+01	1.94E-01	1.53E-01	1.54E+01	1.94E-01	2.45E-03	MNR	MNR	MNR	MNR	MNR	3.85E+03	MNR	MNR	1.22E-02	1.32E-02	9.09E-03	-6.80E+00
Ecotoxicity (freshwater)	CTUe	6.93E+03	3.67E+01	1.24E+02	7.09E+03	3.67E+01	4.67E+00	MNR	MNR	MNR	MNR	MNR	9.67E+04	MNR	MNR	2.31E+00	1.05E+01	8.02E+02	-2.08E+03
Human toxicity, cancer	CTUh	2.78E-07	9.02E-10	2.17E-09	2.81E-07	9.02E-10	2.11E-10	MNR	MNR	MNR	MNR	MNR	3.17E-06	MNR	MNR	5.68E-11	3.26E-10	2.82E-10	4.93E-09
Human tox. non-cancer	CTUh	6.00E-06	3.63E-08	4.63E-08	6.08E-06	3.63E-08	8.78E-09	MNR	MNR	MNR	MNR	MNR	1.04E-04	MNR	MNR	2.29E-09	1.37E-08	1.35E-08	-2.09E-06
SQP ⁷⁾	-	6.26E+02	4.70E+01	1.29E+02	8.02E+02	4.70E+01	3.69E-01	MNR	MNR	MNR	MNR	MNR	2.57E+04	MNR	MNR	2.96E+00	4.01E+00	2.56E+00	-2.08E+02

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

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy ⁸⁾	MJ	1.11E+02	4.60E-01	3.34E+01	1.45E+02	4.60E-01	2.23E-02	MNR	MNR	MNR	MNR	MNR	2.90E+04	MNR	MNR	2.90E-02	3.15E-01	7.44E-02	-1.47E+01
Renew. PER as material	MJ	4.60E+00	0.00E+00	2.91E+01	3.37E+01	0.00E+00	-2.91E+01	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	-3.47E-01	-4.25E+00	0.00E+00
Total use of renew. PER	MJ	1.16E+02	4.60E-01	6.25E+01	1.78E+02	4.60E-01	-2.91E+01	MNR	MNR	MNR	MNR	MNR	2.90E+04	MNR	MNR	2.90E-02	-3.27E-02	-4.18E+00	-1.47E+01
Non-re. PER as energy	MJ	2.46E+03	4.08E+01	4.39E+01	2.54E+03	4.08E+01	6.77E-01	MNR	MNR	MNR	MNR	MNR	1.42E+05	MNR	MNR	2.57E+00	2.18E+00	1.69E+00	-1.14E+03
Non-re. PER as material	MJ	2.57E+01	0.00E+00	2.45E-01	2.59E+01	0.00E+00	-2.45E-01	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	-1.19E+01	-1.38E+01	3.94E-01
Total use of non-re. PER	MJ	2.48E+03	4.08E+01	4.41E+01	2.57E+03	4.08E+01	4.32E-01	MNR	MNR	MNR	MNR	MNR	1.42E+05	MNR	MNR	2.57E+00	-9.69E+00	-1.21E+01	-1.14E+03
Secondary materials	kg	8.08E-01	1.13E-02	2.25E+00	3.06E+00	1.13E-02	8.06E-04	MNR	MNR	MNR	MNR	MNR	1.46E+01	MNR	MNR	7.14E-04	2.22E-03	4.36E-03	4.75E+00
Renew. secondary fuels	MJ	4.46E-02	1.14E-04	1.59E-01	2.04E-01	1.14E-04	1.34E-05	MNR	MNR	MNR	MNR	MNR	1.19E-01	MNR	MNR	7.20E-06	1.12E-04	3.14E-05	-2.05E-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	9.54E-01	5.29E-03	4.64E-02	1.01E+00	5.29E-03	2.81E-03	MNR	MNR	MNR	MNR	MNR	1.22E+02	MNR	MNR	3.33E-04	1.80E-03	1.08E-03	-3.47E-01

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	3.84E+01	5.41E-02	1.74E-01	3.87E+01	5.41E-02	1.45E-03	MNR	MNR	MNR	MNR	MNR	5.11E+02	MNR	MNR	3.41E-03	1.57E-02	6.73E-03	-1.83E+01
Non-hazardous waste	kg	5.94E+02	8.89E-01	3.17E+00	5.98E+02	8.89E-01	2.25E+00	MNR	MNR	MNR	MNR	MNR	3.23E+04	MNR	MNR	5.60E-02	7.51E-01	4.66E+00	-3.28E+02
Radioactive waste	kg	5.81E-03	2.73E-04	1.08E-04	6.19E-03	2.73E-04	1.10E-06	MNR	MNR	MNR	MNR	MNR	1.04E+00	MNR	MNR	1.72E-05	9.13E-06	0.00E+00	-2.50E-03

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	7.31E+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	2.04E-01	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	6.76E-01	6.76E-01	0.00E+00	0.00E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	4.86E+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	2.34E+02	2.69E+00	3.39E+00	2.40E+02	2.69E+00	8.30E-02	MNR	MNR	MNR	MNR	MNR	6.62E+03	MNR	MNR	1.69E-01	6.90E-01	1.02E+00	-1.14E+02
Ozone depletion Pot.	kg CFC ₁₁ e	7.75E-06	4.95E-07	3.46E-07	8.59E-06	4.95E-07	7.61E-09	MNR	MNR	MNR	MNR	MNR	2.94E-04	MNR	MNR	3.12E-08	1.58E-08	1.37E-08	-2.67E-06
Acidification	kg SO ₂ e	1.83E+00	8.94E-03	1.10E-02	1.85E+00	8.94E-03	4.97E-04	MNR	MNR	MNR	MNR	MNR	3.24E+01	MNR	MNR	5.63E-04	1.63E-03	6.11E-04	-9.99E-01
Eutrophication	kg PO ₄ ³ e	5.63E-01	2.04E-03	7.23E-03	5.72E-01	2.04E-03	3.70E-04	MNR	MNR	MNR	MNR	MNR	2.49E+01	MNR	MNR	1.28E-04	5.54E-04	4.15E-03	-2.82E-01
POCP ("smog")	kg C ₂ H ₄ e	9.79E-02	3.49E-04	7.40E-04	9.90E-02	3.49E-04	1.55E-05	MNR	MNR	MNR	MNR	MNR	1.32E+00	MNR	MNR	2.20E-05	6.09E-05	1.77E-04	-4.96E-02
ADP-elements	kg Sbe	4.51E-03	6.17E-06	2.65E-05	4.54E-03	6.17E-06	2.25E-07	MNR	MNR	MNR	MNR	MNR	6.23E-02	MNR	MNR	3.89E-07	1.85E-05	3.05E-07	-4.34E-04
ADP-fossil	MJ	2.48E+03	4.08E+01	4.88E+01	2.57E+03	4.08E+01	6.77E-01	MNR	MNR	MNR	MNR	MNR	1.42E+05	MNR	MNR	2.57E+00	2.18E+00	1.69E+00	-1.14E+03

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
BVP655 LED300-4S/740 DW30 ALU	25431.0	169.1	150.4	1.0	1.0	0.75	0.75	0.55	6700.0	5025.0	5025.0	3685.0
BVP655 LED300-4S/740 DW10 ALU	25488.0	169.1	150.7	1.0	1.0	0.75	0.75	0.55	6700.0	5025.0	5025.0	3685.0
BVP655 LED300-4S/740 A65-WB ALU	24574.0	169.1	145.3	1.0	1.0	0.75	0.75	0.55	6700.0	5025.0	5025.0	3685.0
BVP655 LED300-4S/740 A65-VWB ALU	25061.0	169.1	148.2	1.0	1.0	0.75	0.75	0.55	6700.0	5025.0	5025.0	3685.0
BVP655 LED300-4S/740 A65-NWB ALU	24992.0	169.1	147.8	1.0	1.0	0.75	0.75	0.55	6700.0	5025.0	5025.0	3685.0
BVP655 LED300-4S/740 A65-NB ALU	25410.0	169.1	150.3	1.0	1.0	0.75	0.75	0.55	6700.0	5025.0	5025.0	3685.0
BVP655 LED300-4S/740 A55-WB ALU	25634.0	169.1	151.6	1.0	1.0	0.75	0.75	0.55	6700.0	5025.0	5025.0	3685.0
BVP655 LED300-4S/740 A55-NWB ALU	25509.0	169.1	150.9	1.0	1.0	0.75	0.75	0.55	6700.0	5025.0	5025.0	3685.0
BVP655 LED300-4S/740 A55-NMB ALU	25531.0	169.1	151.0	1.0	1.0	0.75	0.75	0.55	6700.0	5025.0	5025.0	3685.0
BVP655 LED300-4S/740 A55-NB ALU	25383.0	169.1	150.1	1.0	1.0	0.75	0.75	0.55	6700.0	5025.0	5025.0	3685.0
BVP655 LED300-4S/740 A55-MB ALU	25675.0	169.1	151.8	1.0	1.0	0.75	0.75	0.55	6700.0	5025.0	5025.0	3685.0
BVP655 LED300-4S/740 A35-WB ALU	26288.0	169.1	155.5	1.0	1.0	0.75	0.75	0.55	6700.0	5025.0	5025.0	3685.0
BVP655 LED300-4S/740 A35-VWB ALU	25915.0	169.1	153.3	1.0	1.0	0.75	0.75	0.55	6700.0	5025.0	5025.0	3685.0
BVP655 LED300-4S/740 A35-NWB ALU	26292.0	169.1	155.5	1.0	1.0	0.75	0.75	0.55	6700.0	5025.0	5025.0	3685.0
BVP655 LED300-4S/740 A35-NMB ALU	26291.0	169.1	155.5	1.0	1.0	0.75	0.75	0.55	6700.0	5025.0	5025.0	3685.0
BVP655 LED300-4S/740 A35-NB ALU	26295.0	169.1	155.5	1.0	1.0	0.75	0.75	0.55	6700.0	5025.0	5025.0	3685.0
BVP655 LED300-4S/740 A35-MB ALU	26286.0	169.1	155.4	1.0	1.0	0.75	0.75	0.55	6700.0	5025.0	5025.0	3685.0

BVP655 LED280-4S/840 DW30 ALU	23709.0	175.5	135.1	1.038	1.038	0.778	0.778	0.571	6954.6	5212.6	5212.6	3825.7
BVP655 LED280-4S/840 DW10 ALU	23762.0	175.5	135.4	1.038	1.038	0.778	0.778	0.571	6954.6	5212.6	5212.6	3825.7
BVP655 LED280-4S/840 A65-WB ALU	22909.0	175.5	130.5	1.038	1.038	0.778	0.778	0.571	6954.6	5212.6	5212.6	3825.7
BVP655 LED280-4S/840 A65-VWB ALU	23363.0	175.5	133.1	1.038	1.038	0.778	0.778	0.571	6954.6	5212.6	5212.6	3825.7
BVP655 LED280-4S/840 A65-NWB ALU	23299.0	175.5	132.8	1.038	1.038	0.778	0.778	0.571	6954.6	5212.6	5212.6	3825.7
BVP655 LED280-4S/840 A65-NB ALU	23689.0	175.5	135.0	1.038	1.038	0.778	0.778	0.571	6954.6	5212.6	5212.6	3825.7
BVP655 LED280-4S/840 A55-WB ALU	23898.0	175.5	136.2	1.038	1.038	0.778	0.778	0.571	6954.6	5212.6	5212.6	3825.7
BVP655 LED280-4S/840 A55-NWB ALU	23781.0	175.5	135.5	1.038	1.038	0.778	0.778	0.571	6954.6	5212.6	5212.6	3825.7
BVP655 LED280-4S/840 A55-NMB ALU	23802.0	175.5	135.6	1.038	1.038	0.778	0.778	0.571	6954.6	5212.6	5212.6	3825.7
BVP655 LED280-4S/840 A55-NB ALU	23664.0	175.5	134.8	1.038	1.038	0.778	0.778	0.571	6954.6	5212.6	5212.6	3825.7
BVP655 LED280-4S/840 A55-MB ALU	23936.0	175.5	136.4	1.038	1.038	0.778	0.778	0.571	6954.6	5212.6	5212.6	3825.7
BVP655 LED280-4S/840 A35-WB ALU	24507.0	175.5	139.6	1.038	1.038	0.778	0.778	0.571	6954.6	5212.6	5212.6	3825.7
BVP655 LED280-4S/840 A35-VWB ALU	24160.0	175.5	137.7	1.038	1.038	0.778	0.778	0.571	6954.6	5212.6	5212.6	3825.7
BVP655 LED280-4S/840 A35-NWB ALU	24511.0	175.5	139.7	1.038	1.038	0.778	0.778	0.571	6954.6	5212.6	5212.6	3825.7
BVP655 LED280-4S/840 A35-NMB ALU	24510.0	175.5	139.7	1.038	1.038	0.778	0.778	0.571	6954.6	5212.6	5212.6	3825.7
BVP655 LED280-4S/840 A35-NB ALU	24514.0	175.5	139.7	1.038	1.038	0.778	0.778	0.571	6954.6	5212.6	5212.6	3825.7
BVP655 LED280-4S/840 A35-MB ALU	24505.0	175.5	139.6	1.038	1.038	0.778	0.778	0.571	6954.6	5212.6	5212.6	3825.7
BVP655 LED250-4S/727 DW30 ALU	21675.0	171.0	126.8	1.011	1.011	0.758	0.758	0.556	6773.7	5078.6	5078.6	3725.2
BVP655 LED250-4S/727 DW10 ALU	21724.0	171.0	127.0	1.011	1.011	0.758	0.758	0.556	6773.7	5078.6	5078.6	3725.2
BVP655 LED250-4S/727 A65-WB ALU	20944.0	171.0	122.5	1.011	1.011	0.758	0.758	0.556	6773.7	5078.6	5078.6	3725.2
BVP655 LED250-4S/727 A65-VWB ALU	21359.0	171.0	124.9	1.011	1.011	0.758	0.758	0.556	6773.7	5078.6	5078.6	3725.2
BVP655 LED250-4S/727 A65-NWB ALU	21301.0	171.0	124.6	1.011	1.011	0.758	0.758	0.556	6773.7	5078.6	5078.6	3725.2
BVP655 LED250-4S/727 A65-NB ALU	21656.0	171.0	126.6	1.011	1.011	0.758	0.758	0.556	6773.7	5078.6	5078.6	3725.2
BVP655 LED250-4S/727 A55-WB ALU	21848.0	171.0	127.8	1.011	1.011	0.758	0.758	0.556	6773.7	5078.6	5078.6	3725.2

BVP655 LED250-4S/727 A55-NWB ALU	21741.0	171.0	127.1	1.011	1.011	0.758	0.758	0.556	6773.7	5078.6	5078.6	3725.2
BVP655 LED250-4S/727 A55-NMB ALU	21760.0	171.0	127.3	1.011	1.011	0.758	0.758	0.556	6773.7	5078.6	5078.6	3725.2
BVP655 LED250-4S/727 A55-NB ALU	21634.0	171.0	126.5	1.011	1.011	0.758	0.758	0.556	6773.7	5078.6	5078.6	3725.2
BVP655 LED250-4S/727 A55-MB ALU	21883.0	171.0	128.0	1.011	1.011	0.758	0.758	0.556	6773.7	5078.6	5078.6	3725.2
BVP655 LED250-4S/727 A35-WB ALU	22405.0	171.0	131.0	1.011	1.011	0.758	0.758	0.556	6773.7	5078.6	5078.6	3725.2
BVP655 LED250-4S/727 A35-VWB ALU	22087.0	171.0	129.2	1.011	1.011	0.758	0.758	0.556	6773.7	5078.6	5078.6	3725.2
BVP655 LED250-4S/727 A35-NWB ALU	22408.0	171.0	131.0	1.011	1.011	0.758	0.758	0.556	6773.7	5078.6	5078.6	3725.2
BVP655 LED250-4S/727 A35-NMB ALU	22408.0	171.0	131.0	1.011	1.011	0.758	0.758	0.556	6773.7	5078.6	5078.6	3725.2
BVP655 LED250-4S/727 A35-NB ALU	22411.0	171.0	131.1	1.011	1.011	0.758	0.758	0.556	6773.7	5078.6	5078.6	3725.2
BVP655 LED250-4S/727 A35-MB ALU	22403.0	171.0	131.0	1.011	1.011	0.758	0.758	0.556	6773.7	5078.6	5078.6	3725.2
BVP655 LED100-4S/840 DW30 ALU	8856.0	54.4	162.8	0.322	0.322	0.241	0.241	0.177	2157.4	1614.7	1614.7	1185.9
BVP655 LED100-4S/840 DW10 ALU	8876.0	54.4	163.2	0.322	0.322	0.241	0.241	0.177	2157.4	1614.7	1614.7	1185.9
BVP655 LED100-4S/840 A65-WB ALU	8557.0	54.4	157.3	0.322	0.322	0.241	0.241	0.177	2157.4	1614.7	1614.7	1185.9
BVP655 LED100-4S/840 A65-VWB ALU	8727.0	54.4	160.4	0.322	0.322	0.241	0.241	0.177	2157.4	1614.7	1614.7	1185.9
BVP655 LED100-4S/840 A65-NWB ALU	8703.0	54.4	160.0	0.322	0.322	0.241	0.241	0.177	2157.4	1614.7	1614.7	1185.9
BVP655 LED100-4S/840 A65-NB ALU	8848.0	54.4	162.6	0.322	0.322	0.241	0.241	0.177	2157.4	1614.7	1614.7	1185.9
BVP655 LED100-4S/840 A55-WB ALU	8926.0	54.4	164.1	0.322	0.322	0.241	0.241	0.177	2157.4	1614.7	1614.7	1185.9
BVP655 LED100-4S/840 A55-NWB ALU	8883.0	54.4	163.3	0.322	0.322	0.241	0.241	0.177	2157.4	1614.7	1614.7	1185.9
BVP655 LED100-4S/840 A55-NMB ALU	8891.0	54.4	163.4	0.322	0.322	0.241	0.241	0.177	2157.4	1614.7	1614.7	1185.9
BVP655 LED100-4S/840 A55-NB ALU	8839.0	54.4	162.5	0.322	0.322	0.241	0.241	0.177	2157.4	1614.7	1614.7	1185.9
BVP655 LED100-4S/840 A55-MB ALU	8941.0	54.4	164.4	0.322	0.322	0.241	0.241	0.177	2157.4	1614.7	1614.7	1185.9
BVP655 LED100-4S/840 A35-WB ALU	9154.0	54.4	168.3	0.322	0.322	0.241	0.241	0.177	2157.4	1614.7	1614.7	1185.9
BVP655 LED100-4S/840 A35-VWB ALU	9024.0	54.4	165.9	0.322	0.322	0.241	0.241	0.177	2157.4	1614.7	1614.7	1185.9
BVP655 LED100-4S/840 A35-NWB ALU	9156.0	54.4	168.3	0.322	0.322	0.241	0.241	0.177	2157.4	1614.7	1614.7	1185.9

BVP655 LED100-4S/840 A35-NMB ALU	9155.0	54.4	168.3	0.322	0.322	0.241	0.241	0.177	2157.4	1614.7	1614.7	1185.9
BVP655 LED100-4S/840 A35-NB ALU	9157.0	54.4	168.3	0.322	0.322	0.241	0.241	0.177	2157.4	1614.7	1614.7	1185.9
BVP655 LED100-4S/840 A35-MB ALU	9153.0	54.4	168.3	0.322	0.322	0.241	0.241	0.177	2157.4	1614.7	1614.7	1185.9
BVP655 LED100-4S/740 DW30 ALU	8817.0	53.9	163.6	0.319	0.319	0.239	0.239	0.175	2137.3	1601.3	1601.3	1172.5
BVP655 LED100-4S/740 DW10 ALU	8837.0	53.9	164.0	0.319	0.319	0.239	0.239	0.175	2137.3	1601.3	1601.3	1172.5
BVP655 LED100-4S/740 A65-WB ALU	8519.0	53.9	158.1	0.319	0.319	0.239	0.239	0.175	2137.3	1601.3	1601.3	1172.5
BVP655 LED100-4S/740 A65-VWB ALU	8688.0	53.9	161.2	0.319	0.319	0.239	0.239	0.175	2137.3	1601.3	1601.3	1172.5
BVP655 LED100-4S/740 A65-NWB ALU	8664.0	53.9	160.7	0.319	0.319	0.239	0.239	0.175	2137.3	1601.3	1601.3	1172.5
BVP655 LED100-4S/740 A65-NB ALU	8809.0	53.9	163.4	0.319	0.319	0.239	0.239	0.175	2137.3	1601.3	1601.3	1172.5
BVP655 LED100-4S/740 A55-WB ALU	8887.0	53.9	164.9	0.319	0.319	0.239	0.239	0.175	2137.3	1601.3	1601.3	1172.5
BVP655 LED100-4S/740 A55-NWB ALU	8844.0	53.9	164.1	0.319	0.319	0.239	0.239	0.175	2137.3	1601.3	1601.3	1172.5
BVP655 LED100-4S/740 A55-NMB ALU	8851.0	53.9	164.2	0.319	0.319	0.239	0.239	0.175	2137.3	1601.3	1601.3	1172.5
BVP655 LED100-4S/740 A55-NB ALU	8800.0	53.9	163.3	0.319	0.319	0.239	0.239	0.175	2137.3	1601.3	1601.3	1172.5
BVP655 LED100-4S/740 A55-MB ALU	8901.0	53.9	165.1	0.319	0.319	0.239	0.239	0.175	2137.3	1601.3	1601.3	1172.5
BVP655 LED100-4S/740 A35-WB ALU	9114.0	53.9	169.1	0.319	0.319	0.239	0.239	0.175	2137.3	1601.3	1601.3	1172.5
BVP655 LED100-4S/740 A35-VWB ALU	8984.0	53.9	166.7	0.319	0.319	0.239	0.239	0.175	2137.3	1601.3	1601.3	1172.5
BVP655 LED100-4S/740 A35-NWB ALU	9115.0	53.9	169.1	0.319	0.319	0.239	0.239	0.175	2137.3	1601.3	1601.3	1172.5
BVP655 LED100-4S/740 A35-NMB ALU	9115.0	53.9	169.1	0.319	0.319	0.239	0.239	0.175	2137.3	1601.3	1601.3	1172.5
BVP655 LED100-4S/740 A35-NB ALU	9116.0	53.9	169.1	0.319	0.319	0.239	0.239	0.175	2137.3	1601.3	1601.3	1172.5
BVP655 LED100-4S/740 A35-MB ALU	9113.0	53.9	169.1	0.319	0.319	0.239	0.239	0.175	2137.3	1601.3	1601.3	1172.5
BVP655 LED100-4S/727 DW30 ALU	8873.0	59.7	148.6	0.353	0.353	0.265	0.265	0.194	2365.1	1775.5	1775.5	1299.8
BVP655 LED100-4S/727 DW10 ALU	8893.0	59.7	149.0	0.353	0.353	0.265	0.265	0.194	2365.1	1775.5	1775.5	1299.8
BVP655 LED100-4S/727 A65-WB ALU	8574.0	59.7	143.6	0.353	0.353	0.265	0.265	0.194	2365.1	1775.5	1775.5	1299.8
BVP655 LED100-4S/727 A65-VWB ALU	8744.0	59.7	146.5	0.353	0.353	0.265	0.265	0.194	2365.1	1775.5	1775.5	1299.8

BVP655 LED100-4S/727 A65-NWB ALU	8720.0	59.7	146.1	0.353	0.353	0.265	0.265	0.194	2365.1	1775.5	1775.5	1299.8
BVP655 LED100-4S/727 A65-NB ALU	8865.0	59.7	148.5	0.353	0.353	0.265	0.265	0.194	2365.1	1775.5	1775.5	1299.8
BVP655 LED100-4S/727 A55-WB ALU	8944.0	59.7	149.8	0.353	0.353	0.265	0.265	0.194	2365.1	1775.5	1775.5	1299.8
BVP655 LED100-4S/727 A55-NWB ALU	8900.0	59.7	149.1	0.353	0.353	0.265	0.265	0.194	2365.1	1775.5	1775.5	1299.8
BVP655 LED100-4S/727 A55-NMB ALU	8908.0	59.7	149.2	0.353	0.353	0.265	0.265	0.194	2365.1	1775.5	1775.5	1299.8
BVP655 LED100-4S/727 A55-NB ALU	8856.0	59.7	148.3	0.353	0.353	0.265	0.265	0.194	2365.1	1775.5	1775.5	1299.8
BVP655 LED100-4S/727 A55-MB ALU	8958.0	59.7	150.1	0.353	0.353	0.265	0.265	0.194	2365.1	1775.5	1775.5	1299.8
BVP655 LED100-4S/727 A35-WB ALU	9172.0	59.7	153.6	0.353	0.353	0.265	0.265	0.194	2365.1	1775.5	1775.5	1299.8
BVP655 LED100-4S/727 A35-VWB ALU	9042.0	59.7	151.5	0.353	0.353	0.265	0.265	0.194	2365.1	1775.5	1775.5	1299.8
BVP655 LED100-4S/727 A35-NWB ALU	9173.0	59.7	153.7	0.353	0.353	0.265	0.265	0.194	2365.1	1775.5	1775.5	1299.8
BVP655 LED100-4S/727 A35-NMB ALU	9173.0	59.7	153.7	0.353	0.353	0.265	0.265	0.194	2365.1	1775.5	1775.5	1299.8
BVP655 LED100-4S/727 A35-NB ALU	9174.0	59.7	153.7	0.353	0.353	0.265	0.265	0.194	2365.1	1775.5	1775.5	1299.8
BVP655 LED100-4S/727 A35-MB ALU	9171.0	59.7	153.6	0.353	0.353	0.265	0.265	0.194	2365.1	1775.5	1775.5	1299.8

* 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
BVP655 LED300-4S/740 DW30 ALU	25431.0	169.1	150.4	1.0	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED300-4S/740 DW10 ALU	25488.0	169.1	150.7	1.0	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED300-4S/740 A65-WB ALU	24574.0	169.1	145.3	1.0	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED300-4S/740 A65-VWB ALU	25061.0	169.1	148.2	1.0	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED300-4S/740 A65-NWB ALU	24992.0	169.1	147.8	1.0	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6

BVP655 LED300-4S/740 A65-NB ALU	25410.0	169.1	150.3	1.0	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED300-4S/740 A55-WB ALU	25634.0	169.1	151.6	1.0	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED300-4S/740 A55-NWB ALU	25509.0	169.1	150.9	1.0	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED300-4S/740 A55-NMB ALU	25531.0	169.1	151.0	1.0	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED300-4S/740 A55-NB ALU	25383.0	169.1	150.1	1.0	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED300-4S/740 A55-MB ALU	25675.0	169.1	151.8	1.0	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED300-4S/740 A35-WB ALU	26288.0	169.1	155.5	1.0	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED300-4S/740 A35-VWB ALU	25915.0	169.1	153.3	1.0	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED300-4S/740 A35-NWB ALU	26292.0	169.1	155.5	1.0	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED300-4S/740 A35-NMB ALU	26291.0	169.1	155.5	1.0	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED300-4S/740 A35-NB ALU	26295.0	169.1	155.5	1.0	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED300-4S/740 A35-MB ALU	26286.0	169.1	155.4	1.0	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED280-4S/840 DW30 ALU	23709.0	175.5	135.1	1.038	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED280-4S/840 DW10 ALU	23762.0	175.5	135.4	1.038	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED280-4S/840 A65-WB ALU	22909.0	175.5	130.5	1.038	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED280-4S/840 A65-VWB ALU	23363.0	175.5	133.1	1.038	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED280-4S/840 A65-NWB ALU	23299.0	175.5	132.8	1.038	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED280-4S/840 A65-NB ALU	23689.0	175.5	135.0	1.038	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED280-4S/840 A55-WB ALU	23898.0	175.5	136.2	1.038	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED280-4S/840 A55-NWB ALU	23781.0	175.5	135.5	1.038	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED280-4S/840 A55-NMB ALU	23802.0	175.5	135.6	1.038	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED280-4S/840 A55-NB ALU	23664.0	175.5	134.8	1.038	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED280-4S/840 A55-MB ALU	23936.0	175.5	136.4	1.038	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED280-4S/840 A35-WB ALU	24507.0	175.5	139.6	1.038	0.015	0.011	0.011	0.008	100.5	73.7	73.7	53.6

BVP655 LED280-4S/840 A35-VWB ALU	24160.0	175.5	137.7	1.038	0.015	0.011	0.011	0.008	100.5	73.7	73.7	53.6
BVP655 LED280-4S/840 A35-NWB ALU	24511.0	175.5	139.7	1.038	0.015	0.011	0.011	0.008	100.5	73.7	73.7	53.6
BVP655 LED280-4S/840 A35-NMB ALU	24510.0	175.5	139.7	1.038	0.015	0.011	0.011	0.008	100.5	73.7	73.7	53.6
BVP655 LED280-4S/840 A35-NB ALU	24514.0	175.5	139.7	1.038	0.015	0.011	0.011	0.008	100.5	73.7	73.7	53.6
BVP655 LED280-4S/840 A35-MB ALU	24505.0	175.5	139.6	1.038	0.015	0.011	0.011	0.008	100.5	73.7	73.7	53.6
BVP655 LED250-4S/727 DW30 ALU	21675.0	171.0	126.8	1.011	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED250-4S/727 DW10 ALU	21724.0	171.0	127.0	1.011	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED250-4S/727 A65-WB ALU	20944.0	171.0	122.5	1.011	0.017	0.013	0.013	0.009	113.9	87.1	87.1	60.3
BVP655 LED250-4S/727 A65-VWB ALU	21359.0	171.0	124.9	1.011	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED250-4S/727 A65-NWB ALU	21301.0	171.0	124.6	1.011	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED250-4S/727 A65-NB ALU	21656.0	171.0	126.6	1.011	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED250-4S/727 A55-WB ALU	21848.0	171.0	127.8	1.011	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED250-4S/727 A55-NWB ALU	21741.0	171.0	127.1	1.011	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED250-4S/727 A55-NMB ALU	21760.0	171.0	127.3	1.011	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED250-4S/727 A55-NB ALU	21634.0	171.0	126.5	1.011	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED250-4S/727 A55-MB ALU	21883.0	171.0	128.0	1.011	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED250-4S/727 A35-WB ALU	22405.0	171.0	131.0	1.011	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED250-4S/727 A35-VWB ALU	22087.0	171.0	129.2	1.011	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED250-4S/727 A35-NWB ALU	22408.0	171.0	131.0	1.011	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED250-4S/727 A35-NMB ALU	22408.0	171.0	131.0	1.011	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED250-4S/727 A35-NB ALU	22411.0	171.0	131.1	1.011	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED250-4S/727 A35-MB ALU	22403.0	171.0	131.0	1.011	0.016	0.012	0.012	0.009	107.2	80.4	80.4	60.3
BVP655 LED100-4S/840 DW30 ALU	8856.0	54.4	162.8	0.322	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/840 DW10 ALU	8876.0	54.4	163.2	0.322	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9

BVP655 LED100-4S/840 A65-WB ALU	8557.0	54.4	157.3	0.322	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/840 A65-VWB ALU	8727.0	54.4	160.4	0.322	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/840 A65-NWB ALU	8703.0	54.4	160.0	0.322	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/840 A65-NB ALU	8848.0	54.4	162.6	0.322	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/840 A55-WB ALU	8926.0	54.4	164.1	0.322	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/840 A55-NWB ALU	8883.0	54.4	163.3	0.322	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/840 A55-NMB ALU	8891.0	54.4	163.4	0.322	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/840 A55-NB ALU	8839.0	54.4	162.5	0.322	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/840 A55-MB ALU	8941.0	54.4	164.4	0.322	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/840 A35-WB ALU	9154.0	54.4	168.3	0.322	0.012	0.009	0.009	0.007	80.4	60.3	60.3	46.9
BVP655 LED100-4S/840 A35-VWB ALU	9024.0	54.4	165.9	0.322	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/840 A35-NWB ALU	9156.0	54.4	168.3	0.322	0.012	0.009	0.009	0.007	80.4	60.3	60.3	46.9
BVP655 LED100-4S/840 A35-NMB ALU	9155.0	54.4	168.3	0.322	0.012	0.009	0.009	0.007	80.4	60.3	60.3	46.9
BVP655 LED100-4S/840 A35-NB ALU	9157.0	54.4	168.3	0.322	0.012	0.009	0.009	0.007	80.4	60.3	60.3	46.9
BVP655 LED100-4S/840 A35-MB ALU	9153.0	54.4	168.3	0.322	0.012	0.009	0.009	0.007	80.4	60.3	60.3	46.9
BVP655 LED100-4S/740 DW30 ALU	8817.0	53.9	163.6	0.319	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/740 DW10 ALU	8837.0	53.9	164.0	0.319	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/740 A65-WB ALU	8519.0	53.9	158.1	0.319	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/740 A65-VWB ALU	8688.0	53.9	161.2	0.319	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/740 A65-NWB ALU	8664.0	53.9	160.7	0.319	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/740 A65-NB ALU	8809.0	53.9	163.4	0.319	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/740 A55-WB ALU	8887.0	53.9	164.9	0.319	0.012	0.009	0.009	0.007	80.4	60.3	60.3	46.9
BVP655 LED100-4S/740 A55-NWB ALU	8844.0	53.9	164.1	0.319	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/740 A55-NMB ALU	8851.0	53.9	164.2	0.319	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9

BVP655 LED100-4S/740 A55-NB ALU	8800.0	53.9	163.3	0.319	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/740 A55-MB ALU	8901.0	53.9	165.1	0.319	0.012	0.009	0.009	0.007	80.4	60.3	60.3	46.9
BVP655 LED100-4S/740 A35-WB ALU	9114.0	53.9	169.1	0.319	0.012	0.009	0.009	0.007	80.4	60.3	60.3	46.9
BVP655 LED100-4S/740 A35-VWB ALU	8984.0	53.9	166.7	0.319	0.012	0.009	0.009	0.007	80.4	60.3	60.3	46.9
BVP655 LED100-4S/740 A35-NWB ALU	9115.0	53.9	169.1	0.319	0.012	0.009	0.009	0.007	80.4	60.3	60.3	46.9
BVP655 LED100-4S/740 A35-NMB ALU	9115.0	53.9	169.1	0.319	0.012	0.009	0.009	0.007	80.4	60.3	60.3	46.9
BVP655 LED100-4S/740 A35-NB ALU	9116.0	53.9	169.1	0.319	0.012	0.009	0.009	0.007	80.4	60.3	60.3	46.9
BVP655 LED100-4S/740 A35-MB ALU	9113.0	53.9	169.1	0.319	0.012	0.009	0.009	0.007	80.4	60.3	60.3	46.9
BVP655 LED100-4S/727 DW30 ALU	8873.0	59.7	148.6	0.353	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED100-4S/727 DW10 ALU	8893.0	59.7	149.0	0.353	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED100-4S/727 A65-WB ALU	8574.0	59.7	143.6	0.353	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED100-4S/727 A65-VWB ALU	8744.0	59.7	146.5	0.353	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED100-4S/727 A65-NWB ALU	8720.0	59.7	146.1	0.353	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED100-4S/727 A65-NB ALU	8865.0	59.7	148.5	0.353	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED100-4S/727 A55-WB ALU	8944.0	59.7	149.8	0.353	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED100-4S/727 A55-NWB ALU	8900.0	59.7	149.1	0.353	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED100-4S/727 A55-NMB ALU	8908.0	59.7	149.2	0.353	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED100-4S/727 A55-NB ALU	8856.0	59.7	148.3	0.353	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED100-4S/727 A55-MB ALU	8958.0	59.7	150.1	0.353	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED100-4S/727 A35-WB ALU	9172.0	59.7	153.6	0.353	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/727 A35-VWB ALU	9042.0	59.7	151.5	0.353	0.014	0.011	0.011	0.008	93.8	73.7	73.7	53.6
BVP655 LED100-4S/727 A35-NWB ALU	9173.0	59.7	153.7	0.353	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/727 A35-NMB ALU	9173.0	59.7	153.7	0.353	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
BVP655 LED100-4S/727 A35-NB ALU	9174.0	59.7	153.7	0.353	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9

BVP655 LED100-4S/727 A35-MB ALU	9171.0	59.7	153.6	0.353	0.013	0.01	0.01	0.007	87.1	67.0	67.0	46.9
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*** Note that if the product is non-dimmable, only the values for "NC (No Control)" are valid; if the driver type is PSU, only the values for "NC (No Control)" and "PS (presence sensing)" for are valid*

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