

ENVIRONMENTAL PRODUCT DECLARATION

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

Clearflood gen2 Medium
BVP656
Signify N.V.



EPD HUB
Publishing date 2024-10-15

The logo features a green circular icon with a stylized 'S' inside, followed by the word 'signify' in a lowercase, green, 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 Medium
Additional labels	BVP656
Product reference	910771137546
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	16.5 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	3.06E+02
GWP-total, A1-A3 (kgCO ₂ e)	3.00E+02
Secondary material, inputs (%)	5.04
Secondary material, outputs (%)	58.8
Total energy use, A1-A3 (kWh)	916
Net fresh water use, A1-A3 (m ³ e)	1.42

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	71.27	EU
Minerals	19.63	EU
Fossil materials	9.1	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	1.461

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 Unit
Mass per declared unit	16.5 kg
Functional unit	49235 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	2.97E+02	3.78E+00	-3.56E-01	3.00E+02	3.78E+00	5.41E+00	MNR	MNR	MNR	MNR	MNR	1.33E+04	MNR	MNR	2.32E-01	1.02E+00	1.17E+00	-1.47E+02
GWP – fossil	kg CO ₂ e	2.97E+02	3.77E+00	4.89E+00	3.06E+02	3.77E+00	1.38E-01	MNR	MNR	MNR	MNR	MNR	1.33E+04	MNR	MNR	2.32E-01	1.01E+00	6.42E-01	-1.47E+02
GWP – biogenic	kg CO ₂ e	-5.24E-01	0.00E+00	-5.27E+00	-5.80E+00	1.46E-03	5.27E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	0.00E+00	5.24E-01	-1.61E-02
GWP – LULUC	kg CO ₂ e	3.43E-01	1.39E-03	2.42E-02	3.69E-01	1.39E-03	4.72E-05	MNR	MNR	MNR	MNR	MNR	3.11E+01	MNR	MNR	8.56E-05	3.12E-04	2.32E-04	-1.11E-02
Ozone depletion pot.	kg CFC ₁₁ e	1.13E-05	8.68E-07	5.97E-07	1.27E-05	8.68E-07	1.38E-08	MNR	MNR	MNR	MNR	MNR	6.76E-04	MNR	MNR	5.34E-08	2.49E-08	2.48E-08	-3.97E-06
Acidification potential	mol H ⁺ e	2.24E+00	1.60E-02	2.25E-02	2.28E+00	1.60E-02	1.08E-03	MNR	MNR	MNR	MNR	MNR	7.60E+01	MNR	MNR	9.82E-04	2.60E-03	1.14E-03	-1.47E+00
EP-freshwater ²⁾	kg Pe	1.53E-02	3.09E-05	2.38E-04	1.56E-02	3.09E-05	1.45E-06	MNR	MNR	MNR	MNR	MNR	1.41E+00	MNR	MNR	1.90E-06	9.77E-06	1.37E-05	-9.18E-03
EP-marine	kg Ne	3.18E-01	4.75E-03	1.01E-02	3.32E-01	4.75E-03	4.57E-04	MNR	MNR	MNR	MNR	MNR	1.01E+01	MNR	MNR	2.92E-04	6.00E-04	2.89E-03	-1.63E-01
EP-terrestrial	mol Ne	3.58E+00	5.24E-02	6.37E-02	3.69E+00	5.24E-02	4.74E-03	MNR	MNR	MNR	MNR	MNR	1.15E+02	MNR	MNR	3.22E-03	6.80E-03	3.53E-03	-1.88E+00
POCP (“smog”) ³⁾	kg NMVOCe	1.04E+00	1.68E-02	1.87E-02	1.07E+00	1.68E-02	1.19E-03	MNR	MNR	MNR	MNR	MNR	3.14E+01	MNR	MNR	1.03E-03	1.84E-03	1.46E-03	-5.43E-01
ADP-minerals & metals ⁴⁾	kg Sbe	7.02E-03	8.85E-06	4.13E-05	7.07E-03	8.85E-06	4.56E-07	MNR	MNR	MNR	MNR	MNR	1.24E-01	MNR	MNR	5.44E-07	2.33E-05	4.74E-07	-6.68E-04
ADP-fossil resources	MJ	2.93E+03	5.67E+01	7.21E+01	3.06E+03	5.67E+01	1.07E+00	MNR	MNR	MNR	MNR	MNR	2.83E+05	MNR	MNR	3.48E+00	2.82E+00	2.42E+00	-1.44E+03
Water use ⁵⁾	m ³ e depr.	5.83E+01	2.54E-01	2.30E+00	6.09E+01	2.54E-01	2.54E-01	MNR	MNR	MNR	MNR	MNR	7.74E+03	MNR	MNR	1.56E-02	7.66E-02	1.17E-01	-9.48E+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	2.22E-05	4.35E-07	3.75E-07	2.30E-05	4.35E-07	1.01E-08	MNR	MNR	MNR	MNR	MNR	2.50E-04	MNR	MNR	2.67E-08	3.37E-08	1.97E-08	-7.91E-06
Ionizing radiation ⁶⁾	kBq U235e	1.18E+01	2.70E-01	2.24E-01	1.23E+01	2.70E-01	3.89E-03	MNR	MNR	MNR	MNR	MNR	7.67E+03	MNR	MNR	1.66E-02	1.72E-02	1.32E-02	-8.59E+00
Ecotoxicity (freshwater)	CTUe	1.06E+04	5.10E+01	1.90E+02	1.08E+04	5.10E+01	7.43E+00	MNR	MNR	MNR	MNR	MNR	1.93E+05	MNR	MNR	3.13E+00	1.35E+01	1.02E+03	-2.66E+03
Human toxicity, cancer	CTUh	3.60E-07	1.25E-09	3.26E-09	3.65E-07	1.25E-09	3.33E-10	MNR	MNR	MNR	MNR	MNR	6.31E-06	MNR	MNR	7.70E-11	4.21E-10	4.35E-10	5.51E-09
Human tox. non-cancer	CTUh	8.32E-06	5.05E-08	6.87E-08	8.44E-06	5.05E-08	1.39E-08	MNR	MNR	MNR	MNR	MNR	2.07E-04	MNR	MNR	3.10E-09	1.77E-08	2.16E-08	-2.71E-06
SQP ⁷⁾	-	8.22E+02	6.53E+01	1.92E+02	1.08E+03	6.53E+01	5.84E-01	MNR	MNR	MNR	MNR	MNR	5.12E+04	MNR	MNR	4.02E+00	5.07E+00	3.76E+00	-2.64E+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	1.92E+02	6.39E-01	4.87E+01	2.42E+02	6.39E-01	3.55E-02	MNR	MNR	MNR	MNR	MNR	5.77E+04	MNR	MNR	3.93E-02	4.01E-01	1.06E-01	-1.87E+01
Renew. PER as material	MJ	6.73E+00	0.00E+00	4.62E+01	5.29E+01	0.00E+00	-4.62E+01	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	-6.48E-01	-6.08E+00	0.00E+00
Total use of renew. PER	MJ	1.99E+02	6.39E-01	9.49E+01	2.95E+02	6.39E-01	-4.61E+01	MNR	MNR	MNR	MNR	MNR	5.77E+04	MNR	MNR	3.93E-02	-2.47E-01	-5.97E+00	-1.87E+01
Non-re. PER as energy	MJ	2.93E+03	5.67E+01	6.51E+01	3.05E+03	5.67E+01	1.07E+00	MNR	MNR	MNR	MNR	MNR	2.83E+05	MNR	MNR	3.48E+00	2.82E+00	2.42E+00	-1.44E+03
Non-re. PER as material	MJ	4.33E+01	0.00E+00	3.81E-01	4.37E+01	0.00E+00	-3.81E-01	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	-1.97E+01	-2.36E+01	1.04E-01
Total use of non-re. PER	MJ	2.98E+03	5.67E+01	6.55E+01	3.10E+03	5.67E+01	6.93E-01	MNR	MNR	MNR	MNR	MNR	2.83E+05	MNR	MNR	3.48E+00	-1.69E+01	-2.12E+01	-1.44E+03
Secondary materials	kg	8.32E-01	1.57E-02	3.59E+00	4.44E+00	1.57E-02	1.28E-03	MNR	MNR	MNR	MNR	MNR	2.92E+01	MNR	MNR	9.68E-04	2.79E-03	5.67E-03	5.99E+00
Renew. secondary fuels	MJ	6.96E-02	1.59E-04	2.55E-01	3.24E-01	1.59E-04	2.13E-05	MNR	MNR	MNR	MNR	MNR	2.36E-01	MNR	MNR	9.76E-06	1.43E-04	4.35E-05	-2.61E-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	1.35E+00	7.34E-03	6.72E-02	1.42E+00	7.34E-03	4.50E-03	MNR	MNR	MNR	MNR	MNR	2.44E+02	MNR	MNR	4.51E-04	2.50E-03	1.70E-03	-4.39E-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	5.22E+01	7.52E-02	2.58E-01	5.26E+01	7.52E-02	1.22E-03	MNR	MNR	MNR	MNR	MNR	1.02E+03	MNR	MNR	4.62E-03	2.00E-02	1.06E-02	-2.32E+01
Non-hazardous waste	kg	5.28E+02	1.24E+00	4.71E+00	5.34E+02	1.24E+00	3.60E+00	MNR	MNR	MNR	MNR	MNR	6.43E+04	MNR	MNR	7.59E-02	1.04E+00	6.77E+00	-4.16E+02
Radioactive waste	kg	5.39E-03	3.79E-04	1.57E-04	5.93E-03	3.79E-04	1.72E-06	MNR	MNR	MNR	MNR	MNR	2.06E+00	MNR	MNR	2.33E-05	1.17E-05	0.00E+00	-3.16E-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	9.37E+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	3.30E-01	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	9.15E-01	9.15E-01	0.00E+00	0.00E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	7.35E+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	2.89E+02	3.74E+00	5.06E+00	2.98E+02	3.74E+00	1.32E-01	MNR	MNR	MNR	MNR	MNR	1.32E+04	MNR	MNR	2.30E-01	1.01E+00	1.80E+00	-1.44E+02
Ozone depletion Pot.	kg CFC ₁₁ e	9.81E-06	6.88E-07	5.03E-07	1.10E-05	6.88E-07	1.21E-08	MNR	MNR	MNR	MNR	MNR	5.86E-04	MNR	MNR	4.23E-08	2.03E-08	1.99E-08	-3.37E-06
Acidification	kg SO ₂ e	1.89E+00	1.24E-02	1.65E-02	1.92E+00	1.24E-02	7.88E-04	MNR	MNR	MNR	MNR	MNR	6.45E+01	MNR	MNR	7.63E-04	2.08E-03	8.95E-04	-1.27E+00
Eutrophication	kg PO ₄ ³ e	5.67E-01	2.83E-03	1.11E-02	5.81E-01	2.83E-03	5.87E-04	MNR	MNR	MNR	MNR	MNR	4.96E+01	MNR	MNR	1.74E-04	7.11E-04	7.54E-03	-3.57E-01
POCP ("smog")	kg C ₂ H ₄ e	1.12E-01	4.85E-04	1.08E-03	1.13E-01	4.85E-04	2.47E-05	MNR	MNR	MNR	MNR	MNR	2.64E+00	MNR	MNR	2.98E-05	7.74E-05	3.18E-04	-6.28E-02
ADP-elements	kg Sbe	7.78E-03	8.57E-06	3.78E-05	7.83E-03	8.57E-06	3.57E-07	MNR	MNR	MNR	MNR	MNR	1.24E-01	MNR	MNR	5.27E-07	2.32E-05	4.47E-07	-6.54E-04
ADP-fossil	MJ	2.97E+03	5.67E+01	7.17E+01	3.10E+03	5.67E+01	1.07E+00	MNR	MNR	MNR	MNR	MNR	2.83E+05	MNR	MNR	3.48E+00	2.82E+00	2.42E+00	-1.44E+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
BVP656 LED350-4S/727 A35-MB ALU	31822.0	229.9	138.4	0.683	0.683	0.512	0.512	0.376	9083.9	6809.6	6809.6	5000.8
BVP656 LED350-4S/727 A35-NB ALU	31833.0	229.9	138.5	0.683	0.683	0.512	0.512	0.376	9083.9	6809.6	6809.6	5000.8
BVP656 LED350-4S/727 A35-NMB ALU	31828.0	229.9	138.4	0.683	0.683	0.512	0.512	0.376	9083.9	6809.6	6809.6	5000.8
BVP656 LED350-4S/727 A35-NWB ALU	31829.0	229.9	138.4	0.683	0.683	0.512	0.512	0.376	9083.9	6809.6	6809.6	5000.8
BVP656 LED350-4S/727 A35-VWB ALU	31373.0	229.9	136.5	0.683	0.683	0.512	0.512	0.376	9083.9	6809.6	6809.6	5000.8
BVP656 LED350-4S/727 A35-WB ALU	31824.0	229.9	138.4	0.683	0.683	0.512	0.512	0.376	9083.9	6809.6	6809.6	5000.8
BVP656 LED350-4S/727 A55-MB ALU	31604.0	229.9	137.5	0.683	0.683	0.512	0.512	0.376	9083.9	6809.6	6809.6	5000.8
BVP656 LED350-4S/727 A55-NB ALU	31187.0	229.9	135.7	0.683	0.683	0.512	0.512	0.376	9083.9	6809.6	6809.6	5000.8
BVP656 LED350-4S/727 A55-NMB ALU	31396.0	229.9	136.6	0.683	0.683	0.512	0.512	0.376	9083.9	6809.6	6809.6	5000.8
BVP656 LED350-4S/727 A55-NWB ALU	31344.0	229.9	136.3	0.683	0.683	0.512	0.512	0.376	9083.9	6809.6	6809.6	5000.8
BVP656 LED350-4S/727 A55-WB ALU	31500.0	229.9	137.0	0.683	0.683	0.512	0.512	0.376	9083.9	6809.6	6809.6	5000.8
BVP656 LED350-4S/727 A65-NB ALU	30802.0	229.9	134.0	0.683	0.683	0.512	0.512	0.376	9083.9	6809.6	6809.6	5000.8
BVP656 LED350-4S/727 A65-NWB ALU	30421.0	229.9	132.3	0.683	0.683	0.512	0.512	0.376	9083.9	6809.6	6809.6	5000.8
BVP656 LED350-4S/727 A65-VWB ALU	30236.0	229.9	131.5	0.683	0.683	0.512	0.512	0.376	9083.9	6809.6	6809.6	5000.8
BVP656 LED350-4S/727 A65-WB ALU	30040.0	229.9	130.7	0.683	0.683	0.512	0.512	0.376	9083.9	6809.6	6809.6	5000.8
BVP656 LED350-4S/727 DW10 ALU	30805.0	229.9	134.0	0.683	0.683	0.512	0.512	0.376	9083.9	6809.6	6809.6	5000.8
BVP656 LED350-4S/727 DW30 ALU	30932.0	229.9	134.5	0.683	0.683	0.512	0.512	0.376	9083.9	6809.6	6809.6	5000.8

BVP656 LED350-4S/740 A35-MB ALU	31189.0	190.0	164.2	0.564	0.564	0.423	0.423	0.31	7501.2	5625.9	5625.9	4123.0
BVP656 LED350-4S/740 A35-NB ALU	31200.0	190.0	164.2	0.564	0.564	0.423	0.423	0.31	7501.2	5625.9	5625.9	4123.0
BVP656 LED350-4S/740 A35-NMB ALU	31195.0	190.0	164.2	0.564	0.564	0.423	0.423	0.31	7501.2	5625.9	5625.9	4123.0
BVP656 LED350-4S/740 A35-NWB ALU	31196.0	190.0	164.2	0.564	0.564	0.423	0.423	0.31	7501.2	5625.9	5625.9	4123.0
BVP656 LED350-4S/740 A35-VWB ALU	30749.0	190.0	161.8	0.564	0.564	0.423	0.423	0.31	7501.2	5625.9	5625.9	4123.0
BVP656 LED350-4S/740 A35-WB ALU	31191.0	190.0	164.2	0.564	0.564	0.423	0.423	0.31	7501.2	5625.9	5625.9	4123.0
BVP656 LED350-4S/740 A55-MB ALU	30976.0	190.0	163.0	0.564	0.564	0.423	0.423	0.31	7501.2	5625.9	5625.9	4123.0
BVP656 LED350-4S/740 A55-NB ALU	30566.0	190.0	160.9	0.564	0.564	0.423	0.423	0.31	7501.2	5625.9	5625.9	4123.0
BVP656 LED350-4S/740 A55-NMB ALU	30771.0	190.0	162.0	0.564	0.564	0.423	0.423	0.31	7501.2	5625.9	5625.9	4123.0
BVP656 LED350-4S/740 A55-NWB ALU	30720.0	190.0	161.7	0.564	0.564	0.423	0.423	0.31	7501.2	5625.9	5625.9	4123.0
BVP656 LED350-4S/740 A55-WB ALU	30874.0	190.0	162.5	0.564	0.564	0.423	0.423	0.31	7501.2	5625.9	5625.9	4123.0
BVP656 LED350-4S/740 A65-NB ALU	30189.0	190.0	158.9	0.564	0.564	0.423	0.423	0.31	7501.2	5625.9	5625.9	4123.0
BVP656 LED350-4S/740 A65-NWB ALU	29816.0	190.0	156.9	0.564	0.564	0.423	0.423	0.31	7501.2	5625.9	5625.9	4123.0
BVP656 LED350-4S/740 A65-VWB ALU	29634.0	190.0	156.0	0.564	0.564	0.423	0.423	0.31	7501.2	5625.9	5625.9	4123.0
BVP656 LED350-4S/740 A65-WB ALU	29442.0	190.0	155.0	0.564	0.564	0.423	0.423	0.31	7501.2	5625.9	5625.9	4123.0
BVP656 LED350-4S/740 DW10 ALU	30192.0	190.0	158.9	0.564	0.564	0.423	0.423	0.31	7501.2	5625.9	5625.9	4123.0
BVP656 LED350-4S/740 DW30 ALU	30317.0	190.0	159.6	0.564	0.564	0.423	0.423	0.31	7501.2	5625.9	5625.9	4123.0
BVP656 LED350-4S/840 A35-MB ALU	31434.0	207.9	151.2	0.617	0.617	0.463	0.463	0.339	8206.1	6157.9	6157.9	4508.7
BVP656 LED350-4S/840 A35-NB ALU	31445.0	207.9	151.3	0.617	0.617	0.463	0.463	0.339	8206.1	6157.9	6157.9	4508.7
BVP656 LED350-4S/840 A35-NMB ALU	31440.0	207.9	151.2	0.617	0.617	0.463	0.463	0.339	8206.1	6157.9	6157.9	4508.7
BVP656 LED350-4S/840 A35-NWB ALU	31441.0	207.9	151.2	0.617	0.617	0.463	0.463	0.339	8206.1	6157.9	6157.9	4508.7
BVP656 LED350-4S/840 A35-VWB ALU	30991.0	207.9	149.1	0.617	0.617	0.463	0.463	0.339	8206.1	6157.9	6157.9	4508.7
BVP656 LED350-4S/840 A35-WB ALU	31436.0	207.9	151.2	0.617	0.617	0.463	0.463	0.339	8206.1	6157.9	6157.9	4508.7
BVP656 LED350-4S/840 A55-MB ALU	31219.0	207.9	150.2	0.617	0.617	0.463	0.463	0.339	8206.1	6157.9	6157.9	4508.7

BVP656 LED350-4S/840 A55-NB ALU	30807.0	207.9	148.2	0.617	0.617	0.463	0.463	0.339	8206.1	6157.9	6157.9	4508.7
BVP656 LED350-4S/840 A55-NMB ALU	31013.0	207.9	149.2	0.617	0.617	0.463	0.463	0.339	8206.1	6157.9	6157.9	4508.7
BVP656 LED350-4S/840 A55-NWB ALU	30962.0	207.9	148.9	0.617	0.617	0.463	0.463	0.339	8206.1	6157.9	6157.9	4508.7
BVP656 LED350-4S/840 A55-WB ALU	31116.0	207.9	149.7	0.617	0.617	0.463	0.463	0.339	8206.1	6157.9	6157.9	4508.7
BVP656 LED350-4S/840 A65-NB ALU	30426.0	207.9	146.3	0.617	0.617	0.463	0.463	0.339	8206.1	6157.9	6157.9	4508.7
BVP656 LED350-4S/840 A65-NWB ALU	30051.0	207.9	144.5	0.617	0.617	0.463	0.463	0.339	8206.1	6157.9	6157.9	4508.7
BVP656 LED350-4S/840 A65-VWB ALU	29867.0	207.9	143.7	0.617	0.617	0.463	0.463	0.339	8206.1	6157.9	6157.9	4508.7
BVP656 LED350-4S/840 A65-WB ALU	29674.0	207.9	142.7	0.617	0.617	0.463	0.463	0.339	8206.1	6157.9	6157.9	4508.7
BVP656 LED350-4S/840 DW10 ALU	30430.0	207.9	146.4	0.617	0.617	0.463	0.463	0.339	8206.1	6157.9	6157.9	4508.7
BVP656 LED350-4S/840 DW30 ALU	30556.0	207.9	147.0	0.617	0.617	0.463	0.463	0.339	8206.1	6157.9	6157.9	4508.7
BVP656 LED500-4S/727 A35-MB ALU	43947.0	340.1	129.2	1.01	1.01	0.758	0.758	0.556	13433.0	10081.4	10081.4	7394.8
BVP656 LED500-4S/727 A35-NB ALU	43963.0	340.1	129.3	1.01	1.01	0.758	0.758	0.556	13433.0	10081.4	10081.4	7394.8
BVP656 LED500-4S/727 A35-NMB ALU	43956.0	340.1	129.2	1.01	1.01	0.758	0.758	0.556	13433.0	10081.4	10081.4	7394.8
BVP656 LED500-4S/727 A35-NWB ALU	43957.0	340.1	129.2	1.01	1.01	0.758	0.758	0.556	13433.0	10081.4	10081.4	7394.8
BVP656 LED500-4S/727 A35-VWB ALU	43328.0	340.1	127.4	1.01	1.01	0.758	0.758	0.556	13433.0	10081.4	10081.4	7394.8
BVP656 LED500-4S/727 A35-WB ALU	43950.0	340.1	129.2	1.01	1.01	0.758	0.758	0.556	13433.0	10081.4	10081.4	7394.8
BVP656 LED500-4S/727 A55-MB ALU	43646.0	340.1	128.3	1.01	1.01	0.758	0.758	0.556	13433.0	10081.4	10081.4	7394.8
BVP656 LED500-4S/727 A55-NB ALU	43070.0	340.1	126.6	1.01	1.01	0.758	0.758	0.556	13433.0	10081.4	10081.4	7394.8
BVP656 LED500-4S/727 A55-NMB ALU	43359.0	340.1	127.5	1.01	1.01	0.758	0.758	0.556	13433.0	10081.4	10081.4	7394.8
BVP656 LED500-4S/727 A55-NWB ALU	43287.0	340.1	127.3	1.01	1.01	0.758	0.758	0.556	13433.0	10081.4	10081.4	7394.8
BVP656 LED500-4S/727 A55-WB ALU	43503.0	340.1	127.9	1.01	1.01	0.758	0.758	0.556	13433.0	10081.4	10081.4	7394.8
BVP656 LED500-4S/727 A65-NB ALU	42538.0	340.1	125.1	1.01	1.01	0.758	0.758	0.556	13433.0	10081.4	10081.4	7394.8
BVP656 LED500-4S/727 A65-NWB ALU	42013.0	340.1	123.5	1.01	1.01	0.758	0.758	0.556	13433.0	10081.4	10081.4	7394.8
BVP656 LED500-4S/727 A65-VWB ALU	41757.0	340.1	122.8	1.01	1.01	0.758	0.758	0.556	13433.0	10081.4	10081.4	7394.8

BVP656 LED500-4S/727 A65-WB ALU	41486.0	340.1	122.0	1.01	1.01	0.758	0.758	0.556	13433.0	10081.4	10081.4	7394.8
BVP656 LED500-4S/727 DW10 ALU	42543.0	340.1	125.1	1.01	1.01	0.758	0.758	0.556	13433.0	10081.4	10081.4	7394.8
BVP656 LED500-4S/727 DW30 ALU	42719.0	340.1	125.6	1.01	1.01	0.758	0.758	0.556	13433.0	10081.4	10081.4	7394.8
BVP656 LED550-4S/840 A35-MB ALU	47233.0	342.4	137.9	1.017	1.017	0.763	0.763	0.559	13526.1	10147.9	10147.9	7434.7
BVP656 LED550-4S/840 A35-NB ALU	47250.0	342.4	138.0	1.017	1.017	0.763	0.763	0.559	13526.1	10147.9	10147.9	7434.7
BVP656 LED550-4S/840 A35-NMB ALU	47242.0	342.4	138.0	1.017	1.017	0.763	0.763	0.559	13526.1	10147.9	10147.9	7434.7
BVP656 LED550-4S/840 A35-NWB ALU	47244.0	342.4	138.0	1.017	1.017	0.763	0.763	0.559	13526.1	10147.9	10147.9	7434.7
BVP656 LED550-4S/840 A35-VWB ALU	46567.0	342.4	136.0	1.017	1.017	0.763	0.763	0.559	13526.1	10147.9	10147.9	7434.7
BVP656 LED550-4S/840 A35-WB ALU	47236.0	342.4	138.0	1.017	1.017	0.763	0.763	0.559	13526.1	10147.9	10147.9	7434.7
BVP656 LED550-4S/840 A55-MB ALU	46910.0	342.4	137.0	1.017	1.017	0.763	0.763	0.559	13526.1	10147.9	10147.9	7434.7
BVP656 LED550-4S/840 A55-NB ALU	46290.0	342.4	135.2	1.017	1.017	0.763	0.763	0.559	13526.1	10147.9	10147.9	7434.7
BVP656 LED550-4S/840 A55-NMB ALU	46601.0	342.4	136.1	1.017	1.017	0.763	0.763	0.559	13526.1	10147.9	10147.9	7434.7
BVP656 LED550-4S/840 A55-NWB ALU	46524.0	342.4	135.9	1.017	1.017	0.763	0.763	0.559	13526.1	10147.9	10147.9	7434.7
BVP656 LED550-4S/840 A55-WB ALU	46756.0	342.4	136.6	1.017	1.017	0.763	0.763	0.559	13526.1	10147.9	10147.9	7434.7
BVP656 LED550-4S/840 A65-NB ALU	45719.0	342.4	133.5	1.017	1.017	0.763	0.763	0.559	13526.1	10147.9	10147.9	7434.7
BVP656 LED550-4S/840 A65-NWB ALU	45154.0	342.4	131.9	1.017	1.017	0.763	0.763	0.559	13526.1	10147.9	10147.9	7434.7
BVP656 LED550-4S/840 A65-VWB ALU	44879.0	342.4	131.1	1.017	1.017	0.763	0.763	0.559	13526.1	10147.9	10147.9	7434.7
BVP656 LED550-4S/840 A65-WB ALU	44587.0	342.4	130.2	1.017	1.017	0.763	0.763	0.559	13526.1	10147.9	10147.9	7434.7
BVP656 LED550-4S/840 DW10 ALU	45724.0	342.4	133.5	1.017	1.017	0.763	0.763	0.559	13526.1	10147.9	10147.9	7434.7
BVP656 LED550-4S/840 DW30 ALU	45913.0	342.4	134.1	1.017	1.017	0.763	0.763	0.559	13526.1	10147.9	10147.9	7434.7
BVP656 LED600-4S/740 A35-MB ALU	52156.0	336.8	154.9	1.0	1.0	0.75	0.75	0.55	13300.0	9975.0	9975.0	7315.0
BVP656 LED600-4S/740 A35-NB ALU	52175.0	336.8	154.9	1.0	1.0	0.75	0.75	0.55	13300.0	9975.0	9975.0	7315.0
BVP656 LED600-4S/740 A35-NMB ALU	52167.0	336.8	154.9	1.0	1.0	0.75	0.75	0.55	13300.0	9975.0	9975.0	7315.0
BVP656 LED600-4S/740 A35-NWB ALU	52169.0	336.8	154.9	1.0	1.0	0.75	0.75	0.55	13300.0	9975.0	9975.0	7315.0

BVP656 LED600-4S/740 A35-VWB ALU	51421.0	336.8	152.7	1.0	1.0	0.75	0.75	0.55	13300.0	9975.0	9975.0	7315.0
BVP656 LED600-4S/740 A35-WB ALU	52160.0	336.8	154.9	1.0	1.0	0.75	0.75	0.55	13300.0	9975.0	9975.0	7315.0
BVP656 LED600-4S/740 A55-MB ALU	51800.0	336.8	153.8	1.0	1.0	0.75	0.75	0.55	13300.0	9975.0	9975.0	7315.0
BVP656 LED600-4S/740 A55-NB ALU	51115.0	336.8	151.8	1.0	1.0	0.75	0.75	0.55	13300.0	9975.0	9975.0	7315.0
BVP656 LED600-4S/740 A55-NMB ALU	51458.0	336.8	152.8	1.0	1.0	0.75	0.75	0.55	13300.0	9975.0	9975.0	7315.0
BVP656 LED600-4S/740 A55-NWB ALU	51373.0	336.8	152.5	1.0	1.0	0.75	0.75	0.55	13300.0	9975.0	9975.0	7315.0
BVP656 LED600-4S/740 A55-WB ALU	51630.0	336.8	153.3	1.0	1.0	0.75	0.75	0.55	13300.0	9975.0	9975.0	7315.0
BVP656 LED600-4S/740 A65-NB ALU	50484.0	336.8	149.9	1.0	1.0	0.75	0.75	0.55	13300.0	9975.0	9975.0	7315.0
BVP656 LED600-4S/740 A65-NWB ALU	49861.0	336.8	148.0	1.0	1.0	0.75	0.75	0.55	13300.0	9975.0	9975.0	7315.0
BVP656 LED600-4S/740 A65-VWB ALU	49557.0	336.8	147.1	1.0	1.0	0.75	0.75	0.55	13300.0	9975.0	9975.0	7315.0
BVP656 LED600-4S/740 A65-WB ALU	49235.0	336.8	146.2	1.0	1.0	0.75	0.75	0.55	13300.0	9975.0	9975.0	7315.0
BVP656 LED600-4S/740 DW10 ALU	50490.0	336.8	149.9	1.0	1.0	0.75	0.75	0.55	13300.0	9975.0	9975.0	7315.0
BVP656 LED600-4S/740 DW30 ALU	50699.0	336.8	150.5	1.0	1.0	0.75	0.75	0.55	13300.0	9975.0	9975.0	7315.0

* 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
BVP656 LED350-4S/727 A35-MB ALU	31822.0	229.9	138.4	0.683	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED350-4S/727 A35-NB ALU	31833.0	229.9	138.5	0.683	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED350-4S/727 A35-NMB ALU	31828.0	229.9	138.4	0.683	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED350-4S/727 A35-NWB ALU	31829.0	229.9	138.4	0.683	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED350-4S/727 A35-VWB ALU	31373.0	229.9	136.5	0.683	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2

BVP656 LED350-4S/727 A35-WB ALU	31824.0	229.9	138.4	0.683	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED350-4S/727 A55-MB ALU	31604.0	229.9	137.5	0.683	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED350-4S/727 A55-NB ALU	31187.0	229.9	135.7	0.683	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED350-4S/727 A55-NMB ALU	31396.0	229.9	136.6	0.683	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED350-4S/727 A55-NWB ALU	31344.0	229.9	136.3	0.683	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED350-4S/727 A55-WB ALU	31500.0	229.9	137.0	0.683	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED350-4S/727 A65-NB ALU	30802.0	229.9	134.0	0.683	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED350-4S/727 A65-NWB ALU	30421.0	229.9	132.3	0.683	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED350-4S/727 A65-VWB ALU	30236.0	229.9	131.5	0.683	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED350-4S/727 A65-WB ALU	30040.0	229.9	130.7	0.683	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED350-4S/727 DW10 ALU	30805.0	229.9	134.0	0.683	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED350-4S/727 DW30 ALU	30932.0	229.9	134.5	0.683	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED350-4S/740 A35-MB ALU	31189.0	190.0	164.2	0.564	0.006	0.005	0.005	0.003	79.8	66.5	66.5	39.9
BVP656 LED350-4S/740 A35-NB ALU	31200.0	190.0	164.2	0.564	0.006	0.005	0.005	0.003	79.8	66.5	66.5	39.9
BVP656 LED350-4S/740 A35-NMB ALU	31195.0	190.0	164.2	0.564	0.006	0.005	0.005	0.003	79.8	66.5	66.5	39.9
BVP656 LED350-4S/740 A35-NWB ALU	31196.0	190.0	164.2	0.564	0.006	0.005	0.005	0.003	79.8	66.5	66.5	39.9
BVP656 LED350-4S/740 A35-VWB ALU	30749.0	190.0	161.8	0.564	0.006	0.005	0.005	0.003	79.8	66.5	66.5	39.9
BVP656 LED350-4S/740 A35-WB ALU	31191.0	190.0	164.2	0.564	0.006	0.005	0.005	0.003	79.8	66.5	66.5	39.9
BVP656 LED350-4S/740 A55-MB ALU	30976.0	190.0	163.0	0.564	0.006	0.005	0.005	0.003	79.8	66.5	66.5	39.9
BVP656 LED350-4S/740 A55-NB ALU	30566.0	190.0	160.9	0.564	0.006	0.005	0.005	0.003	79.8	66.5	66.5	39.9
BVP656 LED350-4S/740 A55-NMB ALU	30771.0	190.0	162.0	0.564	0.006	0.005	0.005	0.003	79.8	66.5	66.5	39.9
BVP656 LED350-4S/740 A55-NWB ALU	30720.0	190.0	161.7	0.564	0.006	0.005	0.005	0.003	79.8	66.5	66.5	39.9
BVP656 LED350-4S/740 A55-WB ALU	30874.0	190.0	162.5	0.564	0.006	0.005	0.005	0.003	79.8	66.5	66.5	39.9
BVP656 LED350-4S/740 A65-NB ALU	30189.0	190.0	158.9	0.564	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2

BVP656 LED350-4S/740 A65-NWB ALU	29816.0	190.0	156.9	0.564	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED350-4S/740 A65-VWB ALU	29634.0	190.0	156.0	0.564	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED350-4S/740 A65-WB ALU	29442.0	190.0	155.0	0.564	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED350-4S/740 DW10 ALU	30192.0	190.0	158.9	0.564	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED350-4S/740 DW30 ALU	30317.0	190.0	159.6	0.564	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED350-4S/840 A35-MB ALU	31434.0	207.9	151.2	0.617	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED350-4S/840 A35-NB ALU	31445.0	207.9	151.3	0.617	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED350-4S/840 A35-NMB ALU	31440.0	207.9	151.2	0.617	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED350-4S/840 A35-NWB ALU	31441.0	207.9	151.2	0.617	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED350-4S/840 A35-VWB ALU	30991.0	207.9	149.1	0.617	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED350-4S/840 A35-WB ALU	31436.0	207.9	151.2	0.617	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED350-4S/840 A55-MB ALU	31219.0	207.9	150.2	0.617	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED350-4S/840 A55-NB ALU	30807.0	207.9	148.2	0.617	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED350-4S/840 A55-NMB ALU	31013.0	207.9	149.2	0.617	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED350-4S/840 A55-NWB ALU	30962.0	207.9	148.9	0.617	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED350-4S/840 A55-WB ALU	31116.0	207.9	149.7	0.617	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED350-4S/840 A65-NB ALU	30426.0	207.9	146.3	0.617	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED350-4S/840 A65-NWB ALU	30051.0	207.9	144.5	0.617	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED350-4S/840 A65-VWB ALU	29867.0	207.9	143.7	0.617	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED350-4S/840 A65-WB ALU	29674.0	207.9	142.7	0.617	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED350-4S/840 DW10 ALU	30430.0	207.9	146.4	0.617	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED350-4S/840 DW30 ALU	30556.0	207.9	147.0	0.617	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED500-4S/727 A35-MB ALU	43947.0	340.1	129.2	1.01	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED500-4S/727 A35-NB ALU	43963.0	340.1	129.3	1.01	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2

BVP656 LED500-4S/727 A35-NMB ALU	43956.0	340.1	129.2	1.01	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED500-4S/727 A35-NWB ALU	43957.0	340.1	129.2	1.01	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED500-4S/727 A35-VWB ALU	43328.0	340.1	127.4	1.01	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED500-4S/727 A35-WB ALU	43950.0	340.1	129.2	1.01	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED500-4S/727 A55-MB ALU	43646.0	340.1	128.3	1.01	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED500-4S/727 A55-NB ALU	43070.0	340.1	126.6	1.01	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED500-4S/727 A55-NMB ALU	43359.0	340.1	127.5	1.01	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED500-4S/727 A55-NWB ALU	43287.0	340.1	127.3	1.01	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED500-4S/727 A55-WB ALU	43503.0	340.1	127.9	1.01	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED500-4S/727 A65-NB ALU	42538.0	340.1	125.1	1.01	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED500-4S/727 A65-NWB ALU	42013.0	340.1	123.5	1.01	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED500-4S/727 A65-VWB ALU	41757.0	340.1	122.8	1.01	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED500-4S/727 A65-WB ALU	41486.0	340.1	122.0	1.01	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED500-4S/727 DW10 ALU	42543.0	340.1	125.1	1.01	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED500-4S/727 DW30 ALU	42719.0	340.1	125.6	1.01	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED550-4S/840 A35-MB ALU	47233.0	342.4	137.9	1.017	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED550-4S/840 A35-NB ALU	47250.0	342.4	138.0	1.017	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED550-4S/840 A35-NMB ALU	47242.0	342.4	138.0	1.017	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED550-4S/840 A35-NWB ALU	47244.0	342.4	138.0	1.017	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED550-4S/840 A35-VWB ALU	46567.0	342.4	136.0	1.017	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED550-4S/840 A35-WB ALU	47236.0	342.4	138.0	1.017	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED550-4S/840 A55-MB ALU	46910.0	342.4	137.0	1.017	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED550-4S/840 A55-NB ALU	46290.0	342.4	135.2	1.017	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED550-4S/840 A55-NMB ALU	46601.0	342.4	136.1	1.017	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2

BVP656 LED550-4S/840 A55-NWB ALU	46524.0	342.4	135.9	1.017	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED550-4S/840 A55-WB ALU	46756.0	342.4	136.6	1.017	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED550-4S/840 A65-NB ALU	45719.0	342.4	133.5	1.017	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED550-4S/840 A65-NWB ALU	45154.0	342.4	131.9	1.017	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED550-4S/840 A65-VWB ALU	44879.0	342.4	131.1	1.017	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED550-4S/840 A65-WB ALU	44587.0	342.4	130.2	1.017	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED550-4S/840 DW10 ALU	45724.0	342.4	133.5	1.017	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED550-4S/840 DW30 ALU	45913.0	342.4	134.1	1.017	0.008	0.006	0.006	0.004	106.4	79.8	79.8	53.2
BVP656 LED600-4S/740 A35-MB ALU	52156.0	336.8	154.9	1.0	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED600-4S/740 A35-NB ALU	52175.0	336.8	154.9	1.0	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED600-4S/740 A35-NMB ALU	52167.0	336.8	154.9	1.0	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED600-4S/740 A35-NWB ALU	52169.0	336.8	154.9	1.0	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED600-4S/740 A35-VWB ALU	51421.0	336.8	152.7	1.0	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED600-4S/740 A35-WB ALU	52160.0	336.8	154.9	1.0	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED600-4S/740 A55-MB ALU	51800.0	336.8	153.8	1.0	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED600-4S/740 A55-NB ALU	51115.0	336.8	151.8	1.0	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED600-4S/740 A55-NMB ALU	51458.0	336.8	152.8	1.0	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED600-4S/740 A55-NWB ALU	51373.0	336.8	152.5	1.0	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED600-4S/740 A55-WB ALU	51630.0	336.8	153.3	1.0	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED600-4S/740 A65-NB ALU	50484.0	336.8	149.9	1.0	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED600-4S/740 A65-NWB ALU	49861.0	336.8	148.0	1.0	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED600-4S/740 A65-VWB ALU	49557.0	336.8	147.1	1.0	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED600-4S/740 A65-WB ALU	49235.0	336.8	146.2	1.0	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
BVP656 LED600-4S/740 DW10 ALU	50490.0	336.8	149.9	1.0	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2

BVP656 LED600-4S/740 DW30 ALU	50699.0	336.8	150.5	1.0	0.007	0.005	0.005	0.004	93.1	66.5	66.5	53.2
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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 = $(4,06E+02 / 3,96E-01) \times 2,70E-01 = 2,76 E+02$

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

POLAND	1,05E+00
PORTUGAL	4,22E-01
ROW	7,32E-01
SPAIN	3,34E-01
SWEDEN	4,95E-02
SWITZERLAND	5,38E-02
UK	3,17E-01

Source Ecoinvent 3.8