

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14021 / ISO 21930

Sunstay Pro gen2 (Hybrid)

VGP726

Signify N.V.



EPD HUB

Publishing date 2025-05-28



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

Reference standard	EN 15804+A2:2019 and ISO 14021
Sector	Electrical product
Category of EPD	Self-declared 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 14021: ☒ 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	Sunstay Pro gen2 (Hybrid)
Additional labels	VGP726
Product reference	912300060595
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	27 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	2.91E+02
GWP-total, A1-A3 (kgCO ₂ e)	2.87E+02
Secondary material, inputs (%)	39.9
Secondary material, outputs (%)	55.7
Total energy use, A1-A3 (kWh)	1090
Net fresh water use, A1-A3 (m ³ e)	2.03

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

SunStay Pro Gen2 solar lighting uses the latest LED technology for a long lifetime of 100,000 hours with best-in-class lumen maintenance @L95. The specially-designed pole mounting spigot offers different tilt angles, and the option for lateral and pole top mounting. With the new LedgineO optical platform you can also increase the distance between poles to reduce the total cost of ownership in a wide range of applications. Sunstay Pro is made for quick and simple installation with a re-designed feed through cable and top-down, tool-less access to the gear components for improved serviceability. And thanks to Service tag, you have access to all the documentation you need on site. Connectivity and dimming options are available, including a radar motion sensor mounted to automatically increase light levels when presence is detected. There's also the option to group and control neighbouring street lights through an internal mesh network to increase light levels in case of presence or activity detection. What's more, VGP726 SunStay Pro Gen2 Solar lighting is System Ready so it can be paired with lighting management systems such as Interact City at any point in the future. The all-in-one choice for today and tomorrow

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	61.96	APAC , EU
Minerals	14.23	EU
Fossil materials	23.77	APAC , 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	1.424

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 Unit
Mass per declared unit	27 kg
Functional unit	8000 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.

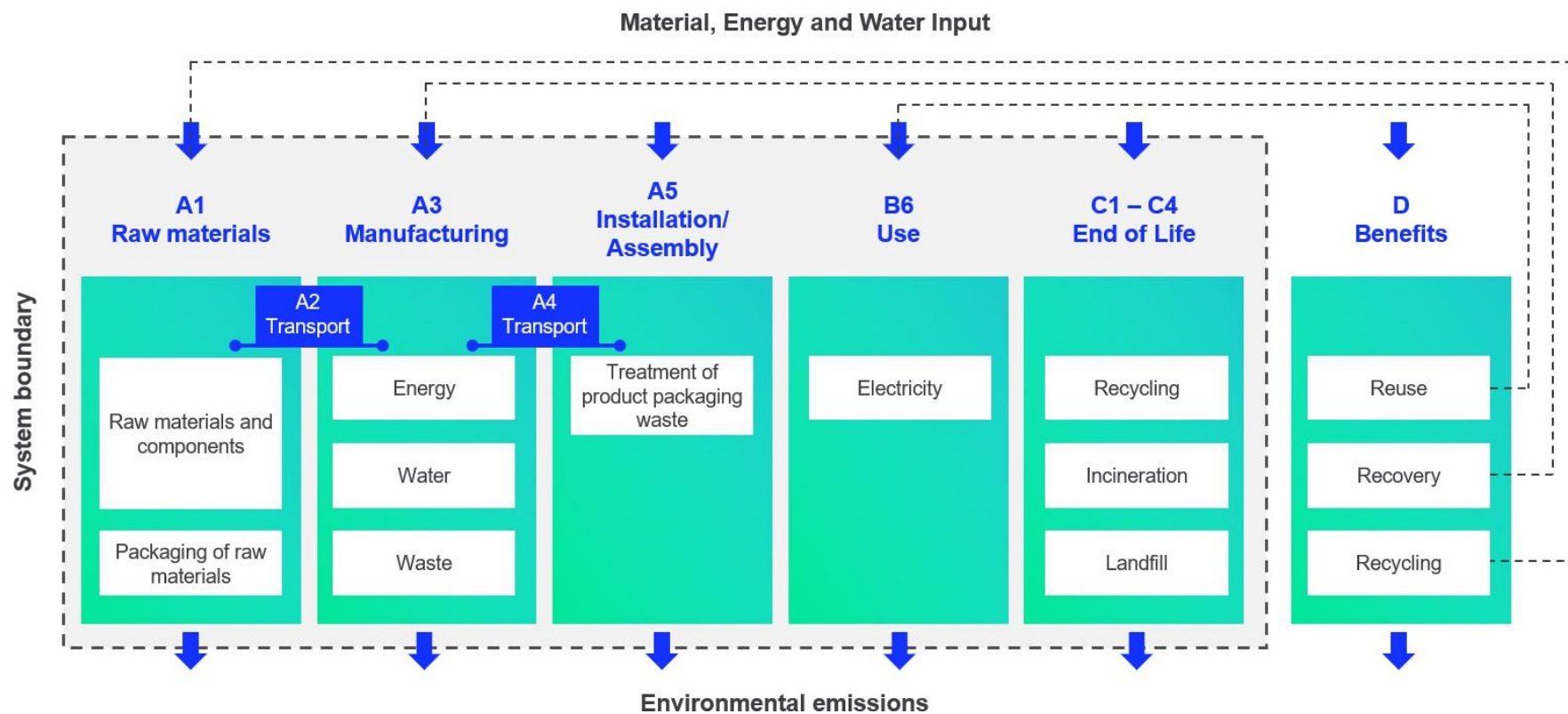
PRODUCT USE AND MAINTENANCE (B1-B7)

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 3.10.1 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	2.78E+02	7.05E+00	1.74E+00	2.87E+02	6.49E+00	5.22E+00	MNR	MNR	MNR	MNR	MNR	7.95E+02	MNR	MNR	4.31E-01	6.98E+00	5.84E+00	-4.74E+01
GWP – fossil	kg CO ₂ e	2.77E+02	7.05E+00	6.72E+00	2.91E+02	6.48E+00	1.18E-01	MNR	MNR	MNR	MNR	MNR	7.92E+02	MNR	MNR	4.31E-01	6.98E+00	5.04E+00	-4.73E+01
GWP – biogenic	kg CO ₂ e	4.54E-01	0.00E+00	-5.10E+00	-4.64E+00	0.00E+00	5.10E+00	MNR	MNR	MNR	MNR	MNR	-2.22E-16	MNR	MNR	7.91E-07	-1.06E-05	8.05E-01	-2.76E-02
GWP – LULUC	kg CO ₂ e	4.48E-01	3.27E-03	1.17E-01	5.67E-01	2.90E-03	3.58E-05	MNR	MNR	MNR	MNR	MNR	2.43E+00	MNR	MNR	1.93E-04	4.45E-04	5.79E-04	-2.15E-02
Ozone depletion pot.	kg CFC ₁₁ e	6.70E-05	1.04E-07	1.85E-07	6.73E-05	9.57E-08	1.59E-09	MNR	MNR	MNR	MNR	MNR	1.46E-05	MNR	MNR	6.37E-09	5.93E-09	7.97E-09	-2.08E-07
Acidification potential	mol H ⁺ e	2.75E+00	5.70E-02	2.96E-02	2.84E+00	2.21E-02	9.69E-04	MNR	MNR	MNR	MNR	MNR	4.66E+00	MNR	MNR	1.47E-03	4.88E-03	4.39E-03	-9.21E-01
EP-freshwater ²⁾	kg Pe	1.73E-01	4.90E-04	2.48E-03	1.76E-01	5.05E-04	1.42E-05	MNR	MNR	MNR	MNR	MNR	7.37E-01	MNR	MNR	3.36E-05	1.94E-04	2.57E-03	-5.50E-02
EP-marine	kg Ne	3.40E-01	1.57E-02	1.26E-02	3.68E-01	7.26E-03	5.01E-04	MNR	MNR	MNR	MNR	MNR	7.31E-01	MNR	MNR	4.83E-04	1.61E-03	5.53E-03	-7.68E-02
EP-terrestrial	mol Ne	3.71E+00	1.73E-01	8.10E-02	3.96E+00	7.90E-02	4.37E-03	MNR	MNR	MNR	MNR	MNR	6.55E+00	MNR	MNR	5.26E-03	1.58E-02	1.67E-02	-8.77E-01
POCP (“smog”) ³⁾	kg NMVOCe	1.30E+00	5.70E-02	3.37E-02	1.39E+00	3.26E-02	1.11E-03	MNR	MNR	MNR	MNR	MNR	2.16E+00	MNR	MNR	2.17E-03	4.34E-03	4.82E-03	-2.58E-01
ADP-minerals & metals ⁴⁾	kg Sbe	2.61E-02	1.74E-05	4.18E-05	2.62E-02	1.81E-05	3.18E-07	MNR	MNR	MNR	MNR	MNR	1.07E-02	MNR	MNR	1.20E-06	1.87E-05	4.13E-06	-9.18E-03
ADP-fossil resources	MJ	3.45E+03	9.94E+01	1.03E+02	3.65E+03	9.41E+01	8.36E-01	MNR	MNR	MNR	MNR	MNR	1.84E+04	MNR	MNR	6.26E+00	5.12E+00	8.03E+00	-4.89E+02
Water use ⁵⁾	m ³ e depr.	8.94E+01	4.58E-01	2.55E+00	9.25E+01	4.65E-01	2.58E-01	MNR	MNR	MNR	MNR	MNR	5.02E+02	MNR	MNR	3.09E-02	4.99E-01	3.14E-01	-8.29E+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	2.13E-05	6.16E-07	4.95E-07	2.24E-05	6.49E-07	8.17E-09	MNR	MNR	MNR	MNR	MNR	1.66E-05	MNR	MNR	4.32E-08	5.51E-08	5.22E-08	-3.38E-06
Ionizing radiation ⁶⁾	kBq U235e	1.81E+01	8.00E-02	3.12E-01	1.85E+01	8.19E-02	1.60E-03	MNR	MNR	MNR	MNR	MNR	5.09E+02	MNR	MNR	5.45E-03	1.72E-02	1.34E-02	-3.01E+00
Ecotoxicity (freshwater)	CTUe	2.85E+03	1.30E+01	3.19E+01	2.90E+03	1.33E+01	6.09E+00	MNR	MNR	MNR	MNR	MNR	2.81E+03	MNR	MNR	8.85E-01	1.53E+01	3.73E+02	-7.83E+02
Human toxicity, cancer	CTUh	2.29E-07	1.22E-09	3.28E-09	2.34E-07	1.07E-09	2.87E-10	MNR	MNR	MNR	MNR	MNR	2.68E-07	MNR	MNR	7.12E-11	8.23E-10	2.14E-09	-7.76E-08
Human tox. non-cancer	CTUh	1.05E-05	5.81E-08	8.97E-08	1.07E-05	6.09E-08	1.15E-08	MNR	MNR	MNR	MNR	MNR	1.39E-05	MNR	MNR	4.05E-09	3.60E-08	4.93E-08	-6.58E-06
SQP ⁷⁾	-	1.18E+03	8.57E+01	3.43E+02	1.61E+03	9.47E+01	2.53E-01	MNR	MNR	MNR	MNR	MNR	4.10E+03	MNR	MNR	6.30E+00	7.41E+00	8.90E+00	-2.59E+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	3.59E+02	1.27E+00	3.40E+01	3.95E+02	1.29E+00	-6.26E+01	MNR	MNR	MNR	MNR	MNR	5.06E+03	MNR	MNR	8.58E-02	6.38E-01	2.97E-01	-2.93E+01
Renew. PER as material	MJ	7.91E+00	0.00E+00	4.50E+01	5.29E+01	0.00E+00	-4.50E+01	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	-1.82E-02	-7.89E+00	4.81E-05
Total use of renew. PER	MJ	3.67E+02	1.27E+00	7.90E+01	4.48E+02	1.29E+00	-1.08E+02	MNR	MNR	MNR	MNR	MNR	5.06E+03	MNR	MNR	8.58E-02	6.19E-01	-7.59E+00	-2.93E+01
Non-re. PER as energy	MJ	3.35E+03	9.94E+01	9.09E+01	3.54E+03	9.41E+01	8.36E-01	MNR	MNR	MNR	MNR	MNR	1.84E+04	MNR	MNR	6.26E+00	-9.67E+01	-1.13E+02	-4.89E+02
Non-re. PER as material	MJ	2.33E+01	0.00E+00	3.65E-01	2.36E+01	0.00E+00	-3.65E-01	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	-5.30E+00	-1.80E+01	6.86E-02
Total use of non-re. PER	MJ	3.37E+03	9.94E+01	9.12E+01	3.56E+03	9.41E+01	4.71E-01	MNR	MNR	MNR	MNR	MNR	1.84E+04	MNR	MNR	6.26E+00	-1.02E+02	-1.31E+02	-4.89E+02
Secondary materials	kg	1.08E+01	4.31E-02	2.68E+00	1.35E+01	4.00E-02	1.23E-03	MNR	MNR	MNR	MNR	MNR	3.05E+00	MNR	MNR	2.66E-03	5.46E-03	1.58E-02	2.47E+00
Renew. secondary fuels	MJ	8.16E-02	4.70E-04	3.87E-01	4.69E-01	5.09E-04	2.01E-05	MNR	MNR	MNR	MNR	MNR	2.43E-02	MNR	MNR	3.38E-05	2.35E-04	8.04E-05	-5.59E-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	1.93E+00	1.35E-02	7.78E-02	2.03E+00	1.39E-02	4.09E-03	MNR	MNR	MNR	MNR	MNR	1.59E+01	MNR	MNR	9.25E-04	8.75E-03	-8.60E-03	-3.74E-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	4.86E+01	1.63E-01	3.78E-01	4.91E+01	1.59E-01	6.70E-02	MNR	MNR	MNR	MNR	MNR	4.66E+01	MNR	MNR	1.06E-02	1.44E-01	5.04E+00	-1.03E+01
Non-hazardous waste	kg	1.06E+03	2.91E+00	1.07E+01	1.07E+03	2.95E+00	3.72E+00	MNR	MNR	MNR	MNR	MNR	3.61E+03	MNR	MNR	1.96E-01	4.51E+00	2.96E+01	-2.30E+02
Radioactive waste	kg	4.48E-03	1.96E-05	7.44E-05	4.57E-03	2.01E-05	4.06E-07	MNR	MNR	MNR	MNR	MNR	1.31E-01	MNR	MNR	1.33E-06	4.27E-06	3.32E-06	-7.40E-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	1.22E+01	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	2.80E+00	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	1.47E+00	1.47E+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

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	2.77E+02	7.01E+00	7.21E+00	2.91E+02	6.45E+00	1.16E-01	MNR	MNR	MNR	MNR	MNR	7.92E+02	MNR	MNR	4.29E-01	6.98E+00	5.03E+00	-4.71E+01
Ozone depletion Pot.	kg CFC ₁₁ e	4.60E-05	8.25E-08	1.85E-07	4.63E-05	7.64E-08	1.43E-09	MNR	MNR	MNR	MNR	MNR	1.22E-05	MNR	MNR	5.08E-09	5.06E-09	6.52E-09	-1.88E-07
Acidification	kg SO ₂ e	2.34E+00	4.48E-02	2.09E-02	2.40E+00	1.69E-02	7.01E-04	MNR	MNR	MNR	MNR	MNR	3.97E+00	MNR	MNR	1.12E-03	3.78E-03	3.24E-03	-8.02E-01
Eutrophication	kg PO ₄ ³ e	4.84E-01	6.93E-03	1.40E-02	5.05E-01	4.11E-03	2.35E-04	MNR	MNR	MNR	MNR	MNR	5.13E-01	MNR	MNR	2.74E-04	7.75E-04	1.14E-03	-4.22E-02
POCP ("smog")	kg C ₂ H ₄ e	1.76E-01	2.82E-03	2.24E-03	1.81E-01	1.50E-03	4.99E-05	MNR	MNR	MNR	MNR	MNR	2.16E-01	MNR	MNR	1.00E-04	2.32E-04	2.61E-04	-3.97E-02
ADP-elements	kg Sbe	2.61E-02	1.69E-05	4.10E-05	2.61E-02	1.76E-05	2.18E-07	MNR	MNR	MNR	MNR	MNR	1.07E-02	MNR	MNR	1.17E-06	1.85E-05	2.67E-06	-9.17E-03
ADP-fossil	MJ	3.16E+03	9.81E+01	9.81E+01	3.36E+03	9.28E+01	8.10E-01	MNR	MNR	MNR	MNR	MNR	9.46E+03	MNR	MNR	6.17E+00	4.85E+00	7.82E+00	-4.41E+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
VGP726 LED6-4S/740 DM10	542	4.0	139.0	0.081	0.081	0.061	0.061	0.045	64.4	48.5	48.5	35.8
VGP726 LED7-4S/740 DM10	633	4.4	143.9	0.091	0.091	0.068	0.068	0.05	72.3	54.1	54.1	39.8
VGP726 LED8-4S/740 DM10	723	5.0	147.6	0.101	0.101	0.076	0.076	0.056	80.3	60.4	60.4	44.5
VGP726 LED9-4S/740 DM10	813	5.3	153.4	0.11	0.11	0.083	0.083	0.061	87.5	66.0	66.0	48.5
VGP726 LED10-4S/740 DM10	903	6.0	155.7	0.12	0.12	0.09	0.09	0.066	95.4	71.5	71.5	52.5
VGP726 LED12-4S/740 DM10	1084	7.0	159.4	0.14	0.14	0.105	0.105	0.077	111.3	83.5	83.5	61.2
VGP726 LED14-4S/740 DM10	1265	8.0	160.1	0.163	0.163	0.122	0.122	0.09	129.6	97.0	97.0	71.5
VGP726 LED16-4S/740 DM10	1445	9.0	160.6	0.186	0.186	0.14	0.14	0.102	147.9	111.3	111.3	81.1
VGP726 LED18-4S/740 DM10	1626	10.0	161.0	0.209	0.209	0.157	0.157	0.115	166.2	124.8	124.8	91.4
VGP726 LED20-4S/740 DM10	1806	11.0	161.2	0.231	0.231	0.173	0.173	0.127	183.6	137.5	137.5	101.0
VGP726 LED22-4S/740 DM10	1987	12.0	161.5	0.254	0.254	0.191	0.191	0.14	201.9	151.8	151.8	111.3
VGP726 LED25-4S/740 DM10	2257	14.0	160.1	0.291	0.291	0.218	0.218	0.16	231.3	173.3	173.3	127.2
VGP726 LED27-4S/740 DM10	2437	15.0	159.3	0.316	0.316	0.237	0.237	0.174	251.2	188.4	188.4	138.3
VGP726 LED30-4S/740 DM10	2707	17.0	158.3	0.353	0.353	0.265	0.265	0.194	280.6	210.7	210.7	154.2
VGP726 LED35-4S/740 DM10	3154	20.0	156.1	0.417	0.417	0.313	0.313	0.229	331.5	248.8	248.8	182.1
VGP726 LED40-4S/740 DM10	3600	23.0	154.5	0.481	0.481	0.361	0.361	0.265	382.4	287.0	287.0	210.7
VGP726 LED45-4S/740 DM10	4043	26.0	152.6	0.548	0.548	0.411	0.411	0.301	435.7	326.7	326.7	239.3

VGP726 LED50-4S/740 DM10	4498	27.0	166.6	0.558	0.558	0.419	0.419	0.307	443.6	333.1	333.1	244.1
VGP726 LED55-4S/740 DM10	4942	30.0	165.8	0.616	0.616	0.462	0.462	0.339	489.7	367.3	367.3	269.5
VGP726 LED60-4S/740 DM10	5384	33.0	164.6	0.676	0.676	0.507	0.507	0.372	537.4	403.1	403.1	295.7
VGP726 LED65-4S/740 DM10	5824	36.0	162.7	0.74	0.74	0.555	0.555	0.407	588.3	441.2	441.2	323.6
VGP726 LED70-4S/740 DM10	6263	39.0	161.4	0.802	0.802	0.602	0.602	0.441	637.6	478.6	478.6	350.6
VGP726 LED75-4S/740 DM10	6699	42.0	159.9	0.866	0.866	0.649	0.649	0.476	688.5	516.0	516.0	378.4
VGP726 LED80-4S/740 DM10	7134	45.0	158.2	0.932	0.932	0.699	0.699	0.513	740.9	555.7	555.7	407.8
VGP726 LED85-4S/740 DM10	7565	48.0	156.6	0.998	0.998	0.748	0.748	0.549	793.4	594.7	594.7	436.5
VGP726 LED90-4S/740 DM10	7994	52.0	155.2	1.064	1.064	0.798	0.798	0.585	845.9	634.4	634.4	465.1
VGP726 LED95-4S/740 DM10	8420	55.0	153.6	1.132	1.132	0.849	0.849	0.623	899.9	675.0	675.0	495.3
VGP726 LED100-4S/740 DM10	8842	58.0	152.2	1.2	1.2	0.9	0.9	0.66	954.0	715.5	715.5	524.7
VGP726 LED6-4S/730 DM10	542	4.0	132.2	0.085	0.085	0.064	0.064	0.047	67.6	50.9	50.9	37.4
VGP726 LED7-4S/730 DM10	632	4.6	137.4	0.095	0.095	0.071	0.071	0.052	75.5	56.4	56.4	41.3
VGP726 LED8-4S/730 DM10	723	5.0	141.8	0.105	0.105	0.079	0.079	0.058	83.5	62.8	62.8	46.1
VGP726 LED9-4S/730 DM10	813	5.6	145.2	0.116	0.116	0.087	0.087	0.064	92.2	69.2	69.2	50.9
VGP726 LED10-4S/730 DM10	903	6.0	150.5	0.124	0.124	0.093	0.093	0.068	98.6	73.9	73.9	54.1
VGP726 LED12-4S/730 DM10	1084	7.0	150.6	0.149	0.149	0.112	0.112	0.082	118.5	89.0	89.0	65.2
VGP726 LED14-4S/730 DM10	1265	8.0	150.6	0.174	0.174	0.131	0.131	0.096	138.3	104.1	104.1	76.3
VGP726 LED16-4S/730 DM10	1445	10.0	150.5	0.198	0.198	0.149	0.149	0.109	157.4	118.5	118.5	86.7
VGP726 LED18-4S/730 DM10	1626	11.0	152.0	0.221	0.221	0.166	0.166	0.122	175.7	132.0	132.0	97.0
VGP726 LED20-4S/730 DM10	1806	12.0	151.8	0.246	0.246	0.184	0.184	0.135	195.6	146.3	146.3	107.3
VGP726 LED22-4S/730 DM10	1986	13.0	150.5	0.273	0.273	0.205	0.205	0.15	217.0	163.0	163.0	119.2
VGP726 LED25-4S/730 DM10	2257	15.0	149.5	0.312	0.312	0.234	0.234	0.172	248.0	186.0	186.0	136.7
VGP726 LED27-4S/730 DM10	2437	16.0	148.6	0.339	0.339	0.254	0.254	0.186	269.5	201.9	201.9	147.9

VGP726 LED30-4S/730 DM10	2706	18.0	147.9	0.378	0.378	0.283	0.283	0.208	300.5	225.0	225.0	165.4
VGP726 LED35-4S/730 DM10	3152	22.0	146.6	0.444	0.444	0.333	0.333	0.244	353.0	264.7	264.7	194.0
VGP726 LED40-4S/730 DM10	3597	25.0	143.9	0.517	0.517	0.388	0.388	0.284	411.0	308.5	308.5	225.8
VGP726 LED45-4S/730 DM10	4040	28.0	141.8	0.589	0.589	0.442	0.442	0.324	468.3	351.4	351.4	257.6
VGP726 LED50-4S/730 DM10	4494	29.0	156.0	0.595	0.595	0.446	0.446	0.327	473.0	354.6	354.6	260.0
VGP726 LED55-4S/730 DM10	4937	32.0	154.8	0.659	0.659	0.494	0.494	0.362	523.9	392.7	392.7	287.8
VGP726 LED60-4S/730 DM10	5378	35.0	153.2	0.725	0.725	0.544	0.544	0.399	576.4	432.5	432.5	317.2
VGP726 LED65-4S/730 DM10	5817	38.0	151.9	0.791	0.791	0.593	0.593	0.435	628.8	471.4	471.4	345.8
VGP726 LED70-4S/730 DM10	6254	42.0	150.3	0.86	0.86	0.645	0.645	0.473	683.7	512.8	512.8	376.0
VGP726 LED75-4S/730 DM10	6688	45.0	148.6	0.93	0.93	0.698	0.698	0.512	739.4	554.9	554.9	407.0
VGP726 LED80-4S/730 DM10	7120	48.0	147.1	1.0	1.0	0.75	0.75	0.55	795.0	596.2	596.2	437.3
VGP726 LED85-4S/730 DM10	7548	52.0	145.7	1.07	1.07	0.802	0.802	0.589	850.7	637.6	637.6	468.3
VGP726 LED90-4S/730 DM10	7974	55.0	144.2	1.143	1.143	0.857	0.857	0.629	908.7	681.3	681.3	500.1
VGP726 LED95-4S/730 DM10	8395	59.0	142.8	1.215	1.215	0.911	0.911	0.668	965.9	724.2	724.2	531.1
VGP726 LED100-4S/730 DM10	8813	62.0	141.2	1.289	1.289	0.967	0.967	0.709	1024.8	768.8	768.8	563.7
VGP726 LED5-4S/727 DM10	452	3.7	122.2	0.076	0.076	0.057	0.057	0.042	60.4	45.3	45.3	33.4
VGP726 LED6-4S/727 DM10	542	4.3	126.0	0.089	0.089	0.067	0.067	0.049	70.8	53.3	53.3	39.0
VGP726 LED7-4S/727 DM10	632	5.0	131.7	0.099	0.099	0.074	0.074	0.054	78.7	58.8	58.8	42.9
VGP726 LED8-4S/727 DM10	723	5.3	136.4	0.11	0.11	0.083	0.083	0.061	87.5	66.0	66.0	48.5
VGP726 LED9-4S/727 DM10	813	6.0	140.2	0.12	0.12	0.09	0.09	0.066	95.4	71.5	71.5	52.5
VGP726 LED10-4S/727 DM10	903	6.4	141.1	0.132	0.132	0.099	0.099	0.073	104.9	78.7	78.7	58.0
VGP726 LED12-4S/727 DM10	1084	7.6	142.6	0.157	0.157	0.118	0.118	0.086	124.8	93.8	93.8	68.4
VGP726 LED14-4S/727 DM10	1264	9.0	143.6	0.182	0.182	0.137	0.137	0.1	144.7	108.9	108.9	79.5
VGP726 LED16-4S/727 DM10	1445	10.0	143.1	0.209	0.209	0.157	0.157	0.115	166.2	124.8	124.8	91.4

VGP726 LED18-4S/727 DM10	1625	11.0	143.8	0.233	0.233	0.175	0.175	0.128	185.2	139.1	139.1	101.8
VGP726 LED20-4S/727 DM10	1805	13.0	143.3	0.26	0.26	0.195	0.195	0.143	206.7	155.0	155.0	113.7
VGP726 LED22-4S/727 DM10	1986	14.0	142.9	0.287	0.287	0.215	0.215	0.158	228.2	170.9	170.9	125.6
VGP726 LED25-4S/727 DM10	2256	16.0	141.9	0.329	0.329	0.247	0.247	0.181	261.6	196.4	196.4	143.9
VGP726 LED27-4S/727 DM10	2435	17.0	141.6	0.355	0.355	0.266	0.266	0.195	282.2	211.5	211.5	155.0
VGP726 LED30-4S/727 DM10	2703	19.0	140.8	0.397	0.397	0.298	0.298	0.218	315.6	236.9	236.9	173.3
VGP726 LED35-4S/727 DM10	3147	23.0	139.2	0.467	0.467	0.35	0.35	0.257	371.3	278.2	278.2	204.3
VGP726 LED40-4S/727 DM10	3590	26.0	137.0	0.541	0.541	0.406	0.406	0.298	430.1	322.8	322.8	236.9
VGP726 LED45-4S/727 DM10	4031	30.0	135.3	0.616	0.616	0.462	0.462	0.339	489.7	367.3	367.3	269.5
VGP726 LED50-4S/727 DM10	4486	30.0	147.6	0.628	0.628	0.471	0.471	0.345	499.3	374.4	374.4	274.3
VGP726 LED55-4S/727 DM10	4927	34.0	146.6	0.694	0.694	0.52	0.52	0.382	551.7	413.4	413.4	303.7
VGP726 LED60-4S/727 DM10	5365	37.0	145.4	0.762	0.762	0.572	0.572	0.419	605.8	454.7	454.7	333.1
VGP726 LED65-4S/727 DM10	5801	40.0	143.9	0.833	0.833	0.625	0.625	0.458	662.2	496.9	496.9	364.1
VGP726 LED70-4S/727 DM10	6235	44.0	142.4	0.905	0.905	0.679	0.679	0.498	719.5	539.8	539.8	395.9
VGP726 LED75-4S/727 DM10	6667	47.0	141.0	0.977	0.977	0.733	0.733	0.537	776.7	582.7	582.7	426.9
VGP726 LED80-4S/727 DM10	7095	51.0	139.7	1.05	1.05	0.788	0.788	0.578	834.8	626.5	626.5	459.5
VGP726 LED85-4S/727 DM10	7520	54.0	138.5	1.122	1.122	0.842	0.842	0.617	892.0	669.4	669.4	490.5
VGP726 LED90-4S/727 DM10	7942	58.0	137.2	1.196	1.196	0.897	0.897	0.658	950.8	713.1	713.1	523.1
VGP726 LED95-4S/727 DM10	8361	62.0	136.0	1.271	1.271	0.953	0.953	0.699	1010.4	757.6	757.6	555.7
VGP726 LED100-4S/727 DM10	8775	65.0	134.6	1.347	1.347	1.01	1.01	0.741	1070.9	803.0	803.0	589.1
VGP726 LED5-4S/830 DM10	452	3.8	118.9	0.079	0.079	0.059	0.059	0.043	62.8	46.9	46.9	34.2
VGP726 LED6-4S/830 DM10	542	4.4	123.2	0.091	0.091	0.068	0.068	0.05	72.3	54.1	54.1	39.8
VGP726 LED7-4S/830 DM10	632	5.0	129.0	0.101	0.101	0.076	0.076	0.056	80.3	60.4	60.4	44.5
VGP726 LED8-4S/830 DM10	723	5.5	131.5	0.114	0.114	0.086	0.086	0.063	90.6	68.4	68.4	50.1

VGP726 LED9-4S/830 DM10	813	6.0	135.5	0.124	0.124	0.093	0.093	0.068	98.6	73.9	73.9	54.1
VGP726 LED10-4S/830 DM10	903	6.6	136.8	0.136	0.136	0.102	0.102	0.075	108.1	81.1	81.1	59.6
VGP726 LED12-4S/830 DM10	1084	8.0	139.0	0.161	0.161	0.121	0.121	0.089	128.0	96.2	96.2	70.8
VGP726 LED14-4S/830 DM10	1264	9.0	138.9	0.188	0.188	0.141	0.141	0.103	149.5	112.1	112.1	81.9
VGP726 LED16-4S/830 DM10	1445	10.0	138.9	0.215	0.215	0.161	0.161	0.118	170.9	128.0	128.0	93.8
VGP726 LED18-4S/830 DM10	1625	12.0	138.9	0.242	0.242	0.181	0.181	0.133	192.4	143.9	143.9	105.7
VGP726 LED20-4S/830 DM10	1805	13.0	138.8	0.269	0.269	0.202	0.202	0.148	213.9	160.6	160.6	117.7
VGP726 LED22-4S/830 DM10	1985	14.0	137.8	0.298	0.298	0.223	0.223	0.164	236.9	177.3	177.3	130.4
VGP726 LED25-4S/830 DM10	2255	16.0	137.5	0.339	0.339	0.254	0.254	0.186	269.5	201.9	201.9	147.9
VGP726 LED27-4S/830 DM10	2434	18.0	136.7	0.368	0.368	0.276	0.276	0.202	292.6	219.4	219.4	160.6
VGP726 LED30-4S/830 DM10	2702	20.0	135.8	0.411	0.411	0.308	0.308	0.226	326.7	244.9	244.9	179.7
VGP726 LED35-4S/830 DM10	3146	23.0	134.4	0.483	0.483	0.362	0.362	0.266	384.0	287.8	287.8	211.5
VGP726 LED40-4S/830 DM10	3588	27.0	132.4	0.56	0.56	0.42	0.42	0.308	445.2	333.9	333.9	244.9
VGP726 LED45-4S/830 DM10	4028	31.0	130.8	0.636	0.636	0.477	0.477	0.35	505.6	379.2	379.2	278.2
VGP726 LED50-4S/830 DM10	4484	31.0	142.8	0.649	0.649	0.487	0.487	0.357	516.0	387.2	387.2	283.8
VGP726 LED55-4S/830 DM10	4924	35.0	141.5	0.719	0.719	0.539	0.539	0.395	571.6	428.5	428.5	314.0
VGP726 LED60-4S/830 DM10	5361	38.0	140.0	0.791	0.791	0.593	0.593	0.435	628.8	471.4	471.4	345.8
VGP726 LED65-4S/830 DM10	5797	42.0	138.7	0.864	0.864	0.648	0.648	0.475	686.9	515.2	515.2	377.6
VGP726 LED70-4S/830 DM10	6230	45.0	137.2	0.938	0.938	0.704	0.704	0.516	745.7	559.7	559.7	410.2
VGP726 LED75-4S/830 DM10	6660	49.0	135.9	1.012	1.012	0.759	0.759	0.557	804.5	603.4	603.4	442.8
VGP726 LED80-4S/830 DM10	7086	53.0	134.5	1.089	1.089	0.817	0.817	0.599	865.8	649.5	649.5	476.2
VGP726 LED85-4S/830 DM10	7510	56.0	133.4	1.163	1.163	0.872	0.872	0.64	924.6	693.2	693.2	508.8
VGP726 LED90-4S/830 DM10	7930	60.0	131.9	1.242	1.242	0.931	0.931	0.683	987.4	740.1	740.1	543.0
VGP726 LED95-4S/830 DM10	8346	64.0	130.8	1.318	1.318	0.989	0.989	0.725	1047.8	786.3	786.3	576.4

VGP726 LED100-4S/830 DM10	8758	68.0	129.2	1.401	1.401	1.051	1.051	0.771	1113.8	835.5	835.5	612.9
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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.*

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
VGP726 LED6-4S/740 DM10	542	4.0	139.0	0.081	0.052	0.039	0.039	0.029	41.3	31.0	31.0	23.1
VGP726 LED7-4S/740 DM10	633	4.4	143.9	0.091	0.05	0.038	0.038	0.028	39.8	30.2	30.2	22.3
VGP726 LED8-4S/740 DM10	723	5.0	147.6	0.101	0.049	0.037	0.037	0.027	39.0	29.4	29.4	21.5
VGP726 LED9-4S/740 DM10	813	5.3	153.4	0.11	0.047	0.035	0.035	0.026	37.4	27.8	27.8	20.7
VGP726 LED10-4S/740 DM10	903	6.0	155.7	0.12	0.047	0.035	0.035	0.026	37.4	27.8	27.8	20.7

VGP726 LED12-4S/740 DM10	1084	7.0	159.4	0.14	0.045	0.034	0.034	0.025	35.8	27.0	27.0	19.9
VGP726 LED14-4S/740 DM10	1265	8.0	160.1	0.163	0.045	0.034	0.034	0.025	35.8	27.0	27.0	19.9
VGP726 LED16-4S/740 DM10	1445	9.0	160.6	0.186	0.045	0.034	0.034	0.025	35.8	27.0	27.0	19.9
VGP726 LED18-4S/740 DM10	1626	10.0	161.0	0.209	0.045	0.034	0.034	0.025	35.8	27.0	27.0	19.9
VGP726 LED20-4S/740 DM10	1806	11.0	161.2	0.231	0.045	0.034	0.034	0.025	35.8	27.0	27.0	19.9
VGP726 LED22-4S/740 DM10	1987	12.0	161.5	0.254	0.045	0.034	0.034	0.025	35.8	27.0	27.0	19.9
VGP726 LED25-4S/740 DM10	2257	14.0	160.1	0.291	0.045	0.034	0.034	0.025	35.8	27.0	27.0	19.9
VGP726 LED27-4S/740 DM10	2437	15.0	159.3	0.316	0.046	0.035	0.035	0.025	36.6	27.8	27.8	19.9
VGP726 LED30-4S/740 DM10	2707	17.0	158.3	0.353	0.046	0.035	0.035	0.025	36.6	27.8	27.8	19.9
VGP726 LED35-4S/740 DM10	3154	20.0	156.1	0.417	0.046	0.035	0.035	0.025	36.6	27.8	27.8	19.9
VGP726 LED40-4S/740 DM10	3600	23.0	154.5	0.481	0.047	0.035	0.035	0.026	37.4	27.8	27.8	20.7
VGP726 LED45-4S/740 DM10	4043	26.0	152.6	0.548	0.048	0.036	0.036	0.026	38.2	28.6	28.6	20.7
VGP726 LED50-4S/740 DM10	4498	27.0	166.6	0.558	0.044	0.033	0.033	0.024	35.0	26.2	26.2	19.1
VGP726 LED55-4S/740 DM10	4942	30.0	165.8	0.616	0.044	0.033	0.033	0.024	35.0	26.2	26.2	19.1
VGP726 LED60-4S/740 DM10	5384	33.0	164.6	0.676	0.044	0.033	0.033	0.024	35.0	26.2	26.2	19.1
VGP726 LED65-4S/740 DM10	5824	36.0	162.7	0.74	0.044	0.033	0.033	0.024	35.0	26.2	26.2	19.1
VGP726 LED70-4S/740 DM10	6263	39.0	161.4	0.802	0.045	0.034	0.034	0.025	35.8	27.0	27.0	19.9
VGP726 LED75-4S/740 DM10	6699	42.0	159.9	0.866	0.045	0.034	0.034	0.025	35.8	27.0	27.0	19.9
VGP726 LED80-4S/740 DM10	7134	45.0	158.2	0.932	0.046	0.035	0.035	0.025	36.6	27.8	27.8	19.9
VGP726 LED85-4S/740 DM10	7565	48.0	156.6	0.998	0.046	0.035	0.035	0.025	36.6	27.8	27.8	19.9
VGP726 LED90-4S/740 DM10	7994	52.0	155.2	1.064	0.047	0.035	0.035	0.026	37.4	27.8	27.8	20.7
VGP726 LED95-4S/740 DM10	8420	55.0	153.6	1.132	0.048	0.036	0.036	0.026	38.2	28.6	28.6	20.7
VGP726 LED100-4S/740 DM10	8842	58.0	152.2	1.2	0.048	0.036	0.036	0.026	38.2	28.6	28.6	20.7
VGP726 LED6-4S/730 DM10	542	4.0	132.2	0.085	0.055	0.041	0.041	0.03	43.7	32.6	32.6	23.8

VGP726 LED7-4S/730 DM10	632	4.6	137.4	0.095	0.053	0.04	0.04	0.029	42.1	31.8	31.8	23.1
VGP726 LED8-4S/730 DM10	723	5.0	141.8	0.105	0.051	0.038	0.038	0.028	40.5	30.2	30.2	22.3
VGP726 LED9-4S/730 DM10	813	5.6	145.2	0.116	0.05	0.038	0.038	0.028	39.8	30.2	30.2	22.3
VGP726 LED10-4S/730 DM10	903	6.0	150.5	0.124	0.048	0.036	0.036	0.026	38.2	28.6	28.6	20.7
VGP726 LED12-4S/730 DM10	1084	7.0	150.6	0.149	0.048	0.036	0.036	0.026	38.2	28.6	28.6	20.7
VGP726 LED14-4S/730 DM10	1265	8.0	150.6	0.174	0.048	0.036	0.036	0.026	38.2	28.6	28.6	20.7
VGP726 LED16-4S/730 DM10	1445	10.0	150.5	0.198	0.048	0.036	0.036	0.026	38.2	28.6	28.6	20.7
VGP726 LED18-4S/730 DM10	1626	11.0	152.0	0.221	0.048	0.036	0.036	0.026	38.2	28.6	28.6	20.7
VGP726 LED20-4S/730 DM10	1806	12.0	151.8	0.246	0.048	0.036	0.036	0.026	38.2	28.6	28.6	20.7
VGP726 LED22-4S/730 DM10	1986	13.0	150.5	0.273	0.048	0.036	0.036	0.026	38.2	28.6	28.6	20.7
VGP726 LED25-4S/730 DM10	2257	15.0	149.5	0.312	0.048	0.036	0.036	0.026	38.2	28.6	28.6	20.7
VGP726 LED27-4S/730 DM10	2437	16.0	148.6	0.339	0.049	0.037	0.037	0.027	39.0	29.4	29.4	21.5
VGP726 LED30-4S/730 DM10	2706	18.0	147.9	0.378	0.049	0.037	0.037	0.027	39.0	29.4	29.4	21.5
VGP726 LED35-4S/730 DM10	3152	22.0	146.6	0.444	0.049	0.037	0.037	0.027	39.0	29.4	29.4	21.5
VGP726 LED40-4S/730 DM10	3597	25.0	143.9	0.517	0.05	0.038	0.038	0.028	39.8	30.2	30.2	22.3
VGP726 LED45-4S/730 DM10	4040	28.0	141.8	0.589	0.051	0.038	0.038	0.028	40.5	30.2	30.2	22.3
VGP726 LED50-4S/730 DM10	4494	29.0	156.0	0.595	0.046	0.035	0.035	0.025	36.6	27.8	27.8	19.9
VGP726 LED55-4S/730 DM10	4937	32.0	154.8	0.659	0.047	0.035	0.035	0.026	37.4	27.8	27.8	20.7
VGP726 LED60-4S/730 DM10	5378	35.0	153.2	0.725	0.047	0.035	0.035	0.026	37.4	27.8	27.8	20.7
VGP726 LED65-4S/730 DM10	5817	38.0	151.9	0.791	0.047	0.035	0.035	0.026	37.4	27.8	27.8	20.7
VGP726 LED70-4S/730 DM10	6254	42.0	150.3	0.86	0.048	0.036	0.036	0.026	38.2	28.6	28.6	20.7
VGP726 LED75-4S/730 DM10	6688	45.0	148.6	0.93	0.048	0.036	0.036	0.026	38.2	28.6	28.6	20.7
VGP726 LED80-4S/730 DM10	7120	48.0	147.1	1.0	0.049	0.037	0.037	0.027	39.0	29.4	29.4	21.5
VGP726 LED85-4S/730 DM10	7548	52.0	145.7	1.07	0.049	0.037	0.037	0.027	39.0	29.4	29.4	21.5

VGP726 LED90-4S/730 DM10	7974	55.0	144.2	1.143	0.05	0.038	0.038	0.028	39.8	30.2	30.2	22.3
VGP726 LED95-4S/730 DM10	8395	59.0	142.8	1.215	0.051	0.038	0.038	0.028	40.5	30.2	30.2	22.3
VGP726 LED100-4S/730 DM10	8813	62.0	141.2	1.289	0.052	0.039	0.039	0.029	41.3	31.0	31.0	23.1
VGP726 LED5-4S/727 DM10	452	3.7	122.2	0.076	0.059	0.044	0.044	0.032	46.9	35.0	35.0	25.4
VGP726 LED6-4S/727 DM10	542	4.3	126.0	0.089	0.057	0.043	0.043	0.031	45.3	34.2	34.2	24.6
VGP726 LED7-4S/727 DM10	632	5.0	131.7	0.099	0.055	0.041	0.041	0.03	43.7	32.6	32.6	23.8
VGP726 LED8-4S/727 DM10	723	5.3	136.4	0.11	0.053	0.04	0.04	0.029	42.1	31.8	31.8	23.1
VGP726 LED9-4S/727 DM10	813	6.0	140.2	0.12	0.052	0.039	0.039	0.029	41.3	31.0	31.0	23.1
VGP726 LED10-4S/727 DM10	903	6.4	141.1	0.132	0.051	0.038	0.038	0.028	40.5	30.2	30.2	22.3
VGP726 LED12-4S/727 DM10	1084	7.6	142.6	0.157	0.051	0.038	0.038	0.028	40.5	30.2	30.2	22.3
VGP726 LED14-4S/727 DM10	1264	9.0	143.6	0.182	0.05	0.038	0.038	0.028	39.8	30.2	30.2	22.3
VGP726 LED16-4S/727 DM10	1445	10.0	143.1	0.209	0.051	0.038	0.038	0.028	40.5	30.2	30.2	22.3
VGP726 LED18-4S/727 DM10	1625	11.0	143.8	0.233	0.05	0.038	0.038	0.028	39.8	30.2	30.2	22.3
VGP726 LED20-4S/727 DM10	1805	13.0	143.3	0.26	0.05	0.038	0.038	0.028	39.8	30.2	30.2	22.3
VGP726 LED22-4S/727 DM10	1986	14.0	142.9	0.287	0.051	0.038	0.038	0.028	40.5	30.2	30.2	22.3
VGP726 LED25-4S/727 DM10	2256	16.0	141.9	0.329	0.051	0.038	0.038	0.028	40.5	30.2	30.2	22.3
VGP726 LED27-4S/727 DM10	2435	17.0	141.6	0.355	0.051	0.038	0.038	0.028	40.5	30.2	30.2	22.3
VGP726 LED30-4S/727 DM10	2703	19.0	140.8	0.397	0.051	0.038	0.038	0.028	40.5	30.2	30.2	22.3
VGP726 LED35-4S/727 DM10	3147	23.0	139.2	0.467	0.052	0.039	0.039	0.029	41.3	31.0	31.0	23.1
VGP726 LED40-4S/727 DM10	3590	26.0	137.0	0.541	0.052	0.039	0.039	0.029	41.3	31.0	31.0	23.1
VGP726 LED45-4S/727 DM10	4031	30.0	135.3	0.616	0.054	0.041	0.041	0.03	42.9	32.6	32.6	23.8
VGP726 LED50-4S/727 DM10	4486	30.0	147.6	0.628	0.049	0.037	0.037	0.027	39.0	29.4	29.4	21.5
VGP726 LED55-4S/727 DM10	4927	34.0	146.6	0.694	0.049	0.037	0.037	0.027	39.0	29.4	29.4	21.5
VGP726 LED60-4S/727 DM10	5365	37.0	145.4	0.762	0.05	0.038	0.038	0.028	39.8	30.2	30.2	22.3

VGP726 LED65-4S/727 DM10	5801	40.0	143.9	0.833	0.05	0.038	0.038	0.028	39.8	30.2	30.2	22.3
VGP726 LED70-4S/727 DM10	6235	44.0	142.4	0.905	0.051	0.038	0.038	0.028	40.5	30.2	30.2	22.3
VGP726 LED75-4S/727 DM10	6667	47.0	141.0	0.977	0.051	0.038	0.038	0.028	40.5	30.2	30.2	22.3
VGP726 LED80-4S/727 DM10	7095	51.0	139.7	1.05	0.051	0.038	0.038	0.028	40.5	30.2	30.2	22.3
VGP726 LED85-4S/727 DM10	7520	54.0	138.5	1.122	0.053	0.04	0.04	0.029	42.1	31.8	31.8	23.1
VGP726 LED90-4S/727 DM10	7942	58.0	137.2	1.196	0.053	0.04	0.04	0.029	42.1	31.8	31.8	23.1
VGP726 LED95-4S/727 DM10	8361	62.0	136.0	1.271	0.053	0.04	0.04	0.029	42.1	31.8	31.8	23.1
VGP726 LED100-4S/727 DM10	8775	65.0	134.6	1.347	0.054	0.041	0.041	0.03	42.9	32.6	32.6	23.8
VGP726 LED5-4S/830 DM10	452	3.8	118.9	0.079	0.061	0.046	0.046	0.034	48.5	36.6	36.6	27.0
VGP726 LED6-4S/830 DM10	542	4.4	123.2	0.091	0.059	0.044	0.044	0.032	46.9	35.0	35.0	25.4
VGP726 LED7-4S/830 DM10	632	5.0	129.0	0.101	0.056	0.042	0.042	0.031	44.5	33.4	33.4	24.6
VGP726 LED8-4S/830 DM10	723	5.5	131.5	0.114	0.055	0.041	0.041	0.03	43.7	32.6	32.6	23.8
VGP726 LED9-4S/830 DM10	813	6.0	135.5	0.124	0.053	0.04	0.04	0.029	42.1	31.8	31.8	23.1
VGP726 LED10-4S/830 DM10	903	6.6	136.8	0.136	0.053	0.04	0.04	0.029	42.1	31.8	31.8	23.1
VGP726 LED12-4S/830 DM10	1084	8.0	139.0	0.161	0.052	0.039	0.039	0.029	41.3	31.0	31.0	23.1
VGP726 LED14-4S/830 DM10	1264	9.0	138.9	0.188	0.052	0.039	0.039	0.029	41.3	31.0	31.0	23.1
VGP726 LED16-4S/830 DM10	1445	10.0	138.9	0.215	0.052	0.039	0.039	0.029	41.3	31.0	31.0	23.1
VGP726 LED18-4S/830 DM10	1625	12.0	138.9	0.242	0.052	0.039	0.039	0.029	41.3	31.0	31.0	23.1
VGP726 LED20-4S/830 DM10	1805	13.0	138.8	0.269	0.052	0.039	0.039	0.029	41.3	31.0	31.0	23.1
VGP726 LED22-4S/830 DM10	1985	14.0	137.8	0.298	0.052	0.039	0.039	0.029	41.3	31.0	31.0	23.1
VGP726 LED25-4S/830 DM10	2255	16.0	137.5	0.339	0.053	0.04	0.04	0.029	42.1	31.8	31.8	23.1
VGP726 LED27-4S/830 DM10	2434	18.0	136.7	0.368	0.053	0.04	0.04	0.029	42.1	31.8	31.8	23.1
VGP726 LED30-4S/830 DM10	2702	20.0	135.8	0.411	0.053	0.04	0.04	0.029	42.1	31.8	31.8	23.1
VGP726 LED35-4S/830 DM10	3146	23.0	134.4	0.483	0.054	0.041	0.041	0.03	42.9	32.6	32.6	23.8

VGP726 LED40-4S/830 DM10	3588	27.0	132.4	0.56	0.055	0.041	0.041	0.03	43.7	32.6	32.6	23.8
VGP726 LED45-4S/830 DM10	4028	31.0	130.8	0.636	0.055	0.041	0.041	0.03	43.7	32.6	32.6	23.8
VGP726 LED50-4S/830 DM10	4484	31.0	142.8	0.649	0.051	0.038	0.038	0.028	40.5	30.2	30.2	22.3
VGP726 LED55-4S/830 DM10	4924	35.0	141.5	0.719	0.051	0.038	0.038	0.028	40.5	30.2	30.2	22.3
VGP726 LED60-4S/830 DM10	5361	38.0	140.0	0.791	0.051	0.038	0.038	0.028	40.5	30.2	30.2	22.3
VGP726 LED65-4S/830 DM10	5797	42.0	138.7	0.864	0.052	0.039	0.039	0.029	41.3	31.0	31.0	23.1
VGP726 LED70-4S/830 DM10	6230	45.0	137.2	0.938	0.053	0.04	0.04	0.029	42.1	31.8	31.8	23.1
VGP726 LED75-4S/830 DM10	6660	49.0	135.9	1.012	0.054	0.041	0.041	0.03	42.9	32.6	32.6	23.8
VGP726 LED80-4S/830 DM10	7086	53.0	134.5	1.089	0.053	0.04	0.04	0.029	42.1	31.8	31.8	23.1
VGP726 LED85-4S/830 DM10	7510	56.0	133.4	1.163	0.055	0.041	0.041	0.03	43.7	32.6	32.6	23.8
VGP726 LED90-4S/830 DM10	7930	60.0	131.9	1.242	0.055	0.041	0.041	0.03	43.7	32.6	32.6	23.8
VGP726 LED95-4S/830 DM10	8346	64.0	130.8	1.318	0.055	0.041	0.041	0.03	43.7	32.6	32.6	23.8
VGP726 LED100-4S/830 DM10	8758	68.0	129.2	1.401	0.056	0.042	0.042	0.031	44.5	33.4	33.4	24.6

*** 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

ASSUMPTION

This EPD is generated assuming 50% power from solar energy via PV panel and 50% from grid as this is a Hybrid solar product when run at 100%. B6 value can change based on the use location / dim profile / Sensor / PV panel size / battery size because this is a configurable product.

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 = 3.30E-01) and then multiplying for the Finland value from the same table (FINLAND = 1.50E-01).

Thus, the calculation of this example would be:

New B6 GWP tot for Finland = (4.06E-02 / 3.30E-01) x 1.5E-01 = 1.8E-02

Country	GWP tot (kg CO2 eq. per kwh)
AFRICA	7.30E-01
APAC	9.50E-01
AUSTRALIA	9.20E-01
AUSTRIA	2.30E-01
BELGIUM	2.00E-01
CHINA	1.0E+00
DENMARK	1.50E-01
EU	3.30E-01
FINLAND	1.50E-01
FRANCE	9.00E-02
GERMANY	9.90E-01
HUNGARY	3.70 -01
INDIA	1.50E+00
IRELAND	3.50E-01
ITALY	3.50E-01
LATAM	3.80E-01

NAM	4,50E-01
NETHERLANDS	3.90E-01
NORWAY	2.00E-02
POLAND	9.30E-01
PORTUGAL	2.70E-01
ROW	7.30E-01
SPAIN	2.00E-01
SWEDEN	3.00E-02
SWITZERLAND	3.00E-02
UK	2.60E-01

Source Ecoinvent 3.10.1