

ENVIRONMENTAL PRODUCT DECLARATION

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

ST333X2 39S/PW930UE PSU HMB WH481

ST333X2

Signify N.V.



EPD HUB

Publishing date 2025-07-02



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	ST333X2 39S/PW930UE PSU HMB WH481
Additional labels	ST333X2
Product reference	910505104863
Place of production	HUNGARY
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	2.02 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	1.90E+01
GWP-total, A1-A3 (kgCO ₂ e)	1.86E+01
Secondary material, inputs (%)	41
Secondary material, outputs (%)	63.3
Total energy use, A1-A3 (kWh)	73.8
Net fresh water use, A1-A3 (m ³ e)	0.16

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

GreenSpace Evo Projector is a powerful and flexible projector for retail with a subtle and neutral design. The 3D printed housing is crafted from at least 55% recycled or bio-circular materials, while the heatsink is made from 85% recycled aluminium. Because of its circular design, the luminaire is upgradable, reusable, fully serviceable and recyclable. Combined with the high energy efficiency, this makes the GreenSpace Evo a sustainable projector choice. The PerfectAccent reflectors ensure a light effect with increased sparkle and improved shopper eye comfort. GreenSpace Evo also comes in state-of-the-art ultra-efficient variants and integrates seamlessly onto 3C- and DALI-tracks, CoreLine Trunking and Maxos fusion.

Further customization of colors and textures is possible via Philips MyCreation

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	72.05	EU , APAC
Minerals	0	Not applicable
Fossil materials	27.94	EU , APAC
Bio-based materials	0	Not applicable

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0.15

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 Unit
Mass per declared unit	2.02 kg
Functional unit	7700 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.

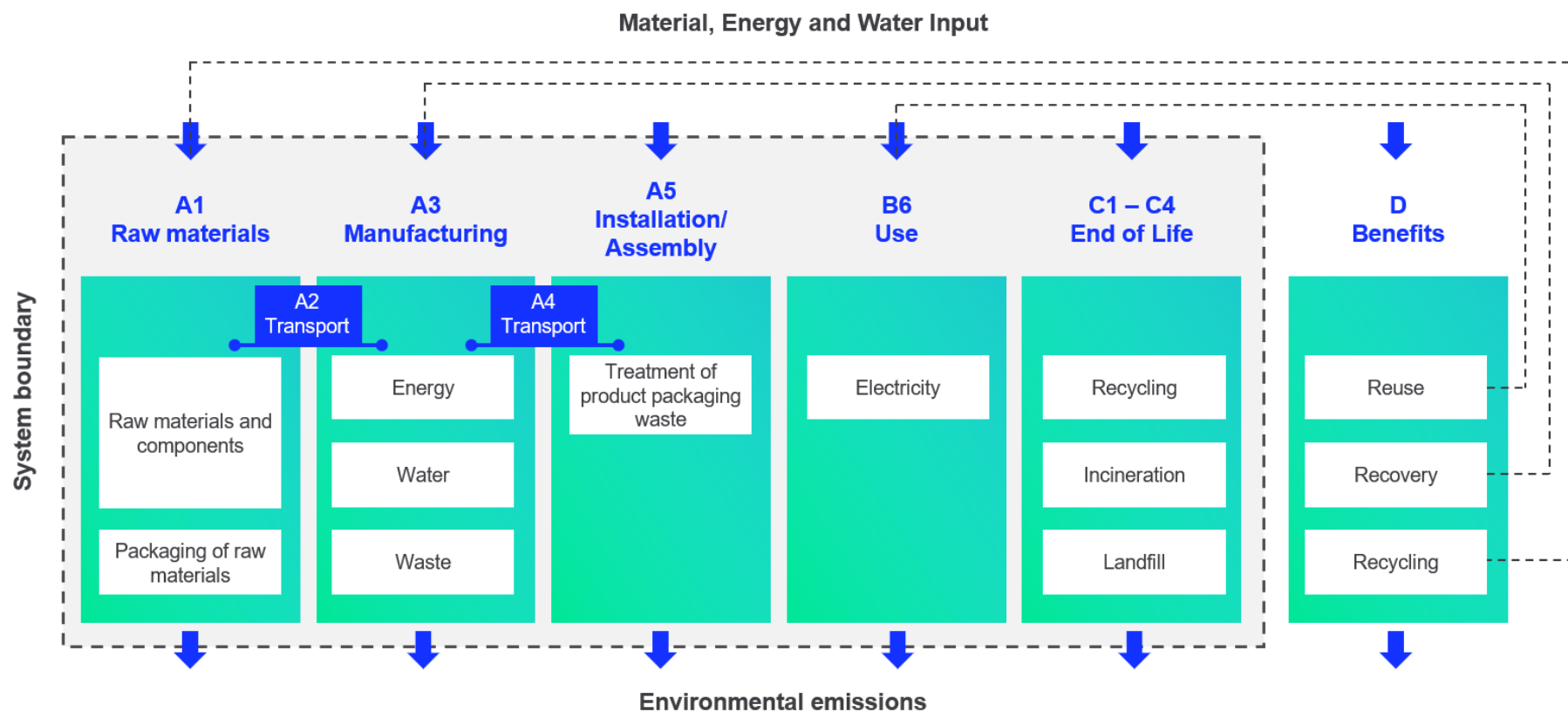
PRODUCT USE AND MAINTENANCE (B1-B7)

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	1.76E+01	5.09E-01	4.34E-01	1.86E+01	5.05E-01	5.64E-01	MNR	MNR	MNR	MNR	MNR	1.94E+03	MNR	MNR	3.47E-02	5.48E-01	5.19E-01	-1.95E+00
GWP – fossil	kg CO ₂ e	1.75E+01	5.09E-01	9.59E-01	1.90E+01	5.05E-01	2.64E-02	MNR	MNR	MNR	MNR	MNR	1.93E+03	MNR	MNR	3.47E-02	5.48E-01	2.84E-01	-1.95E+00
GWP – biogenic	kg CO ₂ e	9.00E-02	0.00E+00	-5.38E-01	-4.48E-01	0.00E+00	5.38E-01	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	0.00E+00	2.35E-01	-6.04E-04
GWP – LULUC	kg CO ₂ e	2.28E-02	2.29E-04	1.25E-02	3.55E-02	2.26E-04	3.82E-06	MNR	MNR	MNR	MNR	MNR	5.93E+00	MNR	MNR	1.55E-05	5.60E-05	1.42E-05	-7.93E-04
Ozone depletion pot.	kg CFC ₁₁ e	2.76E-07	7.51E-09	3.80E-08	3.21E-07	7.46E-09	1.71E-10	MNR	MNR	MNR	MNR	MNR	3.56E-05	MNR	MNR	5.13E-10	5.61E-10	2.84E-10	-8.52E-09
Acidification potential	mol H ⁺ e	1.49E-01	1.96E-03	3.59E-03	1.54E-01	1.72E-03	1.05E-04	MNR	MNR	MNR	MNR	MNR	1.14E+01	MNR	MNR	1.18E-04	4.75E-04	1.20E-04	-3.49E-02
EP-freshwater ²⁾	kg Pe	9.54E-03	3.92E-05	2.97E-04	9.88E-03	3.93E-05	1.52E-06	MNR	MNR	MNR	MNR	MNR	1.80E+00	MNR	MNR	2.70E-06	2.14E-05	1.41E-05	-1.93E-03
EP-marine	kg Ne	2.02E-02	6.24E-04	1.44E-03	2.23E-02	5.66E-04	5.47E-05	MNR	MNR	MNR	MNR	MNR	1.78E+00	MNR	MNR	3.89E-05	1.45E-04	5.11E-04	-3.00E-03
EP-terrestrial	mol Ne	3.30E-01	6.81E-03	9.69E-03	3.46E-01	6.16E-03	4.76E-04	MNR	MNR	MNR	MNR	MNR	1.60E+01	MNR	MNR	4.23E-04	1.44E-03	5.37E-04	-3.41E-02
POCP (“smog”) ³⁾	kg NMVOCe	7.21E-02	2.71E-03	3.84E-03	7.87E-02	2.54E-03	1.21E-04	MNR	MNR	MNR	MNR	MNR	5.26E+00	MNR	MNR	1.74E-04	3.98E-04	1.58E-04	-1.01E-02
ADP-minerals & metals ⁴⁾	kg Sbe	1.11E-03	1.40E-06	7.21E-06	1.12E-03	1.41E-06	3.40E-08	MNR	MNR	MNR	MNR	MNR	2.61E-02	MNR	MNR	9.68E-08	1.81E-06	4.20E-08	-4.23E-04
ADP-fossil resources	MJ	2.28E+02	7.37E+00	1.39E+01	2.49E+02	7.33E+00	9.01E-02	MNR	MNR	MNR	MNR	MNR	4.49E+04	MNR	MNR	5.04E-01	5.57E-01	2.19E-01	-2.03E+01
Water use ⁵⁾	m ³ e depr.	6.77E+00	3.62E-02	3.89E-01	7.19E+00	3.62E-02	2.74E-02	MNR	MNR	MNR	MNR	MNR	1.22E+03	MNR	MNR	2.49E-03	4.13E-02	1.86E-02	-2.77E-01

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get 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	1.61E-06	5.04E-08	5.78E-08	1.71E-06	5.06E-08	8.78E-10	MNR	MNR	MNR	MNR	MNR	4.05E-05	MNR	MNR	3.48E-09	5.47E-09	1.67E-09	-1.51E-07
Ionizing radiation ⁶⁾	kBq U235e	1.18E+00	6.37E-03	3.89E-02	1.23E+00	6.39E-03	1.70E-04	MNR	MNR	MNR	MNR	MNR	1.24E+03	MNR	MNR	4.39E-04	2.58E-03	2.96E-04	-1.17E-01
Ecotoxicity (freshwater)	CTUe	3.15E+02	1.04E+00	3.87E+00	3.20E+02	1.04E+00	6.50E-01	MNR	MNR	MNR	MNR	MNR	6.85E+03	MNR	MNR	7.13E-02	1.24E+00	1.50E+01	-2.01E+01
Human toxicity, cancer	CTUh	2.02E-08	8.44E-11	3.83E-10	2.07E-08	8.34E-11	3.08E-11	MNR	MNR	MNR	MNR	MNR	6.53E-07	MNR	MNR	5.73E-12	7.11E-11	3.61E-11	-2.93E-09
Human tox. non-cancer	CTUh	5.54E-07	4.73E-09	1.17E-08	5.71E-07	4.75E-09	1.26E-09	MNR	MNR	MNR	MNR	MNR	3.38E-05	MNR	MNR	3.26E-10	3.28E-09	1.91E-09	-2.60E-07
SQP ⁷⁾	-	1.15E+02	7.32E+00	4.65E+01	1.69E+02	7.38E+00	2.71E-02	MNR	MNR	MNR	MNR	MNR	1.00E+04	MNR	MNR	5.07E-01	7.14E-01	3.06E-01	-1.09E+01

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

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy ⁸⁾	MJ	2.65E+01	1.00E-01	6.40E+00	3.30E+01	1.00E-01	-6.61E+00	MNR	MNR	MNR	MNR	MNR	1.23E+04	MNR	MNR	6.90E-03	7.36E-02	2.69E-03	-1.20E+00
Renew. PER as material	MJ	2.25E+00	0.00E+00	4.75E+00	6.99E+00	0.00E+00	-4.75E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	-4.95E-04	-2.25E+00	0.00E+00
Total use of renew. PER	MJ	2.87E+01	1.00E-01	1.11E+01	4.00E+01	1.00E-01	-1.14E+01	MNR	MNR	MNR	MNR	MNR	1.23E+04	MNR	MNR	6.90E-03	7.31E-02	-2.24E+00	-1.20E+00
Non-re. PER as energy	MJ	2.12E+02	7.37E+00	1.31E+01	2.33E+02	7.33E+00	-6.53E-02	MNR	MNR	MNR	MNR	MNR	4.49E+04	MNR	MNR	5.04E-01	-7.47E+00	-1.18E+01	-2.03E+01
Non-re. PER as material	MJ	7.29E+00	0.00E+00	3.85E-02	7.33E+00	0.00E+00	-3.85E-02	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	-1.81E+00	-5.49E+00	2.97E-01
Total use of non-re. PER	MJ	2.19E+02	7.37E+00	1.31E+01	2.40E+02	7.33E+00	-1.04E-01	MNR	MNR	MNR	MNR	MNR	4.49E+04	MNR	MNR	5.04E-01	-9.28E+00	-1.73E+01	-2.00E+01
Secondary materials	kg	8.29E-01	3.14E-03	2.85E-01	1.12E+00	3.12E-03	1.32E-04	MNR	MNR	MNR	MNR	MNR	7.43E+00	MNR	MNR	2.14E-04	5.32E-04	9.16E-04	9.66E-02
Renew. secondary fuels	MJ	2.88E-02	3.94E-05	4.11E-02	6.99E-02	3.96E-05	2.14E-06	MNR	MNR	MNR	MNR	MNR	5.93E-02	MNR	MNR	2.72E-06	2.62E-05	3.57E-06	-4.30E-04
Non-ren. secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m ³	1.44E-01	1.08E-03	1.07E-02	1.56E-01	1.08E-03	4.35E-04	MNR	MNR	MNR	MNR	MNR	3.88E+01	MNR	MNR	7.45E-05	7.88E-04	-7.74E-04	-1.36E-02

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	3.29E+00	1.24E-02	5.09E-02	3.36E+00	1.24E-02	7.18E-03	MNR	MNR	MNR	MNR	MNR	1.14E+02	MNR	MNR	8.54E-04	1.23E-02	2.61E-02	-4.08E-01
Non-hazardous waste	kg	7.10E+01	2.30E-01	1.35E+00	7.26E+01	2.30E-01	4.00E-01	MNR	MNR	MNR	MNR	MNR	8.79E+03	MNR	MNR	1.58E-02	3.33E-01	1.98E+00	-9.86E+00
Radioactive waste	kg	2.98E-04	1.56E-06	9.36E-06	3.09E-04	1.56E-06	4.33E-08	MNR	MNR	MNR	MNR	MNR	3.19E-01	MNR	MNR	1.07E-07	6.35E-07	7.34E-08	-2.86E-05

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	1.06E+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	2.14E-01	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	9.80E-02	9.80E-02	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	1.78E+01	5.06E-01	1.01E+00	1.93E+01	5.02E-01	2.62E-02	MNR	MNR	MNR	MNR	MNR	1.93E+03	MNR	MNR	3.45E-02	5.48E-01	2.83E-01	-1.93E+00
Ozone depletion Pot.	kg CFC ₁₁ e	2.54E-07	5.99E-09	3.60E-08	2.96E-07	5.95E-09	1.53E-10	MNR	MNR	MNR	MNR	MNR	2.97E-05	MNR	MNR	4.09E-10	4.78E-10	2.36E-10	-7.63E-09
Acidification	kg SO ₂ e	1.16E-01	1.51E-03	2.57E-03	1.20E-01	1.32E-03	7.58E-05	MNR	MNR	MNR	MNR	MNR	9.68E+00	MNR	MNR	9.04E-05	3.72E-04	8.66E-05	-3.04E-02
Eutrophication	kg PO ₄ ³ e	3.37E-02	3.40E-04	1.80E-03	3.58E-02	3.21E-04	2.56E-05	MNR	MNR	MNR	MNR	MNR	1.25E+00	MNR	MNR	2.20E-05	7.09E-05	5.25E-05	-1.83E-03
POCP ("smog")	kg C ₂ H ₄ e	9.33E-03	1.26E-04	2.88E-04	9.74E-03	1.17E-04	5.39E-06	MNR	MNR	MNR	MNR	MNR	5.27E-01	MNR	MNR	8.06E-06	2.27E-05	9.74E-06	-1.53E-03
ADP-elements	kg Sbe	1.10E-03	1.37E-06	7.13E-06	1.11E-03	1.37E-06	2.33E-08	MNR	MNR	MNR	MNR	MNR	2.60E-02	MNR	MNR	9.44E-08	1.80E-06	3.54E-08	-4.23E-04
ADP-fossil	MJ	2.09E+02	7.27E+00	1.33E+01	2.30E+02	7.23E+00	8.74E-02	MNR	MNR	MNR	MNR	MNR	2.31E+04	MNR	MNR	4.97E-01	5.16E-01	2.14E-01	-1.84E+01

APPENDIX (EPD HUB ALIGNED)

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

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

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

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

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

$$TSF = PSF * CSF$$

Table A1: Light management function (PEP EcoPassport aligned)

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

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

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

Table A2 Scaled GWP per scaling factor (EPD Hub aligned)

Configuration	Flux [lm]	Power [W]	Efficacy [lm/W]	PSF	Total Scaling Factor (TSF)				Scaled Impacts (GWP100 B6 - kg CO2eq.)			
					NC	DD	PS	DD+PS	NC	DD	PS	DD+PS
ST333X LED20S 827 MB PSU	4300	38	114.7	0.636	0.636	0.477	0.477	0.35	1233.8	925.4	925.4	679.0
ST333X LED20S 827 MB DIA	4300	38	114.7	0.636	0.636	0.477	0.477	0.35	1233.8	925.4	925.4	679.0
ST333X LED20S 830 MB PSU	4400	38	117.3	0.636	0.636	0.477	0.477	0.35	1233.8	925.4	925.4	679.0
ST333X LED20S 830 MB DIA	4400	38	117.3	0.636	0.636	0.477	0.477	0.35	1233.8	925.4	925.4	679.0
ST333X LED20S 840 MB PSU	4700	38	125.3	0.636	0.636	0.477	0.477	0.35	1233.8	925.4	925.4	679.0
ST333X LED20S 840 MB DIA	4700	38	125.3	0.636	0.636	0.477	0.477	0.35	1233.8	925.4	925.4	679.0
ST333X LED20S PW930 MB PSU	4200	38	110.5	0.644	0.644	0.483	0.483	0.354	1249.4	937.0	937.0	686.8
ST333X LED20S PW930 MB DIA	4200	38	110.5	0.644	0.644	0.483	0.483	0.354	1249.4	937.0	937.0	686.8
ST333X LED20S PW940 MB PSU	4500	38	118.4	0.644	0.644	0.483	0.483	0.354	1249.4	937.0	937.0	686.8
ST333X LED20S PW940 MB DIA	4500	38	118.4	0.644	0.644	0.483	0.483	0.354	1249.4	937.0	937.0	686.8
ST333X LED20S PC930 MB PSU	4100	43	95.3	0.729	0.729	0.547	0.547	0.401	1414.3	1061.2	1061.2	777.9
ST333X LED20S PC930 MB DIA	4100	42	96.5	0.72	0.72	0.54	0.54	0.396	1396.8	1047.6	1047.6	768.2
ST333X LED19S FMT MB PSU	3800	50	76.0	0.847	0.847	0.635	0.635	0.466	1643.2	1231.9	1231.9	904.0
ST333X LED19S FMT MB DIA	3800	50	76.8	0.839	0.839	0.629	0.629	0.461	1627.7	1220.3	1220.3	894.3
ST333X LED19S ROSE MB PSU	3750	39	96.2	0.661	0.661	0.496	0.496	0.364	1282.3	962.2	962.2	706.2
ST333X LED19S ROSE MB DIA	3750	39	96.2	0.661	0.661	0.496	0.496	0.364	1282.3	962.2	962.2	706.2
ST333X LED27S 827 MB PSU	5600	44	127.3	0.746	0.746	0.559	0.559	0.41	1447.2	1084.5	1084.5	795.4

ST333X LED27S 827 MB DIA	5600	44	128.7	0.737	0.737	0.553	0.553	0.405	1429.8	1072.8	1072.8	785.7
ST333X LED27S 830 MB PSU	5400	40	136.7	0.669	0.669	0.502	0.502	0.368	1297.9	973.9	973.9	713.9
ST333X LED27S 830 MB DIA	5400	40	136.7	0.669	0.669	0.502	0.502	0.368	1297.9	973.9	973.9	713.9
ST333X LED27S 840 MB PSU	5700	40	144.3	0.669	0.669	0.502	0.502	0.368	1297.9	973.9	973.9	713.9
ST333X LED27S 840 MB DIA	5700	40	144.3	0.669	0.669	0.502	0.502	0.368	1297.9	973.9	973.9	713.9
ST333X LED27S PW930 MB PSU	5600	44	127.3	0.746	0.746	0.559	0.559	0.41	1447.2	1084.5	1084.5	795.4
ST333X LED27S PW930 MB DIA	5600	44	128.7	0.737	0.737	0.553	0.553	0.405	1429.8	1072.8	1072.8	785.7
ST333X LED27S PW940 MB PSU	5500	40	139.2	0.669	0.669	0.502	0.502	0.368	1297.9	973.9	973.9	713.9
ST333X LED27S PW940 MB DIA	5500	40	139.2	0.669	0.669	0.502	0.502	0.368	1297.9	973.9	973.9	713.9
ST333X LED27S PC930 MB PSU	5500	48	113.4	0.822	0.822	0.616	0.616	0.452	1594.7	1195.0	1195.0	876.9
ST333X LED27S PC930 MB DIA	5500	48	114.6	0.814	0.814	0.61	0.61	0.448	1579.2	1183.4	1183.4	869.1
ST333X LED27S CH MB PSU	5600	44	127.3	0.746	0.746	0.559	0.559	0.41	1447.2	1084.5	1084.5	795.4
ST333X LED27S CH MB DIA	5600	44	128.7	0.737	0.737	0.553	0.553	0.405	1429.8	1072.8	1072.8	785.7
ST333X LED39S 827 MB PSU	8000	63	127.0	1.068	1.068	0.801	0.801	0.587	2071.9	1553.9	1553.9	1138.8
ST333X LED39S 827 MB DIA	8000	62	129.0	1.051	1.051	0.788	0.788	0.578	2038.9	1528.7	1528.7	1121.3
ST333X LED39S 830 MB PSU	7900	59	133.9	1.0	1.0	0.75	0.75	0.55	1940.0	1455.0	1455.0	1067.0
ST333X LED39S 830 MB DIA	7900	58	136.2	0.983	0.983	0.737	0.737	0.541	1907.0	1429.8	1429.8	1049.5
ST333X LED39S 840 MB PSU	8300	59	140.7	1.0	1.0	0.75	0.75	0.55	1940.0	1455.0	1455.0	1067.0
ST333X LED39S 840 MB DIA	8300	58	143.1	0.983	0.983	0.737	0.737	0.541	1907.0	1429.8	1429.8	1049.5
ST333X LED39S PW930 MB PSU	7900	63	125.4	1.068	1.068	0.801	0.801	0.587	2071.9	1553.9	1553.9	1138.8
ST333X LED39S PW930 MB DIA	7900	62	127.4	1.051	1.051	0.788	0.788	0.578	2038.9	1528.7	1528.7	1121.3
ST333X LED39S PW940 MB PSU	8000	59	135.6	1.0	1.0	0.75	0.75	0.55	1940.0	1455.0	1455.0	1067.0
ST333X LED39S PW940 MB DIA	8000	58	137.9	0.983	0.983	0.737	0.737	0.541	1907.0	1429.8	1429.8	1049.5
ST333X LED20S 827 HMB PSU	4500	38	120.0	0.636	0.636	0.477	0.477	0.35	1233.8	925.4	925.4	679.0

ST333X LED20S 827 HMB DIA	4500	38	120.0	0.636	0.636	0.477	0.477	0.35	1233.8	925.4	925.4	679.0
ST333X LED20S 830 HMB PSU	4600	38	122.7	0.636	0.636	0.477	0.477	0.35	1233.8	925.4	925.4	679.0
ST333X LED20S 830 HMB DIA	4600	38	122.7	0.636	0.636	0.477	0.477	0.35	1233.8	925.4	925.4	679.0
ST333X LED20S 840 HMB PSU	3950	28	138.6	0.483	0.483	0.362	0.362	0.266	937.0	702.3	702.3	516.0
ST333X LED20S 840 HMB DIA	3950	28	138.6	0.483	0.483	0.362	0.362	0.266	937.0	702.3	702.3	516.0
ST333X LED20S PW930 HMB PSU	4300	38	113.2	0.644	0.644	0.483	0.483	0.354	1249.4	937.0	937.0	686.8
ST333X LED20S PW930 HMB DIA	4300	38	113.2	0.644	0.644	0.483	0.483	0.354	1249.4	937.0	937.0	686.8
ST333X LED20S PW940 HMB PSU	4600	38	121.1	0.644	0.644	0.483	0.483	0.354	1249.4	937.0	937.0	686.8
ST333X LED20S PW940 HMB DIA	4600	38	121.1	0.644	0.644	0.483	0.483	0.354	1249.4	937.0	937.0	686.8
ST333X LED20S PC930 HMB PSU	4300	43	100.0	0.729	0.729	0.547	0.547	0.401	1414.3	1061.2	1061.2	777.9
ST333X LED20S PC930 HMB DIA	4300	42	101.2	0.72	0.72	0.54	0.54	0.396	1396.8	1047.6	1047.6	768.2
ST333X LED19S FMT HMB PSU	3900	50	78.0	0.847	0.847	0.635	0.635	0.466	1643.2	1231.9	1231.9	904.0
ST333X LED19S FMT HMB DIA	3900	50	78.8	0.839	0.839	0.629	0.629	0.461	1627.7	1220.3	1220.3	894.3
ST333X LED19S ROSE HMB PSU	3850	39	98.7	0.661	0.661	0.496	0.496	0.364	1282.3	962.2	962.2	706.2
ST333X LED19S ROSE HMB DIA	3850	39	98.7	0.661	0.661	0.496	0.496	0.364	1282.3	962.2	962.2	706.2
ST333X LED27S 827 HMB PSU	5300	40	132.5	0.678	0.678	0.509	0.509	0.373	1315.3	987.5	987.5	723.6
ST333X LED27S 827 HMB DIA	5300	40	134.2	0.669	0.669	0.502	0.502	0.368	1297.9	973.9	973.9	713.9
ST333X LED27S 830 HMB PSU	5500	40	137.5	0.678	0.678	0.509	0.509	0.373	1315.3	987.5	987.5	723.6
ST333X LED27S 830 HMB DIA	5500	40	139.2	0.669	0.669	0.502	0.502	0.368	1297.9	973.9	973.9	713.9
ST333X LED27S 840 HMB PSU	5800	40	145.0	0.678	0.678	0.509	0.509	0.373	1315.3	987.5	987.5	723.6
ST333X LED27S 840 HMB DIA	5800	40	146.8	0.669	0.669	0.502	0.502	0.368	1297.9	973.9	973.9	713.9
ST333X LED27S PW930 HMB PSU	5700	44	129.5	0.746	0.746	0.559	0.559	0.41	1447.2	1084.5	1084.5	795.4
ST333X LED27S PW930 HMB DIA	5700	44	131.0	0.737	0.737	0.553	0.553	0.405	1429.8	1072.8	1072.8	785.7
ST333X LED27S PW940 HMB PSU	5600	40	140.0	0.678	0.678	0.509	0.509	0.373	1315.3	987.5	987.5	723.6

ST333X LED27S PW940 HMB DIA	5600	40	141.8	0.669	0.669	0.502	0.502	0.368	1297.9	973.9	973.9	713.9
ST333X LED27S PW930 UHE HMB PSU	5500	37	148.6	0.627	0.627	0.47	0.47	0.345	1216.4	911.8	911.8	669.3
ST333X LED27S PW930 UHE HMB DIA	5500	36	150.7	0.619	0.619	0.464	0.464	0.34	1200.9	900.2	900.2	659.6
ST333X LED27S PW940 UHE HMB PSU	5700	37	154.1	0.627	0.627	0.47	0.47	0.345	1216.4	911.8	911.8	669.3
ST333X LED27S PW940 UHE HMB DIA	5700	36	156.2	0.619	0.619	0.464	0.464	0.34	1200.9	900.2	900.2	659.6
ST333X LED27S PC930 HMB PSU	5600	48	115.5	0.822	0.822	0.616	0.616	0.452	1594.7	1195.0	1195.0	876.9
ST333X LED27S PC930 HMB DIA	5600	48	116.7	0.814	0.814	0.61	0.61	0.448	1579.2	1183.4	1183.4	869.1
ST333X LED27S CH HMB PSU	5300	40	132.5	0.678	0.678	0.509	0.509	0.373	1315.3	987.5	987.5	723.6
ST333X LED27S CH HMB DIA	5300	40	134.2	0.669	0.669	0.502	0.502	0.368	1297.9	973.9	973.9	713.9
<u>ST333X LED39S 827 HMB PSU</u>	7800	59	132.2	1.0	1.0	0.75	0.75	0.55	1940.0	1455.0	1455.0	1067.0
ST333X LED39S 827 HMB DIA	7800	58	134.5	0.983	0.983	0.737	0.737	0.541	1907.0	1429.8	1429.8	1049.5
ST333X LED39S 830 HMB PSU	8100	59	137.3	1.0	1.0	0.75	0.75	0.55	1940.0	1455.0	1455.0	1067.0
ST333X LED39S 830 HMB DIA	8100	58	139.7	0.983	0.983	0.737	0.737	0.541	1907.0	1429.8	1429.8	1049.5
ST333X LED39S 840 HMB PSU	8500	59	144.1	1.0	1.0	0.75	0.75	0.55	1940.0	1455.0	1455.0	1067.0
ST333X LED39S 840 HMB DIA	8500	58	146.6	0.983	0.983	0.737	0.737	0.541	1907.0	1429.8	1429.8	1049.5
<u>ST333X LED39S PW930 HMB PSU</u>	7700	59	130.5	1.0	1.0	0.75	0.75	0.55	1940.0	1455.0	1455.0	1067.0
ST333X LED39S PW930 HMB DIA	7700	58	132.8	0.983	0.983	0.737	0.737	0.541	1907.0	1429.8	1429.8	1049.5
ST333X LED39S PW940 HMB PSU	7700	55	140.0	0.932	0.932	0.699	0.699	0.513	1808.1	1356.1	1356.1	995.2
ST333X LED39S PW940 HMB DIA	7700	53	145.3	0.898	0.898	0.673	0.673	0.494	1742.1	1305.6	1305.6	958.4
ST333X LED39S PW930 UHE HMB PSU	7800	52	150.0	0.881	0.881	0.661	0.661	0.485	1709.1	1282.3	1282.3	940.9
ST333X LED39S PW930 UHE HMB DIA	7800	51	152.9	0.864	0.864	0.648	0.648	0.475	1676.2	1257.1	1257.1	921.5
ST333X LED39S PW940 UHE HMB PSU	8000	52	153.8	0.881	0.881	0.661	0.661	0.485	1709.1	1282.3	1282.3	940.9
ST333X LED39S PW940 UHE HMB DIA	8000	50	160.0	0.847	0.847	0.635	0.635	0.466	1643.2	1231.9	1231.9	904.0

* 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
ST333X LED20S 827 MB PSU	4300	38	114.7	0.636	0.052	0.039	0.039	0.029	100.9	75.7	75.7	56.3
ST333X LED20S 827 MB DIA	4300	38	114.7	0.636	0.052	0.039	0.039	0.029	100.9	75.7	75.7	56.3
ST333X LED20S 830 MB PSU	4400	38	117.3	0.636	0.051	0.038	0.038	0.028	98.9	73.7	73.7	54.3
ST333X LED20S 830 MB DIA	4400	38	117.3	0.636	0.051	0.038	0.038	0.028	98.9	73.7	73.7	54.3
ST333X LED20S 840 MB PSU	4700	38	125.3	0.636	0.047	0.035	0.035	0.026	91.2	67.9	67.9	50.4

ST333X LED20S 840 MB DIA	4700	38	125.3	0.636	0.047	0.035	0.035	0.026	91.2	67.9	67.9	50.4
ST333X LED20S PW930 MB PSU	4200	38	110.5	0.644	0.053	0.04	0.04	0.029	102.8	77.6	77.6	56.3
ST333X LED20S PW930 MB DIA	4200	38	110.5	0.644	0.053	0.04	0.04	0.029	102.8	77.6	77.6	56.3
ST333X LED20S PW940 MB PSU	4500	38	118.4	0.644	0.05	0.038	0.038	0.028	97.0	73.7	73.7	54.3
ST333X LED20S PW940 MB DIA	4500	38	118.4	0.644	0.05	0.038	0.038	0.028	97.0	73.7	73.7	54.3
ST333X LED20S PC930 MB PSU	4100	43	95.3	0.729	0.062	0.046	0.046	0.034	120.3	89.2	89.2	66.0
ST333X LED20S PC930 MB DIA	4100	42	96.5	0.72	0.061	0.046	0.046	0.034	118.3	89.2	89.2	66.0
ST333X LED19S FMT MB PSU	3800	50	76.0	0.847	0.078	0.058	0.058	0.043	151.3	112.5	112.5	83.4
ST333X LED19S FMT MB DIA	3800	50	76.8	0.839	0.077	0.058	0.058	0.042	149.4	112.5	112.5	81.5
ST333X LED19S ROSE MB PSU	3750	39	96.2	0.661	0.061	0.046	0.046	0.034	118.3	89.2	89.2	66.0
ST333X LED19S ROSE MB DIA	3750	39	96.2	0.661	0.061	0.046	0.046	0.034	118.3	89.2	89.2	66.0
ST333X LED27S 827 MB PSU	5600	44	127.3	0.746	0.046	0.035	0.035	0.025	89.2	67.9	67.9	48.5
ST333X LED27S 827 MB DIA	5600	44	128.7	0.737	0.046	0.035	0.035	0.025	89.2	67.9	67.9	48.5
ST333X LED27S 830 MB PSU	5400	40	136.7	0.669	0.043	0.032	0.032	0.024	83.4	62.1	62.1	46.6
ST333X LED27S 830 MB DIA	5400	40	136.7	0.669	0.043	0.032	0.032	0.024	83.4	62.1	62.1	46.6
ST333X LED27S 840 MB PSU	5700	40	144.3	0.669	0.041	0.031	0.031	0.023	79.5	60.1	60.1	44.6
ST333X LED27S 840 MB DIA	5700	40	144.3	0.669	0.041	0.031	0.031	0.023	79.5	60.1	60.1	44.6
ST333X LED27S PW930 MB PSU	5600	44	127.3	0.746	0.046	0.035	0.035	0.025	89.2	67.9	67.9	48.5
ST333X LED27S PW930 MB DIA	5600	44	128.7	0.737	0.046	0.035	0.035	0.025	89.2	67.9	67.9	48.5
ST333X LED27S PW940 MB PSU	5500	40	139.2	0.669	0.043	0.032	0.032	0.024	83.4	62.1	62.1	46.6
ST333X LED27S PW940 MB DIA	5500	40	139.2	0.669	0.043	0.032	0.032	0.024	83.4	62.1	62.1	46.6
ST333X LED27S PC930 MB PSU	5500	48	113.4	0.822	0.053	0.04	0.04	0.029	102.8	77.6	77.6	56.3
ST333X LED27S PC930 MB DIA	5500	48	114.6	0.814	0.052	0.039	0.039	0.029	100.9	75.7	75.7	56.3
ST333X LED27S CH MB PSU	5600	44	127.3	0.746	0.046	0.035	0.035	0.025	89.2	67.9	67.9	48.5

ST333X LED27S CH MB DIA	5600	44	128.7	0.737	0.046	0.035	0.035	0.025	89.2	67.9	67.9	48.5
ST333X LED39S 827 MB PSU	8000	63	127.0	1.068	0.047	0.035	0.035	0.026	91.2	67.9	67.9	50.4
ST333X LED39S 827 MB DIA	8000	62	129.0	1.051	0.046	0.035	0.035	0.025	89.2	67.9	67.9	48.5
ST333X LED39S 830 MB PSU	7900	59	133.9	1.0	0.044	0.033	0.033	0.024	85.4	64.0	64.0	46.6
ST333X LED39S 830 MB DIA	7900	58	136.2	0.983	0.043	0.032	0.032	0.024	83.4	62.1	62.1	46.6
ST333X LED39S 840 MB PSU	8300	59	140.7	1.0	0.042	0.032	0.032	0.023	81.5	62.1	62.1	44.6
ST333X LED39S 840 MB DIA	8300	58	143.1	0.983	0.041	0.031	0.031	0.023	79.5	60.1	60.1	44.6
ST333X LED39S PW930 MB PSU	7900	63	125.4	1.068	0.047	0.035	0.035	0.026	91.2	67.9	67.9	50.4
ST333X LED39S PW930 MB DIA	7900	62	127.4	1.051	0.046	0.035	0.035	0.025	89.2	67.9	67.9	48.5
ST333X LED39S PW940 MB PSU	8000	59	135.6	1.0	0.044	0.033	0.033	0.024	85.4	64.0	64.0	46.6
ST333X LED39S PW940 MB DIA	8000	58	137.9	0.983	0.043	0.032	0.032	0.024	83.4	62.1	62.1	46.6
ST333X LED20S 827 HMB PSU	4500	38	120.0	0.636	0.05	0.038	0.038	0.028	97.0	73.7	73.7	54.3
ST333X LED20S 827 HMB DIA	4500	38	120.0	0.636	0.05	0.038	0.038	0.028	97.0	73.7	73.7	54.3
ST333X LED20S 830 HMB PSU	4600	38	122.7	0.636	0.048	0.036	0.036	0.026	93.1	69.8	69.8	50.4
ST333X LED20S 830 HMB DIA	4600	38	122.7	0.636	0.048	0.036	0.036	0.026	93.1	69.8	69.8	50.4
ST333X LED20S 840 HMB PSU	3950	28	138.6	0.483	0.043	0.032	0.032	0.024	83.4	62.1	62.1	46.6
ST333X LED20S 840 HMB DIA	3950	28	138.6	0.483	0.043	0.032	0.032	0.024	83.4	62.1	62.1	46.6
ST333X LED20S PW930 HMB PSU	4300	38	113.2	0.644	0.052	0.039	0.039	0.029	100.9	75.7	75.7	56.3
ST333X LED20S PW930 HMB DIA	4300	38	113.2	0.644	0.052	0.039	0.039	0.029	100.9	75.7	75.7	56.3
ST333X LED20S PW940 HMB PSU	4600	38	121.1	0.644	0.049	0.037	0.037	0.027	95.1	71.8	71.8	52.4
ST333X LED20S PW940 HMB DIA	4600	38	121.1	0.644	0.049	0.037	0.037	0.027	95.1	71.8	71.8	52.4
ST333X LED20S PC930 HMB PSU	4300	43	100.0	0.729	0.059	0.044	0.044	0.032	114.5	85.4	85.4	62.1
ST333X LED20S PC930 HMB DIA	4300	42	101.2	0.72	0.058	0.044	0.044	0.032	112.5	85.4	85.4	62.1
ST333X LED19S FMT HMB PSU	3900	50	78.0	0.847	0.076	0.057	0.057	0.042	147.4	110.6	110.6	81.5

ST333X LED19S FMT HMB DIA	3900	50	78.8	0.839	0.076	0.057	0.057	0.042	147.4	110.6	110.6	81.5
ST333X LED19S ROSE HMB PSU	3850	39	98.7	0.661	0.06	0.045	0.045	0.033	116.4	87.3	87.3	64.0
ST333X LED19S ROSE HMB DIA	3850	39	98.7	0.661	0.06	0.045	0.045	0.033	116.4	87.3	87.3	64.0
ST333X LED27S 827 HMB PSU	5300	40	132.5	0.678	0.045	0.034	0.034	0.025	87.3	66.0	66.0	48.5
ST333X LED27S 827 HMB DIA	5300	40	134.2	0.669	0.044	0.033	0.033	0.024	85.4	64.0	64.0	46.6
ST333X LED27S 830 HMB PSU	5500	40	137.5	0.678	0.043	0.032	0.032	0.024	83.4	62.1	62.1	46.6
ST333X LED27S 830 HMB DIA	5500	40	139.2	0.669	0.043	0.032	0.032	0.024	83.4	62.1	62.1	46.6
ST333X LED27S 840 HMB PSU	5800	40	145.0	0.678	0.041	0.031	0.031	0.023	79.5	60.1	60.1	44.6
ST333X LED27S 840 HMB DIA	5800	40	146.8	0.669	0.04	0.03	0.03	0.022	77.6	58.2	58.2	42.7
ST333X LED27S PW930 HMB PSU	5700	44	129.5	0.746	0.046	0.035	0.035	0.025	89.2	67.9	67.9	48.5
ST333X LED27S PW930 HMB DIA	5700	44	131.0	0.737	0.045	0.034	0.034	0.025	87.3	66.0	66.0	48.5
ST333X LED27S PW940 HMB PSU	5600	40	140.0	0.678	0.042	0.032	0.032	0.023	81.5	62.1	62.1	44.6
ST333X LED27S PW940 HMB DIA	5600	40	141.8	0.669	0.041	0.031	0.031	0.023	79.5	60.1	60.1	44.6
ST333X LED27S PW930 UHE HMB PSU	5500	37	148.6	0.627	0.04	0.03	0.03	0.022	77.6	58.2	58.2	42.7
ST333X LED27S PW930 UHE HMB DIA	5500	36	150.7	0.619	0.04	0.03	0.03	0.022	77.6	58.2	58.2	42.7
ST333X LED27S PW940 UHE HMB PSU	5700	37	154.1	0.627	0.038	0.028	0.028	0.021	73.7	54.3	54.3	40.7
ST333X LED27S PW940 UHE HMB DIA	5700	36	156.2	0.619	0.038	0.028	0.028	0.021	73.7	54.3	54.3	40.7
ST333X LED27S PC930 HMB PSU	5600	48	115.5	0.822	0.051	0.038	0.038	0.028	98.9	73.7	73.7	54.3
ST333X LED27S PC930 HMB DIA	5600	48	116.7	0.814	0.05	0.038	0.038	0.028	97.0	73.7	73.7	54.3
ST333X LED27S CH HMB PSU	5300	40	132.5	0.678	0.045	0.034	0.034	0.025	87.3	66.0	66.0	48.5
ST333X LED27S CH HMB DIA	5300	40	134.2	0.669	0.044	0.033	0.033	0.024	85.4	64.0	64.0	46.6
<u>ST333X LED39S 827 HMB PSU</u>	7800	59	132.2	1.0	0.045	0.034	0.034	0.025	87.3	66.0	66.0	48.5
ST333X LED39S 827 HMB DIA	7800	58	134.5	0.983	0.044	0.033	0.033	0.024	85.4	64.0	64.0	46.6
ST333X LED39S 830 HMB PSU	8100	59	137.3	1.0	0.043	0.032	0.032	0.024	83.4	62.1	62.1	46.6

ST333X LED39S 830 HMB DIA	8100	58	139.7	0.983	0.042	0.032	0.032	0.023	81.5	62.1	62.1	44.6
ST333X LED39S 840 HMB PSU	8500	59	144.1	1.0	0.041	0.031	0.031	0.023	79.5	60.1	60.1	44.6
ST333X LED39S 840 HMB DIA	8500	58	146.6	0.983	0.04	0.03	0.03	0.022	77.6	58.2	58.2	42.7
<u>ST333X LED39S PW930 HMB PSU</u>	7700	59	130.5	1.0	0.045	0.034	0.034	0.025	87.3	66.0	66.0	48.5
ST333X LED39S PW930 HMB DIA	7700	58	132.8	0.983	0.044	0.033	0.033	0.024	85.4	64.0	64.0	46.6
ST333X LED39S PW940 HMB PSU	7700	55	140.0	0.932	0.042	0.032	0.032	0.023	81.5	62.1	62.1	44.6
ST333X LED39S PW940 HMB DIA	7700	53	145.3	0.898	0.04	0.03	0.03	0.022	77.6	58.2	58.2	42.7
ST333X LED39S PW930 UHE HMB PSU	7800	52	150.0	0.881	0.04	0.03	0.03	0.022	77.6	58.2	58.2	42.7
ST333X LED39S PW930 UHE HMB DIA	7800	51	152.9	0.864	0.039	0.029	0.029	0.021	75.7	56.3	56.3	40.7
ST333X LED39S PW940 UHE HMB PSU	8000	52	153.8	0.881	0.039	0.029	0.029	0.021	75.7	56.3	56.3	40.7
ST333X LED39S PW940 UHE HMB DIA	8000	50	160.0	0.847	0.037	0.028	0.028	0.02	71.8	54.3	54.3	38.8

*** 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.*

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 = 3.30E-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