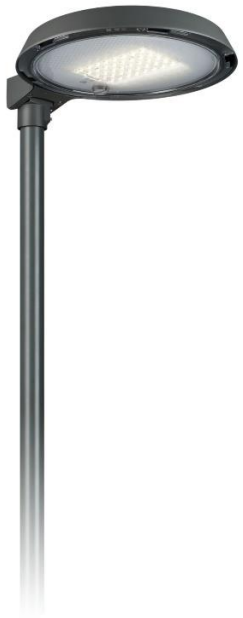
ENVIRONMENTAL PRODUCT DECLARATION

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

Philips TownTune Asymmetric

BDP265
Signify N.V.



EPD HUB
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GENERAL INFORMATION

MANUFACTURER

Manufacturer	Signify N.V.
Address	High Tech Campus 48, 5656 AE Eindhoven, The Netherlands
Contact details	sustainability@signify.com
Website	https://www.signify.com/global

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR version 1.0, 1 Feb 2022
Sector	Electrical product
Category of EPD	Pre-verified EPD
Scope of the EPD	Cradle to gate with options, A4-B7, and modules C1-C4, D
EPD author	Sustainability Signify
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☑ Internal certification ☐External verification

The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of lighting products may not be comparable if they do not comply with EN 15804 and if they are not compared in a lighting context.

PRODUCT

Product name	Philips TownTune Asymmetric
Additional labels	BDP265 LED40-4S/830 DM50 DDF3 48-4S/60A
Product reference	912300024197
Place of production	Spain
Period for data	2022
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	%

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 unit
Declared unit mass	6.64 kg
GWP-fossil, A1-A3 (kgCO2e)	6,33E+01
GWP-total, A1-A3 (kgCO2e)	6,16E+01
Secondary material, inputs (%)	53
Secondary material, outputs (%)	60.6
Total energy use, A1-A3 (kWh)	225
Total water use, A1-A3 (m3e)	0.45

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

Designed to enhance existing and scalable urban spaces, the Philips TownTune family offers all the latest lighting innovations in terms of performance, quality of light and connectivity. The family consists of four solutions: a Central Post Top (CPT), an Asymmetric Spigot Post Top / Side Entry version (ASY), a version with an extending Lyre post top bracket (Lyre), and a Central Post Top with a Conical Comfort Bowl (CCB). Each TownTune luminaire can be customized with a choice of different shapes on top of the housing, plus there's the option to add a decorative ring, which comes in two colors (excluding CCB). Design options that enable you to create your very own lighting signature and bring a distinctive identity to districts and cities. In addition, every luminaire in the TownTune family is uniquely identifiable, thanks to the Signify Service tag app. By simply scanning a QR code, placed inside the door of the mast or directly on the luminaire, you can instantly access the configuration of the luminaire. This makes maintenance and programing operations faster and easier and enables you to create your digital library of lighting assets and spare parts. TownTune also uses the Philips LEDGINE-O lighting platform, ensuring you always have the right amount and direction of light on your street. Furthermore, thanks to being system ready (SR), TownTune is also future proof. A solution that's ready to be paired with both standalone and advanced control and lighting software applications such as Interact City.

For more information, please visit
https://www.lighting.philips.com/link/BDP265/fam/aa/en

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	71.51	EUR, ASIA
Minerals	0.02	EU
Fossil materials	28.48	EUR, ASIA
Bio-based materials	0	Not applicable

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0.479

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 Product
Mass per declared unit	6.64 kg
Functional unit	1 unit of 3200 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 wastes are due to ancillary materials used during manufacturing while the rest is due to material losses.

TRANSPORT AND INSTALLATION (A4-A5)

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

PRODUCT USE AND MAINTENANCE (B1-B7)

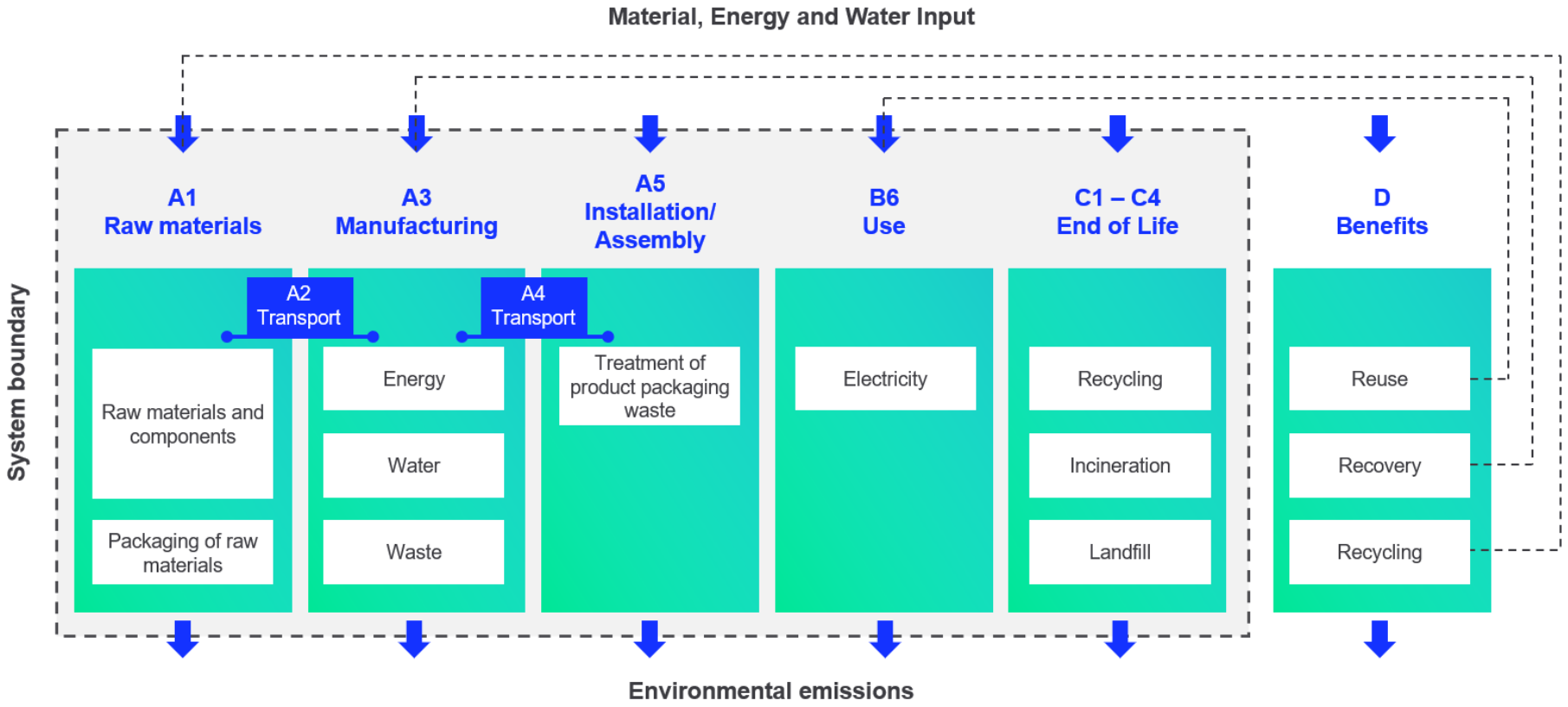
During the use phase, the product consumes electricity from Europe's electricity grid mix (B6). The total power consumption of the reference product is calculated as follows: Wattage x Reference lifetime = kWh consumed throughout the entire use phase B6.

PRODUCT END OF LIFE (C1-C4, D)

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

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

SYSTEM BOUNDARY



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

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

ALLOCATION, ESTIMATES AND ASSUMPTIONS

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

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

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

AVERAGES AND VARIABILITY

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

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

LCA SOFTWARE AND BIBLIOGRAPHY

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

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	6,04E+01	1,47E+00	-2,69E-01	6,16E+01	1,47E+00	1,78E+00	MNR	MNR	MNR	MNR	MNR	1,25E+03	MNR	MNR	9,35E-02	1,82E+00	1,22E+00	-1,09E+01
GWP – fossil	kg CO_2e	6,04E+01	1,47E+00	1,45E+00	6,33E+01	1,47E+00	4,77E-02	MNR	MNR	MNR	MNR	MNR	1,24E+03	MNR	MNR	9,35E-02	1,82E+00	1,17E+00	-1,09E+01
GWP – biogenic	kg CO_2e	-4,69E-02	0,00E+00	-1,73E+00	-1,78E+00	5,68E-04	1,73E+00	MNR	MNR	MNR	MNR	MNR	-8,88E-16	MNR	MNR	0,00E+00	0,00E+00	4,69E-02	-4,04E-03
GWP – LULUC	kg CO_2e	1,05E-01	5,45E-04	1,05E-02	1,16E-01	5,42E-04	1,58E-05	MNR	MNR	MNR	MNR	MNR	2,91E+00	MNR	MNR	3,45E-05	1,45E-04	8,15E-05	-1,92E-03
Ozone depletion pot.	kg CFC_{-11}e	3,48E-06	3,38E-07	1,39E-07	3,96E-06	3,38E-07	4,55E-09	MNR	MNR	MNR	MNR	MNR	6,32E-05	MNR	MNR	2,15E-08	1,33E-08	9,80E-09	-2,98E-07
Acidification potential	mol H^+e	4,08E-01	6,44E-03	7,33E-03	4,21E-01	6,22E-03	3,60E-04	MNR	MNR	MNR	MNR	MNR	7,11E+00	MNR	MNR	3,96E-04	1,43E-03	5,51E-04	-1,54E-01
EP-freshwater[2)]	kg Pe	4,26E-03	1,20E-05	8,40E-05	4,35E-03	1,20E-05	4,78E-07	MNR	MNR	MNR	MNR	MNR	1,32E-01	MNR	MNR	7,65E-07	4,72E-06	2,69E-06	-7,76E-04
EP-marine	kg Ne	6,20E-02	1,90E-03	3,39E-03	6,73E-02	1,85E-03	1,53E-04	MNR	MNR	MNR	MNR	MNR	9,43E-01	MNR	MNR	1,18E-04	4,02E-04	5,48E-04	-1,32E-02
EP-terrestrial	mol Ne	6,47E-01	2,10E-02	2,11E-02	6,89E-01	2,04E-02	1,59E-03	MNR	MNR	MNR	MNR	MNR	1,07E+01	MNR	MNR	1,30E-03	4,41E-03	2,04E-03	-1,58E-01
POCP ("smog")[3)]	kg NMVOCe	2,10E-01	6,67E-03	6,22E-03	2,23E-01	6,53E-03	3,97E-04	MNR	MNR	MNR	MNR	MNR	2,94E+00	MNR	MNR	4,15E-04	1,15E-03	6,13E-04	-4,59E-02
ADP-minerals & metals[4)]	kg Sbe	2,66E-03	3,44E-06	8,38E-06	2,67E-03	3,45E-06	1,49E-07	MNR	MNR	MNR	MNR	MNR	1,16E-02	MNR	MNR	2,19E-07	1,01E-05	2,24E-07	-1,54E-03
ADP-fossil resources	MJ	7,45E+02	2,21E+01	1,91E+01	7,86E+02	2,21E+01	3,57E-01	MNR	MNR	MNR	MNR	MNR	2,65E+04	MNR	MNR	1,40E+00	1,48E+00	9,50E-01	-1,07E+02
Water use[5)]	m^3e depr.	2,36E+01	9,86E-02	8,48E-01	2,46E+01	9,88E-02	8,34E-02	MNR	MNR	MNR	MNR	MNR	7,24E+02	MNR	MNR	6,28E-03	8,84E-02	7,27E-02	-9,84E-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	4,31E-06	1,69E-07	1,40E-07	4,62E-06	1,69E-07	3,33E-09	MNR	MNR	MNR	MNR	MNR	2,34E-05	MNR	MNR	1,08E-08	1,57E-08	7,52E-09	-7,19E-07
Ionizing radiation[6)]	kBq U235e	3,53E+00	1,05E-01	6,80E-02	3,70E+00	1,05E-01	1,28E-03	MNR	MNR	MNR	MNR	MNR	7,17E+02	MNR	MNR	6,69E-03	8,61E-03	4,72E-03	-6,36E-01

Ecotoxicity (freshwater)	CTUe	2,79E+03	1,98E+01	6,31E+01	2,88E+03	1,99E+01	2,39E+00	MNR	MNR	MNR	MNR	MNR	1,80E+04	MNR	MNR	1,26E+00	8,75E+00	4,31E+02	-5,50E+02
Human toxicity, cancer	CTUh	1,76E-07	4,90E-10	1,08E-09	1,77E-07	4,88E-10	1,13E-10	MNR	MNR	MNR	MNR	MNR	5,90E-07	MNR	MNR	3,10E-11	3,03E-10	1,23E-09	-8,72E-09
Human tox. non-cancer	CTUh	2,91E-06	1,96E-08	2,11E-08	2,95E-06	1,97E-08	4,70E-09	MNR	MNR	MNR	MNR	MNR	1,94E-05	MNR	MNR	1,25E-09	1,24E-08	6,16E-08	-1,08E-06
SQP[7)]	-	2,04E+02	2,53E+01	6,03E+01	2,90E+02	2,54E+01	1,97E-01	MNR	MNR	MNR	MNR	MNR	4,79E+03	MNR	MNR	1,62E+00	2,18E+00	1,29E+00	-3,95E+01

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

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	6,02E+01	2,48E-01	1,37E+01	7,42E+01	2,49E-01	1,15E-02	MNR	MNR	MNR	MNR	MNR	5,39E+03	MNR	MNR	1,58E-02	1,87E-01	4,13E-02	-3,42E+00
Renew. PER as material	MJ	8,02E-01	0,00E+00	1,53E+01	1,61E+01	0,00E+00	-1,53E+01	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	-1,28E-01	-6,73E-01	0,00E+00
Total use of renew. PER	MJ	6,10E+01	2,48E-01	2,90E+01	9,02E+01	2,49E-01	-1,53E+01	MNR	MNR	MNR	MNR	MNR	5,39E+03	MNR	MNR	1,58E-02	5,88E-02	-6,32E-01	-3,42E+00
Non-re. PER as energy	MJ	6,94E+02	2,21E+01	1,85E+01	7,34E+02	2,21E+01	3,57E-01	MNR	MNR	MNR	MNR	MNR	2,64E+04	MNR	MNR	1,40E+00	1,48E+00	9,51E-01	-1,07E+02
Non-re. PER as material	MJ	4,74E+01	0,00E+00	1,49E-01	4,76E+01	0,00E+00	-1,49E-01	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	-2,36E+01	-2,38E+01	0,00E+00
Total use of non-re. PER	MJ	7,41E+02	2,21E+01	1,87E+01	7,82E+02	2,21E+01	2,08E-01	MNR	MNR	MNR	MNR	MNR	2,64E+04	MNR	MNR	1,40E+00	-2,21E+01	-2,28E+01	-1,07E+02
Secondary materials	kg	3,52E+00	6,14E-03	1,10E+00	4,62E+00	6,13E-03	4,22E-04	MNR	MNR	MNR	MNR	MNR	2,73E+00	MNR	MNR	3,90E-04	1,41E-03	2,33E-03	4,68E-01
Renew. secondary fuels	MJ	3,54E-02	6,16E-05	7,77E-02	1,13E-01	6,18E-05	6,75E-06	MNR	MNR	MNR	MNR	MNR	2,21E-02	MNR	MNR	3,93E-06	7,19E-05	1,93E-05	-9,26E-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	4,25E-01	2,85E-03	2,01E-02	4,48E-01	2,86E-03	1,39E-03	MNR	MNR	MNR	MNR	MNR	2,28E+01	MNR	MNR	1,82E-04	3,12E-03	1,65E-03	-4,91E-02

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	9,65E+00	2,93E-02	8,53E-02	9,76E+00	2,93E-02	3,67E-03	MNR	MNR	MNR	MNR	MNR	9,51E+01	MNR	MNR	1,86E-03	8,78E-03	3,70E-02	-1,72E+00
Non-hazardous waste	kg	1,00E+02	4,79E-01	1,72E+00	1,02E+02	4,81E-01	1,10E+00	MNR	MNR	MNR	MNR	MNR	6,02E+03	MNR	MNR	3,06E-02	9,47E-01	2,58E+00	-4,60E+01
Radioactive waste	kg	1,42E-03	1,48E-04	4,03E-05	1,61E-03	1,48E-04	6,25E-07	MNR	MNR	MNR	MNR	MNR	1,93E-01	MNR	MNR	9,39E-06	4,91E-06	0,00E+00	-2,35E-04

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	3,30E+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	7,24E-01	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	3,68E-01	3,68E-01	0,00E+00	0,00E+00	MNR	MNR	MNR	MNR	MNR	0,00E+00	MNR	MNR	0,00E+00	1,59E+01	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_2e	5,89E+01	1,45E+00	1,51E+00	6,19E+01	1,45E+00	4,56E-02	MNR	MNR	MNR	MNR	MNR	1,23E+03	MNR	MNR	9,25E-02	1,81E+00	1,30E+00	-1,07E+01
Ozone depletion Pot.	kg CFC_{-11}e	3,09E-06	2,68E-07	1,15E-07	3,48E-06	2,68E-07	3,96E-09	MNR	MNR	MNR	MNR	MNR	5,48E-05	MNR	MNR	1,70E-08	1,11E-08	8,03E-09	-2,52E-07
Acidification	kg SO_2e	3,45E-01	5,01E-03	5,36E-03	3,55E-01	4,84E-03	2,62E-04	MNR	MNR	MNR	MNR	MNR	6,03E+00	MNR	MNR	3,08E-04	1,12E-03	4,17E-04	-1,34E-01
Eutrophication	kg PO_4^3e	1,32E-01	1,12E-03	3,78E-03	1,37E-01	1,10E-03	1,96E-04	MNR	MNR	MNR	MNR	MNR	4,64E+00	MNR	MNR	7,00E-05	4,72E-04	4,01E-03	-3,34E-02
POCP (“smog”)	kg C_2H_4e	2,38E-02	1,93E-04	4,61E-04	2,44E-02	1,89E-04	8,11E-06	MNR	MNR	MNR	MNR	MNR	2,47E-01	MNR	MNR	1,20E-05	3,81E-05	5,85E-05	-6,13E-03
ADP-elements	kg Sbe	2,64E-03	3,33E-06	7,26E-06	2,65E-03	3,34E-06	1,17E-07	MNR	MNR	MNR	MNR	MNR	1,16E-02	MNR	MNR	2,12E-07	1,00E-05	1,98E-07	-1,54E-03
ADP-fossil	MJ	7,36E+02	2,21E+01	1,89E+01	7,77E+02	2,21E+01	3,57E-01	MNR	MNR	MNR	MNR	MNR	2,64E+04	MNR	MNR	1,40E+00	1,48E+00	9,50E-01	-1,07E+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 refernce variant of a product family, based on various light management scenarios and power inputs of the luminaires within the same product familiy

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.

$$Scaled\ Impact = GWP_{case} * TSF$$

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
BDP265,266,267,268 LED8-4S/730	664.0	5.9	112.5	0.207	0.207	0.155	0.155	0.114	258.8	193.8	193.8	142.5
BDP265,266,267,268 LED10-4S/730	830.0	7.1	116.9	0.249	0.249	0.187	0.187	0.137	311.2	233.8	233.8	171.2
BDP265,266,267,268 LED12-4S/730	996.0	8.2	121.5	0.288	0.288	0.216	0.216	0.158	360.0	270.0	270.0	197.5
BDP265,266,267,268 LED14-4S/730	1162.0	9.4	123.6	0.33	0.33	0.248	0.248	0.182	412.5	310.0	310.0	227.5
BDP265,266,267,268 LED16-4S/730	1328.0	10.6	125.3	0.372	0.372	0.279	0.279	0.205	465.0	348.8	348.8	256.2
BDP265,266,267,268 LED18-4S/730	1494.0	11.8	126.6	0.414	0.414	0.31	0.31	0.228	517.5	387.5	387.5	285.0
BDP265,266,267,268 LED20-4S/730	1640.0	13.2	124.2	0.463	0.463	0.347	0.347	0.255	578.8	433.7	433.7	318.8
BDP265,266,267,268 LED22-4S/730	1804.0	14.6	123.6	0.512	0.512	0.384	0.384	0.282	640.0	480.0	480.0	352.5
BDP265,266,267,268 LED24-4S/730	1968.0	16.0	123.0	0.561	0.561	0.421	0.421	0.309	701.3	526.2	526.2	386.2
BDP265,266,267,268 LED27-4S/730	2214.0	18.0	123.0	0.632	0.632	0.474	0.474	0.348	790.0	592.5	592.5	435.0
BDP265,266,267,268 LED30-4S/730	2460.0	20.5	120.0	0.719	0.719	0.539	0.539	0.395	898.8	673.8	673.8	493.8
BDP265,266,267,268 LED34-4S/730	2788.0	21.0	132.8	0.737	0.737	0.553	0.553	0.405	921.2	691.3	691.3	506.3

BDP265,266,267,268 LED35-4S/730	2870.0	22.0	130.5	0.772	0.772	0.579	0.579	0.425	965.0	723.8	723.8	531.2
BDP265,266,267,268 LED39-4S/730	3198.0	24.5	130.5	0.86	0.86	0.645	0.645	0.473	1075.0	806.2	806.2	591.2
BDP265,266,267,268 LED40-4S/730	3280.0	25.0	131.2	0.877	0.877	0.658	0.658	0.482	1096.2	822.5	822.5	602.5
BDP265,266,267,268 LED44-4S/730	3608.0	28.0	128.9	0.982	0.982	0.736	0.736	0.54	1227.5	920.0	920.0	675.0
BDP265,266,267,268 LED45-4S/730	3690.0	28.5	129.5	1.0	1.0	0.75	0.75	0.55	1250.0	937.5	937.5	687.5
BDP265,266,267,268 LED50-4S/730	4100.0	30.0	136.7	1.053	1.053	0.79	0.79	0.579	1316.2	987.5	987.5	723.8
BDP265,266,267,268 LED55-4S/730	4592.0	33.5	137.1	1.175	1.175	0.881	0.881	0.646	1468.8	1101.2	1101.2	807.5
BDP265,266,267,268 LED59-4S/730	4920.0	36.0	136.7	1.263	1.263	0.947	0.947	0.695	1578.7	1183.8	1183.8	868.7
BDP265,266,267,268 LED64-4S/730	5184.0	39.0	132.9	1.368	1.368	1.026	1.026	0.752	1710.0	1282.5	1282.5	940.0
BDP265,266,267,268 LED69-4S/730	5670.0	42.5	133.4	1.491	1.491	1.118	1.118	0.82	1863.8	1397.5	1397.5	1025.0
BDP265,266,267,268 LED74-4S/730	5994.0	46.0	130.3	1.614	1.614	1.211	1.211	0.888	2017.5	1513.8	1513.8	1110.0
BDP265,266,267,268 LED79-4S/730	6480.0	47.5	136.4	1.667	1.667	1.25	1.25	0.917	2083.8	1562.5	1562.5	1146.2
BDP265,266,267,268 LED84-4S/730	6804.0	51.0	133.4	1.789	1.789	1.342	1.342	0.984	2236.2	1677.5	1677.5	1230.0
BDP265,266,267,268 LED90-4S/730	7290.0	55.0	132.5	1.93	1.93	1.448	1.448	1.062	2412.5	1810.0	1810.0	1327.5
BDP265,266,267,268 LED94-4S/730	7614.0	57.0	133.6	2.0	2.0	1.5	1.5	1.1	2500.0	1875.0	1875.0	1375.0
BDP265,266,267,268 LED109-4S/730	8800.0	68.0	129.4	2.386	2.386	1.79	1.79	1.312	2982.5	2237.5	2237.5	1640.0
BDP265,266,267,268 LED120-4S/730	9480.0	76.0	124.7	2.667	2.667	2.0	2.0	1.467	3333.7	2500.0	2500.0	1833.8
BDP265,266,267,268 LED6-4S/722	498.0	5.6	88.9	0.196	0.196	0.147	0.147	0.108	245.0	183.8	183.8	135.0
BDP265,266,267,268 LED8-4S/722	664.0	7.1	93.5	0.249	0.249	0.187	0.187	0.137	311.2	233.8	233.8	171.2
BDP265,266,267,268 LED10-4S/722	820.0	8.8	93.2	0.309	0.309	0.232	0.232	0.17	386.2	290.0	290.0	212.5
BDP265,266,267,268 LED12-4S/722	996.0	10.0	99.6	0.351	0.351	0.263	0.263	0.193	438.8	328.8	328.8	241.2
BDP265,266,267,268 LED14-4S/722	1162.0	11.6	100.2	0.407	0.407	0.305	0.305	0.224	508.7	381.2	381.2	280.0
BDP265,266,267,268 LED16-4S/722	1312.0	13.2	99.4	0.463	0.463	0.347	0.347	0.255	578.8	433.7	433.7	318.8
BDP265,266,267,268 LED18-4S/722	1476.0	14.8	99.7	0.519	0.519	0.389	0.389	0.285	648.8	486.2	486.2	356.2
BDP265,266,267,268 LED20-4S/722	1640.0	16.6	98.8	0.582	0.582	0.436	0.436	0.32	727.5	545.0	545.0	400.0

BDP265,266,267,268 LED22-4S/722	1804.0	18.4	98.0	0.646	0.646	0.485	0.485	0.355	807.5	606.2	606.2	443.8
BDP265,266,267,268 LED24-4S/722	1968.0	20.5	96.0	0.719	0.719	0.539	0.539	0.395	898.8	673.8	673.8	493.8
BDP265,266,267,268 LED27-4S/722	2214.0	21.0	105.4	0.737	0.737	0.553	0.553	0.405	921.2	691.3	691.3	506.3
BDP265,266,267,268 LED30-4S/722	2460.0	23.5	104.7	0.825	0.825	0.619	0.619	0.454	1031.2	773.8	773.8	567.5
BDP265,266,267,268 LED34-4S/722	2788.0	27.0	103.3	0.947	0.947	0.71	0.71	0.521	1183.8	887.5	887.5	651.2
BDP265,266,267,268 LED35-4S/722	2870.0	27.5	104.4	0.965	0.965	0.724	0.724	0.531	1206.2	905.0	905.0	663.8
BDP265,266,267,268 LED39-4S/722	3159.0	31.0	101.9	1.088	1.088	0.816	0.816	0.598	1360.0	1020.0	1020.0	747.5
BDP265,266,267,268 LED40-4S/722	3240.0	32.0	101.2	1.123	1.123	0.842	0.842	0.618	1403.8	1052.5	1052.5	772.5
BDP265,266,267,268 LED44-4S/722	3564.0	35.5	100.4	1.246	1.246	0.934	0.934	0.685	1557.5	1167.5	1167.5	856.3
BDP265,266,267,268 LED45-4S/722	3645.0	36.5	99.9	1.281	1.281	0.961	0.961	0.705	1601.2	1201.2	1201.2	881.2
BDP265,266,267,268 LED50-4S/722	4050.0	38.0	106.6	1.333	1.333	1.0	1.0	0.733	1666.2	1250.0	1250.0	916.2
BDP265,266,267,268 LED55-4S/722	4536.0	42.5	106.7	1.491	1.491	1.118	1.118	0.82	1863.8	1397.5	1397.5	1025.0
BDP265,266,267,268 LED59-4S/722	4860.0	45.5	106.8	1.596	1.596	1.197	1.197	0.878	1995.0	1496.2	1496.2	1097.5
BDP265,266,267,268 LED64-4S/722	5120.0	50.0	102.4	1.754	1.754	1.316	1.316	0.965	2192.5	1645.0	1645.0	1206.2
BDP265,266,267,268 LED69-4S/722	5600.0	54.0	103.7	1.895	1.895	1.421	1.421	1.042	2368.8	1776.2	1776.2	1302.5
BDP265,266,267,268 LED74-4S/722	5846.0	59.0	99.1	2.07	2.07	1.552	1.552	1.138	2587.5	1940.0	1940.0	1422.5
BDP265,266,267,268 LED79-4S/722	6400.0	60.0	106.7	2.105	2.105	1.579	1.579	1.158	2631.2	1973.8	1973.8	1447.5
BDP265,266,267,268 LED84-4S/722	6720.0	65.0	103.4	2.281	2.281	1.711	1.711	1.255	2851.2	2138.8	2138.8	1568.7
BDP265,266,267,268 LED90-4S/722	7200.0	70.0	102.9	2.456	2.456	1.842	1.842	1.351	3070.0	2302.5	2302.5	1688.8
BDP265,266,267,268 LED94-4S/722	7426.0	74.0	100.4	2.596	2.596	1.947	1.947	1.428	3245.0	2433.8	2433.8	1785.0
BDP265,266,267,268 LED6-4S/830	498.0	5.0	99.6	0.175	0.175	0.131	0.131	0.096	218.8	163.8	163.8	120.0
BDP265,266,267,268 LED8-4S/830	664.0	6.5	102.2	0.228	0.228	0.171	0.171	0.125	285.0	213.8	213.8	156.2
BDP265,266,267,268 LED10-4S/830	830.0	7.9	105.1	0.277	0.277	0.208	0.208	0.152	346.3	260.0	260.0	190.0
BDP265,266,267,268 LED12-4S/830	996.0	9.1	109.5	0.319	0.319	0.239	0.239	0.175	398.8	298.8	298.8	218.8
BDP265,266,267,268 LED14-4S/830	1162.0	10.4	111.7	0.365	0.365	0.274	0.274	0.201	456.2	342.5	342.5	251.3

BDP265,266,267,268 LED16-4S/830	1328.0	11.8	112.5	0.414	0.414	0.31	0.31	0.228	517.5	387.5	387.5	285.0
BDP265,266,267,268 LED18-4S/830	1476.0	13.2	111.8	0.463	0.463	0.347	0.347	0.255	578.8	433.7	433.7	318.8
BDP265,266,267,268 LED20-4S/830	1640.0	14.8	110.8	0.519	0.519	0.389	0.389	0.285	648.8	486.2	486.2	356.2
BDP265,266,267,268 LED22-4S/830	1804.0	16.4	110.0	0.575	0.575	0.431	0.431	0.316	718.8	538.8	538.8	395.0
BDP265,266,267,268 LED24-4S/830	1968.0	18.0	109.3	0.632	0.632	0.474	0.474	0.348	790.0	592.5	592.5	435.0
BDP265,266,267,268 LED27-4S/830	2214.0	19.0	116.5	0.667	0.667	0.5	0.5	0.367	833.8	625.0	625.0	458.8
BDP265,266,267,268 LED30-4S/830	2460.0	21.0	117.1	0.737	0.737	0.553	0.553	0.405	921.2	691.3	691.3	506.3
BDP265,266,267,268 LED34-4S/830	2788.0	24.0	116.2	0.842	0.842	0.632	0.632	0.463	1052.5	790.0	790.0	578.8
BDP265,266,267,268 LED35-4S/830	2870.0	24.5	117.1	0.86	0.86	0.645	0.645	0.473	1075.0	806.2	806.2	591.2
BDP265,266,267,268 LED39-4S/830	3198.0	27.5	116.3	0.965	0.965	0.724	0.724	0.531	1206.2	905.0	905.0	663.8
BDP265,266,267,268 LED40-4S/830	3280.0	28.5	115.1	1.0	1.0	0.75	0.75	0.55	1250.0	937.5	937.5	687.5
BDP265,266,267,268 LED44-4S/830	3564.0	31.5	113.1	1.105	1.105	0.829	0.829	0.608	1381.2	1036.2	1036.2	760.0
BDP265,266,267,268 LED45-4S/830	3645.0	32.0	113.9	1.123	1.123	0.842	0.842	0.618	1403.8	1052.5	1052.5	772.5
BDP265,266,267,268 LED50-4S/830	4050.0	36.0	112.5	1.263	1.263	0.947	0.947	0.695	1578.7	1183.8	1183.8	868.7
BDP265,266,267,268 LED55-4S/830	4536.0	37.5	121.0	1.316	1.316	0.987	0.987	0.724	1645.0	1233.8	1233.8	905.0
BDP265,266,267,268 LED59-4S/830	4860.0	40.5	120.0	1.421	1.421	1.066	1.066	0.782	1776.2	1332.5	1332.5	977.5
BDP265,266,267,268 LED64-4S/830	5184.0	44.5	116.5	1.561	1.561	1.171	1.171	0.859	1951.2	1463.8	1463.8	1073.8
BDP265,266,267,268 LED69-4S/830	5600.0	48.0	116.7	1.684	1.684	1.263	1.263	0.926	2105.0	1578.7	1578.7	1157.5
BDP265,266,267,268 LED74-4S/830	5920.0	52.0	113.8	1.825	1.825	1.369	1.369	1.004	2281.2	1711.2	1711.2	1255.0
BDP265,266,267,268 LED79-4S/830	6480.0	54.0	120.0	1.895	1.895	1.421	1.421	1.042	2368.8	1776.2	1776.2	1302.5
BDP265,266,267,268 LED84-4S/830	6804.0	57.0	119.4	2.0	2.0	1.5	1.5	1.1	2500.0	1875.0	1875.0	1375.0
BDP265,266,267,268 LED90-4S/830	7200.0	62.0	116.1	2.175	2.175	1.631	1.631	1.196	2718.8	2038.8	2038.8	1495.0
BDP265,266,267,268 LED94-4S/830	7520.0	65.0	115.7	2.281	2.281	1.711	1.711	1.255	2851.2	2138.8	2138.8	1568.7
BDP265,266,267,268 LED109-4S/830	8690.0	77.0	112.9	2.702	2.702	2.026	2.026	1.486	3377.5	2532.5	2532.5	1857.5

** 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 refernce 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 familiy.

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 (Olum) and reference service lifetime (RSL) of the product to estimate the final environmental impact. The scaled impact (SIpep) 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 (P*GSF*), 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
BDP265,266,267,268 LED8-4S/730	664.0	5.9	112.5	0.207	0.109	0.082	0.082	0.06	136.2	102.5	102.5	75.0
BDP265,266,267,268 LED10-4S/730	830.0	7.1	116.9	0.249	0.105	0.079	0.079	0.058	131.2	98.8	98.8	72.5
BDP265,266,267,268 LED12-4S/730	996.0	8.2	121.5	0.288	0.101	0.076	0.076	0.056	126.3	95.0	95.0	70.0
BDP265,266,267,268 LED14-4S/730	1162.0	9.4	123.6	0.33	0.099	0.074	0.074	0.054	123.8	92.5	92.5	67.5
BDP265,266,267,268 LED16-4S/730	1328.0	10.6	125.3	0.372	0.098	0.074	0.074	0.054	122.5	92.5	92.5	67.5
BDP265,266,267,268 LED18-4S/730	1494.0	11.8	126.6	0.414	0.097	0.073	0.073	0.053	121.2	91.2	91.2	66.2
BDP265,266,267,268 LED20-4S/730	1640.0	13.2	124.2	0.463	0.099	0.074	0.074	0.054	123.8	92.5	92.5	67.5
BDP265,266,267,268 LED22-4S/730	1804.0	14.6	123.6	0.512	0.099	0.074	0.074	0.054	123.8	92.5	92.5	67.5
BDP265,266,267,268 LED24-4S/730	1968.0	16.0	123.0	0.561	0.1	0.075	0.075	0.055	125.0	93.8	93.8	68.8
BDP265,266,267,268 LED27-4S/730	2214.0	18.0	123.0	0.632	0.1	0.075	0.075	0.055	125.0	93.8	93.8	68.8
BDP265,266,267,268 LED30-4S/730	2460.0	20.5	120.0	0.719	0.102	0.076	0.076	0.056	127.5	95.0	95.0	70.0
BDP265,266,267,268 LED34-4S/730	2788.0	21.0	132.8	0.737	0.093	0.07	0.07	0.051	116.2	87.5	87.5	63.7
BDP265,266,267,268 LED35-4S/730	2870.0	22.0	130.5	0.772	0.094	0.07	0.07	0.052	117.5	87.5	87.5	65.0
BDP265,266,267,268 LED39-4S/730	3198.0	24.5	130.5	0.86	0.094	0.07	0.07	0.052	117.5	87.5	87.5	65.0
BDP265,266,267,268 LED40-4S/730	3280.0	25.0	131.2	0.877	0.094	0.07	0.07	0.052	117.5	87.5	87.5	65.0
BDP265,266,267,268 LED44-4S/730	3608.0	28.0	128.9	0.982	0.095	0.071	0.071	0.052	118.8	88.7	88.7	65.0
BDP265,266,267,268 LED45-4S/730	3690.0	28.5	129.5	1.0	0.095	0.071	0.071	0.052	118.8	88.7	88.7	65.0

BDP265,266,267,268 LED50-4S/730	4100.0	30.0	136.7	1.053	0.09	0.068	0.068	0.05	112.5	85.0	85.0	62.5
BDP265,266,267,268 LED55-4S/730	4592.0	33.5	137.1	1.175	0.09	0.068	0.068	0.05	112.5	85.0	85.0	62.5
BDP265,266,267,268 LED59-4S/730	4920.0	36.0	136.7	1.263	0.09	0.068	0.068	0.05	112.5	85.0	85.0	62.5
BDP265,266,267,268 LED64-4S/730	5184.0	39.0	132.9	1.368	0.092	0.069	0.069	0.051	115.0	86.3	86.3	63.7
BDP265,266,267,268 LED69-4S/730	5670.0	42.5	133.4	1.491	0.092	0.069	0.069	0.051	115.0	86.3	86.3	63.7
BDP265,266,267,268 LED74-4S/730	5994.0	46.0	130.3	1.614	0.094	0.07	0.07	0.052	117.5	87.5	87.5	65.0
BDP265,266,267,268 LED79-4S/730	6480.0	47.5	136.4	1.667	0.09	0.068	0.068	0.05	112.5	85.0	85.0	62.5
BDP265,266,267,268 LED84-4S/730	6804.0	51.0	133.4	1.789	0.092	0.069	0.069	0.051	115.0	86.3	86.3	63.7
BDP265,266,267,268 LED90-4S/730	7290.0	55.0	132.5	1.93	0.093	0.07	0.07	0.051	116.2	87.5	87.5	63.7
BDP265,266,267,268 LED94-4S/730	7614.0	57.0	133.6	2.0	0.092	0.069	0.069	0.051	115.0	86.3	86.3	63.7
BDP265,266,267,268 LED109-4S/730	8800.0	68.0	129.4	2.386	0.095	0.071	0.071	0.052	118.8	88.7	88.7	65.0
BDP265,266,267,268 LED120-4S/730	9480.0	76.0	124.7	2.667	0.098	0.074	0.074	0.054	122.5	92.5	92.5	67.5
BDP265,266,267,268 LED6-4S/722	498.0	5.6	88.9	0.196	0.138	0.104	0.104	0.076	172.5	130.0	130.0	95.0
BDP265,266,267,268 LED8-4S/722	664.0	7.1	93.5	0.249	0.131	0.098	0.098	0.072	163.8	122.5	122.5	90.0
BDP265,266,267,268 LED10-4S/722	820.0	8.8	93.2	0.309	0.132	0.099	0.099	0.073	165.0	123.8	123.8	91.2
BDP265,266,267,268 LED12-4S/722	996.0	10.0	99.6	0.351	0.123	0.092	0.092	0.068	153.8	115.0	115.0	85.0
BDP265,266,267,268 LED14-4S/722	1162.0	11.6	100.2	0.407	0.123	0.092	0.092	0.068	153.8	115.0	115.0	85.0
BDP265,266,267,268 LED16-4S/722	1312.0	13.2	99.4	0.463	0.124	0.093	0.093	0.068	155.0	116.2	116.2	85.0
BDP265,266,267,268 LED18-4S/722	1476.0	14.8	99.7	0.519	0.123	0.092	0.092	0.068	153.8	115.0	115.0	85.0
BDP265,266,267,268 LED20-4S/722	1640.0	16.6	98.8	0.582	0.124	0.093	0.093	0.068	155.0	116.2	116.2	85.0
BDP265,266,267,268 LED22-4S/722	1804.0	18.4	98.0	0.646	0.125	0.094	0.094	0.069	156.2	117.5	117.5	86.3
BDP265,266,267,268 LED24-4S/722	1968.0	20.5	96.0	0.719	0.128	0.096	0.096	0.07	160.0	120.0	120.0	87.5
BDP265,266,267,268 LED27-4S/722	2214.0	21.0	105.4	0.737	0.117	0.088	0.088	0.064	146.2	110.0	110.0	80.0
BDP265,266,267,268 LED30-4S/722	2460.0	23.5	104.7	0.825	0.117	0.088	0.088	0.064	146.2	110.0	110.0	80.0
BDP265,266,267,268 LED34-4S/722	2788.0	27.0	103.3	0.947	0.119	0.089	0.089	0.065	148.8	111.2	111.2	81.2

BDP265,266,267,268 LED35-4S/722	2870.0	27.5	104.4	0.965	0.118	0.088	0.088	0.065	147.5	110.0	110.0	81.2
BDP265,266,267,268 LED39-4S/722	3159.0	31.0	101.9	1.088	0.121	0.091	0.091	0.067	151.2	113.8	113.8	83.8
BDP265,266,267,268 LED40-4S/722	3240.0	32.0	101.2	1.123	0.121	0.091	0.091	0.067	151.2	113.8	113.8	83.8
BDP265,266,267,268 LED44-4S/722	3564.0	35.5	100.4	1.246	0.122	0.092	0.092	0.067	152.5	115.0	115.0	83.8
BDP265,266,267,268 LED45-4S/722	3645.0	36.5	99.9	1.281	0.123	0.092	0.092	0.068	153.8	115.0	115.0	85.0
BDP265,266,267,268 LED50-4S/722	4050.0	38.0	106.6	1.333	0.115	0.086	0.086	0.063	143.8	107.5	107.5	78.8
BDP265,266,267,268 LED55-4S/722	4536.0	42.5	106.7	1.491	0.115	0.086	0.086	0.063	143.8	107.5	107.5	78.8
BDP265,266,267,268 LED59-4S/722	4860.0	45.5	106.8	1.596	0.115	0.086	0.086	0.063	143.8	107.5	107.5	78.8
BDP265,266,267,268 LED64-4S/722	5120.0	50.0	102.4	1.754	0.12	0.09	0.09	0.066	150.0	112.5	112.5	82.5
BDP265,266,267,268 LED69-4S/722	5600.0	54.0	103.7	1.895	0.118	0.088	0.088	0.065	147.5	110.0	110.0	81.2
BDP265,266,267,268 LED74-4S/722	5846.0	59.0	99.1	2.07	0.124	0.093	0.093	0.068	155.0	116.2	116.2	85.0
BDP265,266,267,268 LED79-4S/722	6400.0	60.0	106.7	2.105	0.115	0.086	0.086	0.063	143.8	107.5	107.5	78.8
BDP265,266,267,268 LED84-4S/722	6720.0	65.0	103.4	2.281	0.119	0.089	0.089	0.065	148.8	111.2	111.2	81.2
BDP265,266,267,268 LED90-4S/722	7200.0	70.0	102.9	2.456	0.119	0.089	0.089	0.065	148.8	111.2	111.2	81.2
BDP265,266,267,268 LED94-4S/722	7426.0	74.0	100.4	2.596	0.122	0.092	0.092	0.067	152.5	115.0	115.0	83.8
BDP265,266,267,268 LED6-4S/830	498.0	5.0	99.6	0.175	0.123	0.092	0.092	0.068	153.8	115.0	115.0	85.0
BDP265,266,267,268 LED8-4S/830	664.0	6.5	102.2	0.228	0.12	0.09	0.09	0.066	150.0	112.5	112.5	82.5
BDP265,266,267,268 LED10-4S/830	830.0	7.9	105.1	0.277	0.117	0.088	0.088	0.064	146.2	110.0	110.0	80.0
BDP265,266,267,268 LED12-4S/830	996.0	9.1	109.5	0.319	0.112	0.084	0.084	0.062	140.0	105.0	105.0	77.5
BDP265,266,267,268 LED14-4S/830	1162.0	10.4	111.7	0.365	0.11	0.082	0.082	0.061	137.5	102.5	102.5	76.2
BDP265,266,267,268 LED16-4S/830	1328.0	11.8	112.5	0.414	0.109	0.082	0.082	0.06	136.2	102.5	102.5	75.0
BDP265,266,267,268 LED18-4S/830	1476.0	13.2	111.8	0.463	0.11	0.082	0.082	0.061	137.5	102.5	102.5	76.2
BDP265,266,267,268 LED20-4S/830	1640.0	14.8	110.8	0.519	0.111	0.083	0.083	0.061	138.8	103.8	103.8	76.2
BDP265,266,267,268 LED22-4S/830	1804.0	16.4	110.0	0.575	0.112	0.084	0.084	0.062	140.0	105.0	105.0	77.5
BDP265,266,267,268 LED24-4S/830	1968.0	18.0	109.3	0.632	0.112	0.084	0.084	0.062	140.0	105.0	105.0	77.5

BDP265,266,267,268 LED27-4S/830	2214.0	19.0	116.5	0.667	0.105	0.079	0.079	0.058	131.2	98.8	98.8	72.5
BDP265,266,267,268 LED30-4S/830	2460.0	21.0	117.1	0.737	0.105	0.079	0.079	0.058	131.2	98.8	98.8	72.5
BDP265,266,267,268 LED34-4S/830	2788.0	24.0	116.2	0.842	0.106	0.08	0.08	0.058	132.5	100.0	100.0	72.5
BDP265,266,267,268 LED35-4S/830	2870.0	24.5	117.1	0.86	0.105	0.079	0.079	0.058	131.2	98.8	98.8	72.5
BDP265,266,267,268 LED39-4S/830	3198.0	27.5	116.3	0.965	0.106	0.08	0.08	0.058	132.5	100.0	100.0	72.5
BDP265,266,267,268 LED40-4S/830	3280.0	28.5	115.1	1.0	0.107	0.08	0.08	0.059	133.8	100.0	100.0	73.8
BDP265,266,267,268 LED44-4S/830	3564.0	31.5	113.1	1.105	0.109	0.082	0.082	0.06	136.2	102.5	102.5	75.0
BDP265,266,267,268 LED45-4S/830	3645.0	32.0	113.9	1.123	0.108	0.081	0.081	0.059	135.0	101.2	101.2	73.8
BDP265,266,267,268 LED50-4S/830	4050.0	36.0	112.5	1.263	0.109	0.082	0.082	0.06	136.2	102.5	102.5	75.0
BDP265,266,267,268 LED55-4S/830	4536.0	37.5	121.0	1.316	0.102	0.076	0.076	0.056	127.5	95.0	95.0	70.0
BDP265,266,267,268 LED59-4S/830	4860.0	40.5	120.0	1.421	0.102	0.076	0.076	0.056	127.5	95.0	95.0	70.0
BDP265,266,267,268 LED64-4S/830	5184.0	44.5	116.5	1.561	0.105	0.079	0.079	0.058	131.2	98.8	98.8	72.5
BDP265,266,267,268 LED69-4S/830	5600.0	48.0	116.7	1.684	0.105	0.079	0.079	0.058	131.2	98.8	98.8	72.5
BDP265,266,267,268 LED74-4S/830	5920.0	52.0	113.8	1.825	0.108	0.081	0.081	0.059	135.0	101.2	101.2	73.8
BDP265,266,267,268 LED79-4S/830	6480.0	54.0	120.0	1.895	0.102	0.076	0.076	0.056	127.5	95.0	95.0	70.0
BDP265,266,267,268 LED84-4S/830	6804.0	57.0	119.4	2.0	0.103	0.077	0.077	0.057	128.8	96.2	96.2	71.2
BDP265,266,267,268 LED90-4S/830	7200.0	62.0	116.1	2.175	0.106	0.08	0.08	0.058	132.5	100.0	100.0	72.5
BDP265,266,267,268 LED94-4S/830	7520.0	65.0	115.7	2.281	0.106	0.08	0.08	0.058	132.5	100.0	100.0	72.5
BDP265,266,267,268 LED109-4S/830	8690.0	77.0	112.9	2.702	0.109	0.082	0.082	0.06	136.2	102.5	102.5	75.0

** 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.*

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 highlighed 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 CO2e	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 multilplying for the Finland value from the same table (FINLAND = 2,70E-01).

Thus, the calculation of this example would be:

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

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

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

Source Ecoinvent 3.8