ENVIRONMENTAL PRODUCT DECLARATION

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

Luma Gen 2
BGP713 LED120-4S/740 I DM11 PSU 42/60P
Signify N.V.

EPD HUB
Publishing date 2024-10-16

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Signify
Address	5600 VB Eindhoven, The Netherlands
Contact details	sustainability@signify.com
Website	https://www.signify.com/global

EPD STANDARDS, SCOPE AND VERIFICATION

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

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

PRODUCT

Product name	Luma Gen 2
Additional labels	BGP713 LED120-4S/740 I DM11 PSU 42/60P
Product reference	910925868405
Place of production	POLAND
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	8.093 kg
GWP-fossil, A1-A3 (kgCO2e)	7.27E+01
GWP-total, A1-A3 (kgCO2e)	7.09E+01
Secondary material, inputs (%)	52.3
Secondary material, outputs (%)	59.9
Total energy use, A1-A3 (kWh)	251
Net fresh water use, A1-A3 (m3e)	0.43

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

Luma gen2 is the next generation of the Luma LED luminaire family, fully optimized to become your long-term lighting and innovation partner. While keeping the distinctive design characteristics of the first generation, Luma gen2 gives you the benefits of the latest technologies thanks to its future-proof System Ready architecture, use of optimized Ledgine LED and optical platform ensuring best in class lighting performance in a broad range of applications. It also offers improved serviceability. Installation has also become easier and faster, and thanks to the Service tag, you have access to all relevant documentations onsite. Also, the cable feed-through has been redesigned and access to the gear components is easy thanks to top down tool-less access. Luma gen2 also offers all connectivity and dimming options available today and thanks to being System Ready, it can also to be paired with lighting management systems such as Interact City or existing and upcoming sensor innovations. The Luma gen2 has been developed to optimize and simplify spare part repair and maintenance work using a new plug & play GearFlex module containing all electrical components in an easy to handle and accessible box inside the housing. As a company conscious about the impact of light on the environment and biodiversity, we also equipped the Luma gen2 with dedicated light recipes that help with maintaining the optimal ecosystems for bats or preserve a dark night sky.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	70.7	EU , APAC
Minerals	13.4	EU
Fossil materials	15.9	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	0.304

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 Unit
Mass per declared unit	8.093 kg
Functional unit	10680 Lumens over 100000 hours
Reference service life	100000 hours

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0.1 % (1000 ppm).

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
x	x	x	x	x	MNR	MNR	MNR	MNR	MNR	x	MNR	MNR	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demol.	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not relevant = MNR.

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, electricity, and waste formed in the production processes at Signify's manufacturing facilities are included in this stage. The product is made of metals, plastics, and electronic components. All components are transported to Signify's production facility, where the main manufacturing processes primarily are associated with assembly. The finished product is packaged with polyethylene, cardboard, and/or paper as packaging material before being sent to customers. Manufacturing loss, ancillaries and wastes are calculated according to the data that each manufacturing site is sharing with Signify. The total annual amount of waste in kg is allocated to the total annual production in kg at the specific manufacturing site responsible for the production of the studied luminaire. Thus, it is possible to allocate it according to the weight of the product analysed in this study. Some of the waste are due to ancillary materials used during manufacturing while the rest is due to material losses.

TRANSPORT AND INSTALLATION (A4-A5)

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

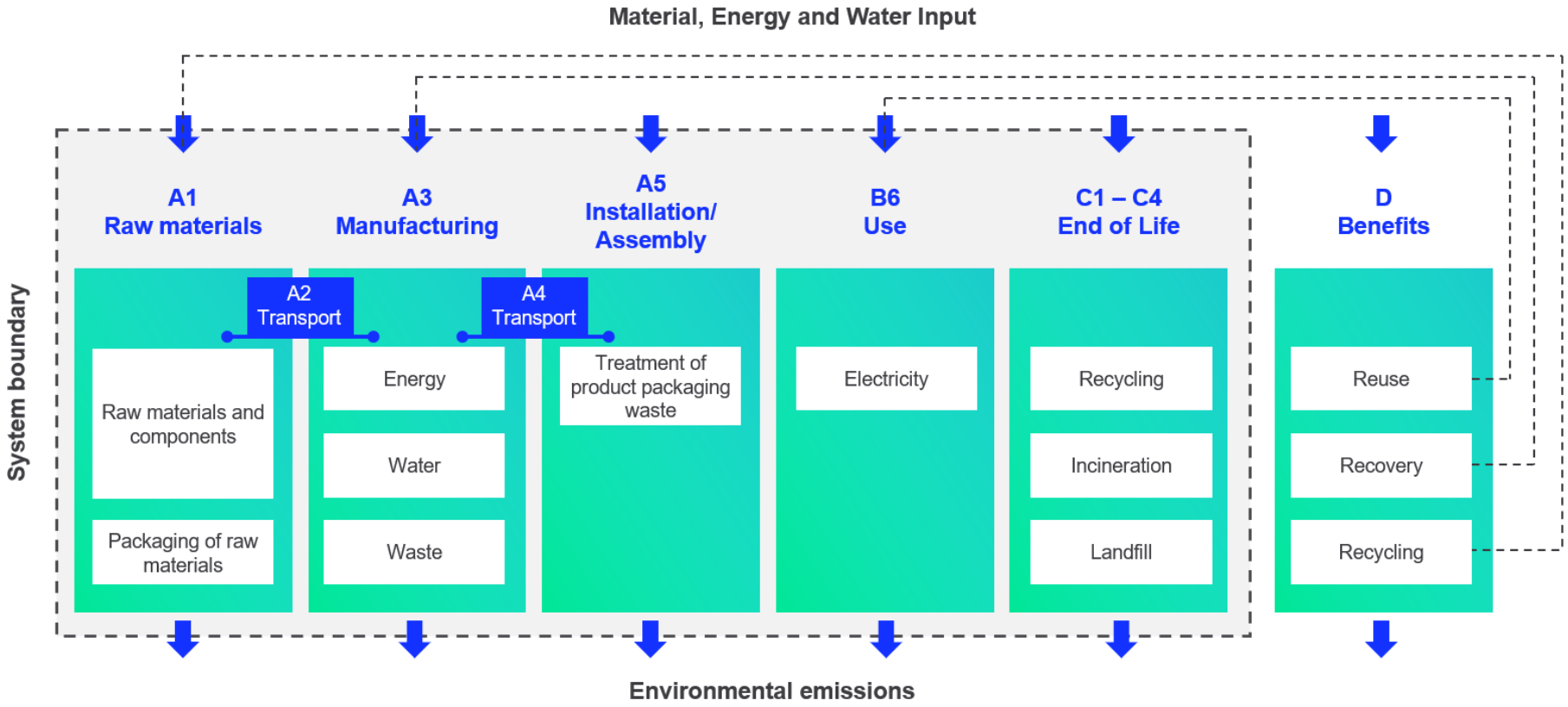
PRODUCT USE AND MAINTENANCE (B1-B7)

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

PRODUCT END OF LIFE (C1-C4, D)

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

SYSTEM BOUNDARY



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

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

ALLOCATION, ESTIMATES AND ASSUMPTIONS

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

Data type	Allocation
Raw materials	No allocation
Packaging materials	No allocation
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

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

AVERAGES AND VARIABILITY

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

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

LCA SOFTWARE AND BIBLIOGRAPHY

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

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	6.89E+01	1.69E+00	3.07E-01	7.09E+01	1.69E+00	1.15E+00	MNR	MNR	MNR	MNR	MNR	2.81E+03	MNR	MNR	1.16E-01	1.01E+00	1.66E+00	-1.21E+01
GWP – fossil	kg CO_2e	6.96E+01	1.69E+00	1.40E+00	7.27E+01	1.69E+00	5.43E-02	MNR	MNR	MNR	MNR	MNR	2.81E+03	MNR	MNR	1.16E-01	1.01E+00	8.10E-01	-1.21E+01
GWP – biogenic	kg CO_2e	-8.38E-01	0.00E+00	-1.10E+00	-1.94E+00	6.53E-04	1.10E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	0.00E+00	8.49E-01	-2.60E-03
GWP – LULUC	kg CO_2e	1.21E-01	9.84E-04	5.89E-03	1.28E-01	6.23E-04	1.00E-05	MNR	MNR	MNR	MNR	MNR	6.56E+00	MNR	MNR	4.27E-05	1.55E-04	1.11E-04	-1.37E-03
Ozone depletion pot.	kg $CFC_{-11}e$	3.98E-06	3.57E-07	1.85E-07	4.52E-06	3.88E-07	2.91E-09	MNR	MNR	MNR	MNR	MNR	1.42E-04	MNR	MNR	2.66E-08	1.34E-08	1.23E-08	-3.28E-07
Acidification potential	mol H^+e	4.69E-01	3.54E-02	5.50E-03	5.10E-01	7.14E-03	2.32E-04	MNR	MNR	MNR	MNR	MNR	1.60E+01	MNR	MNR	4.90E-04	1.41E-03	6.16E-04	-1.33E-01
EP-freshwater[2)]	kg Pe	4.26E-03	9.22E-06	5.31E-05	4.32E-03	1.38E-05	3.06E-07	MNR	MNR	MNR	MNR	MNR	2.97E-01	MNR	MNR	9.48E-07	4.93E-06	6.08E-06	-7.79E-04
EP-marine	kg Ne	7.36E-02	8.85E-03	2.30E-03	8.47E-02	2.12E-03	9.87E-05	MNR	MNR	MNR	MNR	MNR	2.13E+00	MNR	MNR	1.46E-04	3.53E-04	1.28E-03	-1.37E-02
EP-terrestrial	mol Ne	7.85E-01	9.83E-02	1.52E-02	8.98E-01	2.34E-02	1.02E-03	MNR	MNR	MNR	MNR	MNR	2.42E+01	MNR	MNR	1.61E-03	3.94E-03	2.04E-03	-1.60E-01
POCP ("smog")[3)]	kg NMVOCe	2.41E-01	2.60E-02	4.66E-03	2.72E-01	7.49E-03	2.55E-04	MNR	MNR	MNR	MNR	MNR	6.62E+00	MNR	MNR	5.14E-04	1.05E-03	7.61E-04	-4.62E-02
ADP-minerals & metals[4)]	kg Sbe	2.58E-03	3.00E-06	7.23E-06	2.59E-03	3.96E-06	9.57E-08	MNR	MNR	MNR	MNR	MNR	2.62E-02	MNR	MNR	2.71E-07	1.17E-05	2.54E-07	-4.94E-04
ADP-fossil resources	MJ	7.96E+02	2.29E+01	1.96E+01	8.38E+02	2.53E+01	2.28E-01	MNR	MNR	MNR	MNR	MNR	5.97E+04	MNR	MNR	1.74E+00	1.47E+00	1.20E+00	-1.18E+02
Water use[5)]	m^3e depr.	2.38E+01	8.37E-02	5.33E-01	2.44E+01	1.13E-01	5.38E-02	MNR	MNR	MNR	MNR	MNR	1.63E+03	MNR	MNR	7.78E-03	5.79E-02	7.07E-02	-8.83E-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	5.14E-06	1.11E-07	9.47E-08	5.34E-06	1.94E-07	2.13E-09	MNR	MNR	MNR	MNR	MNR	5.27E-05	MNR	MNR	1.33E-08	1.73E-08	9.68E-09	-7.06E-07
Ionizing radiation[6)]	kBq U235e	3.87E+00	1.07E-01	4.81E-02	4.03E+00	1.21E-01	8.17E-04	MNR	MNR	MNR	MNR	MNR	1.62E+03	MNR	MNR	8.28E-03	8.58E-03	6.38E-03	-7.08E-01
Ecotoxicity (freshwater)	CTUe	3.10E+03	1.73E+01	4.36E+01	3.16E+03	2.28E+01	1.54E+00	MNR	MNR	MNR	MNR	MNR	4.06E+04	MNR	MNR	1.56E+00	7.79E+00	5.09E+02	-3.24E+02
Human toxicity, cancer	CTUh	2.07E-07	8.28E-10	9.24E-10	2.09E-07	5.60E-10	7.18E-11	MNR	MNR	MNR	MNR	MNR	1.33E-06	MNR	MNR	3.84E-11	2.55E-10	6.14E-10	-2.51E-09
Human tox. non-cancer	CTUh	2.77E-06	1.43E-08	1.51E-08	2.80E-06	2.26E-08	3.01E-09	MNR	MNR	MNR	MNR	MNR	4.37E-05	MNR	MNR	1.55E-09	1.06E-08	1.78E-08	-4.71E-07
SQP[7)]	-	3.39E+02	1.37E+01	3.52E+01	3.88E+02	2.92E+01	1.24E-01	MNR	MNR	MNR	MNR	MNR	1.08E+04	MNR	MNR	2.00E+00	2.55E+00	1.78E+00	-2.84E+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	7.49E+01	2.03E-01	1.55E+01	9.06E+01	2.86E-01	7.42E-03	MNR	MNR	MNR	MNR	MNR	1.22E+04	MNR	MNR	1.96E-02	2.02E-01	5.27E-02	-2.40E+00
Renew. PER as material	MJ	8.38E+00	0.00E+00	9.66E+00	1.80E+01	0.00E+00	-9.66E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	-2.28E-01	-8.15E+00	0.00E+00
Total use of renew. PER	MJ	8.33E+01	2.03E-01	2.52E+01	1.09E+02	2.86E-01	-9.65E+00	MNR	MNR	MNR	MNR	MNR	1.22E+04	MNR	MNR	1.96E-02	-2.61E-02	-8.10E+00	-2.40E+00
Non-re. PER as energy	MJ	7.72E+02	2.29E+01	1.83E+01	8.14E+02	2.53E+01	2.28E-01	MNR	MNR	MNR	MNR	MNR	5.96E+04	MNR	MNR	1.74E+00	1.47E+00	1.20E+00	-1.18E+02
Non-re. PER as material	MJ	3.59E+01	0.00E+00	6.07E-01	3.65E+01	0.00E+00	-6.07E-01	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	-1.72E+01	-1.88E+01	0.00E+00
Total use of non-re. PER	MJ	8.08E+02	2.29E+01	1.89E+01	8.50E+02	2.53E+01	-3.78E-01	MNR	MNR	MNR	MNR	MNR	5.96E+04	MNR	MNR	1.74E+00	-1.57E+01	-1.76E+01	-1.18E+02
Secondary materials	kg	4.23E+00	8.62E-03	7.25E-01	4.96E+00	7.04E-03	2.72E-04	MNR	MNR	MNR	MNR	MNR	6.15E+00	MNR	MNR	4.83E-04	1.48E-03	2.84E-03	4.85E-01
Renew. secondary fuels	MJ	1.23E-01	4.45E-05	5.16E-02	1.75E-01	7.10E-05	4.38E-06	MNR	MNR	MNR	MNR	MNR	4.98E-02	MNR	MNR	4.87E-06	7.39E-05	2.22E-05	-6.00E-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	4.10E-01	2.15E-03	1.49E-02	4.27E-01	3.28E-03	9.09E-04	MNR	MNR	MNR	MNR	MNR	5.14E+01	MNR	MNR	2.25E-04	1.98E-03	1.21E-03	-4.09E-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	1.19E+01	3.09E-02	6.67E-02	1.20E+01	3.36E-02	1.29E-03	MNR	MNR	MNR	MNR	MNR	2.14E+02	MNR	MNR	2.31E-03	9.83E-03	8.46E-03	-1.90E+00
Non-hazardous waste	kg	1.15E+02	3.66E-01	1.11E+00	1.17E+02	5.52E-01	7.37E-01	MNR	MNR	MNR	MNR	MNR	1.36E+04	MNR	MNR	3.79E-02	6.97E-01	3.37E+00	-3.84E+01
Radioactive waste	kg	1.69E-03	1.58E-04	3.01E-05	1.88E-03	1.70E-04	3.78E-07	MNR	MNR	MNR	MNR	MNR	4.35E-01	MNR	MNR	1.16E-05	5.70E-06	0.00E+00	-2.61E-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	4.47E+00	0.00E+00	0.00E+00
Materials for energy rec	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	3.80E-01	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	2.82E-01	2.82E-01	0.00E+00	0.00E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	8.36E+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_2e	6.80E+01	1.68E+00	1.43E+00	7.12E+01	1.67E+00	5.29E-02	MNR	MNR	MNR	MNR	MNR	2.78E+03	MNR	MNR	1.15E-01	1.01E+00	1.29E+00	-1.19E+01
Ozone depletion Pot.	kg CFC_{-11}e	3.57E-06	2.83E-07	1.58E-07	4.01E-06	3.07E-07	2.54E-09	MNR	MNR	MNR	MNR	MNR	1.24E-04	MNR	MNR	2.11E-08	1.10E-08	9.92E-09	-2.78E-07
Acidification	kg SO_2e	3.94E-01	2.82E-02	4.10E-03	4.26E-01	5.55E-03	1.69E-04	MNR	MNR	MNR	MNR	MNR	1.36E+01	MNR	MNR	3.81E-04	1.12E-03	4.76E-04	-1.15E-01
Eutrophication	kg PO_4^3e	1.42E-01	3.41E-03	2.66E-03	1.48E-01	1.26E-03	1.26E-04	MNR	MNR	MNR	MNR	MNR	1.05E+01	MNR	MNR	8.67E-05	4.12E-04	3.99E-03	-3.12E-02
POCP (“smog”)	kg C_2H_4e	2.59E-02	7.56E-04	3.22E-04	2.69E-02	2.17E-04	5.21E-06	MNR	MNR	MNR	MNR	MNR	5.56E-01	MNR	MNR	1.49E-05	4.02E-05	1.39E-04	-5.56E-03
ADP-elements	kg Sbe	2.84E-03	2.93E-06	6.50E-06	2.85E-03	3.83E-06	7.53E-08	MNR	MNR	MNR	MNR	MNR	2.61E-02	MNR	MNR	2.63E-07	1.17E-05	2.33E-07	-4.92E-04
ADP-fossil	MJ	8.08E+02	2.29E+01	1.95E+01	8.51E+02	2.53E+01	2.28E-01	MNR	MNR	MNR	MNR	MNR	5.96E+04	MNR	MNR	1.74E+00	1.47E+00	1.20E+00	-1.18E+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 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
BGP713 LED8-4S/740	728.0	5.6	130.0	0.079	0.079	0.059	0.059	0.043	222.0	165.8	165.8	120.8
BGP713 LED10-4S/740	900.0	6.8	132.4	0.096	0.096	0.072	0.072	0.053	269.8	202.3	202.3	148.9
BGP713 LED12-4S/740	1080.0	7.8	138.5	0.11	0.11	0.083	0.083	0.061	309.1	233.2	233.2	171.4
BGP713 LED14-4S/740	1260.0	9.0	140.0	0.127	0.127	0.095	0.095	0.07	356.9	266.9	266.9	196.7
BGP713 LED16-4S/740	1440.0	10.2	141.2	0.144	0.144	0.108	0.108	0.079	404.6	303.5	303.5	222.0
BGP713 LED18-4S/740	1620.0	11.4	142.1	0.161	0.161	0.121	0.121	0.089	452.4	340.0	340.0	250.1
BGP713 LED20-4S/740	1800.0	12.6	142.9	0.177	0.177	0.133	0.133	0.097	497.4	373.7	373.7	272.6
BGP713 LED22-4S/740	1980.0	13.8	143.5	0.194	0.194	0.146	0.146	0.107	545.1	410.3	410.3	300.7
BGP713 LED24-4S/740	2160.0	14.4	150.0	0.203	0.203	0.152	0.152	0.112	570.4	427.1	427.1	314.7
BGP713 LED27-4S/740	2430.0	16.2	150.0	0.228	0.228	0.171	0.171	0.125	640.7	480.5	480.5	351.2
BGP713 LED30-4S/740	2700.0	17.8	151.7	0.251	0.251	0.188	0.188	0.138	705.3	528.3	528.3	387.8
BGP713 LED35-4S/740	3150.0	21.0	150.0	0.296	0.296	0.222	0.222	0.163	831.8	623.8	623.8	458.0
BGP713 LED40-4S/740	3600.0	24.0	150.0	0.338	0.338	0.254	0.254	0.186	949.8	713.7	713.7	522.7
BGP713 LED45-4S/740	4050.0	27.0	150.0	0.38	0.38	0.285	0.285	0.209	1067.8	800.8	800.8	587.3
BGP713 LED50-4S/740	4500.0	30.0	150.0	0.423	0.423	0.317	0.317	0.233	1188.6	890.8	890.8	654.7
BGP713 LED55-4S/740	5040.0	33.5	150.4	0.472	0.472	0.354	0.354	0.26	1326.3	994.7	994.7	730.6
BGP713 LED60-4S/740	5400.0	37.0	145.9	0.521	0.521	0.391	0.391	0.287	1464.0	1098.7	1098.7	806.5

BGP713 LED65-4S/740	5940.0	37.5	158.4	0.528	0.528	0.396	0.396	0.29	1483.7	1112.8	1112.8	814.9
BGP713 LED70-4S/740	6300.0	41.0	153.7	0.577	0.577	0.433	0.433	0.317	1621.4	1216.7	1216.7	890.8
BGP713 LED75-4S/740	6840.0	44.0	155.5	0.62	0.62	0.465	0.465	0.341	1742.2	1306.7	1306.7	958.2
BGP713 LED80-4S/740	7200.0	47.5	151.6	0.669	0.669	0.502	0.502	0.368	1879.9	1410.6	1410.6	1034.1
BGP713 LED85-4S/740	7740.0	48.5	159.6	0.683	0.683	0.512	0.512	0.376	1919.2	1438.7	1438.7	1056.6
BGP713 LED90-4S/740	8010.0	52.0	154.0	0.732	0.732	0.549	0.549	0.403	2056.9	1542.7	1542.7	1132.4
BGP713 LED95-4S/740	8544.0	55.0	155.3	0.775	0.775	0.581	0.581	0.426	2177.8	1632.6	1632.6	1197.1
BGP713 LED100-4S/740	8900.0	58.0	153.4	0.817	0.817	0.613	0.613	0.449	2295.8	1722.5	1722.5	1261.7
BGP713 LED110-4S/740	9790.0	64.0	153.0	0.901	0.901	0.676	0.676	0.496	2531.8	1899.6	1899.6	1393.8
BGP713 LED120-4S/740	10680.0	71.0	150.4	1.0	1.0	0.75	0.75	0.55	2810.0	2107.5	2107.5	1545.5
BGP713 LED130-4S/740	11570.0	78.0	148.3	1.099	1.099	0.824	0.824	0.604	3088.2	2315.4	2315.4	1697.2
BGP713 LED140-4S/740	12460.0	85.0	146.6	1.197	1.197	0.898	0.898	0.658	3363.6	2523.4	2523.4	1849.0
BGP713 LED150-4S/740	13350.0	93.0	143.5	1.31	1.31	0.983	0.983	0.721	3681.1	2762.2	2762.2	2026.0
BGP713 LED160-4S/740	14240.0	100.0	142.4	1.408	1.408	1.056	1.056	0.774	3956.5	2967.4	2967.4	2174.9
BGP713 LED169-4S/740	15130.0	106.0	142.7	1.493	1.493	1.12	1.12	0.821	4195.3	3147.2	3147.2	2307.0
BGP713 LED8-4S/757	720.0	5.6	128.6	0.079	0.079	0.059	0.059	0.043	222.0	165.8	165.8	120.8
BGP713 LED10-4S/757	900.0	6.8	132.4	0.096	0.096	0.072	0.072	0.053	269.8	202.3	202.3	148.9
BGP713 LED12-4S/757	1080.0	7.8	138.5	0.11	0.11	0.083	0.083	0.061	309.1	233.2	233.2	171.4
BGP713 LED14-4S/757	1260.0	9.0	140.0	0.127	0.127	0.095	0.095	0.07	356.9	266.9	266.9	196.7
BGP713 LED16-4S/757	1440.0	10.2	141.2	0.144	0.144	0.108	0.108	0.079	404.6	303.5	303.5	222.0
BGP713 LED18-4S/757	1620.0	11.4	142.1	0.161	0.161	0.121	0.121	0.089	452.4	340.0	340.0	250.1
BGP713 LED20-4S/757	1800.0	12.6	142.9	0.177	0.177	0.133	0.133	0.097	497.4	373.7	373.7	272.6
BGP713 LED22-4S/757	1980.0	13.8	143.5	0.194	0.194	0.146	0.146	0.107	545.1	410.3	410.3	300.7
BGP713 LED24-4S/757	2160.0	14.4	150.0	0.203	0.203	0.152	0.152	0.112	570.4	427.1	427.1	314.7

BGP713 LED27-4S/757	2430.0	16.0	151.9	0.225	0.225	0.169	0.169	0.124	632.2	474.9	474.9	348.4
BGP713 LED30-4S/757	2700.0	17.8	151.7	0.251	0.251	0.188	0.188	0.138	705.3	528.3	528.3	387.8
BGP713 LED35-4S/757	3150.0	21.0	150.0	0.296	0.296	0.222	0.222	0.163	831.8	623.8	623.8	458.0
BGP713 LED40-4S/757	3600.0	24.0	150.0	0.338	0.338	0.254	0.254	0.186	949.8	713.7	713.7	522.7
BGP713 LED45-4S/757	4050.0	27.0	150.0	0.38	0.38	0.285	0.285	0.209	1067.8	800.8	800.8	587.3
BGP713 LED50-4S/757	4500.0	30.0	150.0	0.423	0.423	0.317	0.317	0.233	1188.6	890.8	890.8	654.7
BGP713 LED55-4S/757	5040.0	33.5	150.4	0.472	0.472	0.354	0.354	0.26	1326.3	994.7	994.7	730.6
BGP713 LED60-4S/757	5400.0	37.0	145.9	0.521	0.521	0.391	0.391	0.287	1464.0	1098.7	1098.7	806.5
BGP713 LED65-4S/757	5940.0	37.5	158.4	0.528	0.528	0.396	0.396	0.29	1483.7	1112.8	1112.8	814.9
BGP713 LED70-4S/757	6300.0	41.0	153.7	0.577	0.577	0.433	0.433	0.317	1621.4	1216.7	1216.7	890.8
BGP713 LED75-4S/757	6840.0	44.0	155.5	0.62	0.62	0.465	0.465	0.341	1742.2	1306.7	1306.7	958.2
BGP713 LED80-4S/757	7200.0	47.5	151.6	0.669	0.669	0.502	0.502	0.368	1879.9	1410.6	1410.6	1034.1
BGP713 LED85-4S/757	7740.0	48.5	159.6	0.683	0.683	0.512	0.512	0.376	1919.2	1438.7	1438.7	1056.6
BGP713 LED90-4S/757	8010.0	52.0	154.0	0.732	0.732	0.549	0.549	0.403	2056.9	1542.7	1542.7	1132.4
BGP713 LED95-4S/757	8544.0	55.0	155.3	0.775	0.775	0.581	0.581	0.426	2177.8	1632.6	1632.6	1197.1
BGP713 LED100-4S/757	8900.0	58.0	153.4	0.817	0.817	0.613	0.613	0.449	2295.8	1722.5	1722.5	1261.7
BGP713 LED110-4S/757	9790.0	64.0	153.0	0.901	0.901	0.676	0.676	0.496	2531.8	1899.6	1899.6	1393.8
BGP713 LED120-4S/757	10680.0	71.0	150.4	1.0	1.0	0.75	0.75	0.55	2810.0	2107.5	2107.5	1545.5
BGP713 LED130-4S/757	11570.0	78.0	148.3	1.099	1.099	0.824	0.824	0.604	3088.2	2315.4	2315.4	1697.2
BGP713 LED140-4S/757	12460.0	85.0	146.6	1.197	1.197	0.898	0.898	0.658	3363.6	2523.4	2523.4	1849.0
BGP713 LED150-4S/757	13350.0	93.0	143.5	1.31	1.31	0.983	0.983	0.721	3681.1	2762.2	2762.2	2026.0
BGP713 LED160-4S/757	14240.0	100.0	142.4	1.408	1.408	1.056	1.056	0.774	3956.5	2967.4	2967.4	2174.9
BGP713 LED169-4S/757	15130.0	106.0	142.7	1.493	1.493	1.12	1.12	0.821	4195.3	3147.2	3147.2	2307.0
BGP713 LED8-4S/730	720.0	5.9	122.0	0.083	0.083	0.062	0.062	0.046	233.2	174.2	174.2	129.3

BGP713 LED10-4S/730	900.0	7.2	125.0	0.101	0.101	0.076	0.076	0.056	283.8	213.6	213.6	157.4
BGP713 LED12-4S/730	1080.0	8.2	131.7	0.115	0.115	0.086	0.086	0.063	323.2	241.7	241.7	177.0
BGP713 LED14-4S/730	1260.0	9.5	132.6	0.134	0.134	0.101	0.101	0.074	376.5	283.8	283.8	207.9
BGP713 LED16-4S/730	1440.0	10.8	133.3	0.152	0.152	0.114	0.114	0.084	427.1	320.3	320.3	236.0
BGP713 LED18-4S/730	1620.0	12.0	135.0	0.169	0.169	0.127	0.127	0.093	474.9	356.9	356.9	261.3
BGP713 LED20-4S/730	1800.0	13.4	134.3	0.189	0.189	0.142	0.142	0.104	531.1	399.0	399.0	292.2
BGP713 LED22-4S/730	1980.0	14.0	141.4	0.197	0.197	0.148	0.148	0.108	553.6	415.9	415.9	303.5
BGP713 LED24-4S/730	2160.0	15.2	142.1	0.214	0.214	0.161	0.161	0.118	601.3	452.4	452.4	331.6
BGP713 LED27-4S/730	2430.0	17.0	142.9	0.239	0.239	0.179	0.179	0.131	671.6	503.0	503.0	368.1
BGP713 LED30-4S/730	2700.0	19.0	142.1	0.268	0.268	0.201	0.201	0.147	753.1	564.8	564.8	413.1
BGP713 LED35-4S/730	3150.0	22.0	143.2	0.31	0.31	0.232	0.232	0.171	871.1	651.9	651.9	480.5
BGP713 LED40-4S/730	3600.0	25.5	141.2	0.359	0.359	0.269	0.269	0.197	1008.8	755.9	755.9	553.6
BGP713 LED45-4S/730	4050.0	28.5	142.1	0.401	0.401	0.301	0.301	0.221	1126.8	845.8	845.8	621.0
BGP713 LED50-4S/730	4500.0	32.0	140.6	0.451	0.451	0.338	0.338	0.248	1267.3	949.8	949.8	696.9
BGP713 LED55-4S/730	5040.0	35.5	142.0	0.5	0.5	0.375	0.375	0.275	1405.0	1053.8	1053.8	772.8
BGP713 LED60-4S/730	5400.0	39.5	136.7	0.556	0.556	0.417	0.417	0.306	1562.4	1171.8	1171.8	859.9
BGP713 LED65-4S/730	5940.0	40.0	148.5	0.563	0.563	0.422	0.422	0.31	1582.0	1185.8	1185.8	871.1
BGP713 LED70-4S/730	6300.0	43.5	144.8	0.613	0.613	0.46	0.46	0.337	1722.5	1292.6	1292.6	947.0
BGP713 LED75-4S/730	6840.0	47.0	145.5	0.662	0.662	0.497	0.497	0.364	1860.2	1396.6	1396.6	1022.8
BGP713 LED80-4S/730	7120.0	51.0	139.6	0.718	0.718	0.538	0.538	0.395	2017.6	1511.8	1511.8	1110.0
BGP713 LED85-4S/730	7654.0	52.0	147.2	0.732	0.732	0.549	0.549	0.403	2056.9	1542.7	1542.7	1132.4
BGP713 LED90-4S/730	8010.0	55.0	145.6	0.775	0.775	0.581	0.581	0.426	2177.8	1632.6	1632.6	1197.1
BGP713 LED95-4S/730	8544.0	58.0	147.3	0.817	0.817	0.613	0.613	0.449	2295.8	1722.5	1722.5	1261.7
BGP713 LED100-4S/730	8900.0	62.0	143.5	0.873	0.873	0.655	0.655	0.48	2453.1	1840.6	1840.6	1348.8

BGP713 LED110-4S/730	9790.0	69.0	141.9	0.972	0.972	0.729	0.729	0.535	2731.3	2048.5	2048.5	1503.4
BGP713 LED120-4S/730	10680.0	76.0	140.5	1.07	1.07	0.802	0.802	0.589	3006.7	2253.6	2253.6	1655.1
BGP713 LED130-4S/730	11570.0	84.0	137.7	1.183	1.183	0.887	0.887	0.651	3324.2	2492.5	2492.5	1829.3
BGP713 LED140-4S/730	12460.0	92.0	135.4	1.296	1.296	0.972	0.972	0.713	3641.8	2731.3	2731.3	2003.5
BGP713 LED150-4S/730	13350.0	99.0	134.8	1.394	1.394	1.045	1.045	0.767	3917.1	2936.4	2936.4	2155.3
BGP713 LED160-4S/730	14080.0	108.0	130.4	1.521	1.521	1.141	1.141	0.837	4274.0	3206.2	3206.2	2352.0
BGP713 LED169-4S/730	14960.0	118.0	126.8	1.662	1.662	1.246	1.246	0.914	4670.2	3501.3	3501.3	2568.3
BGP713 LED8-4S/727	720.0	6.5	110.8	0.092	0.092	0.069	0.069	0.051	258.5	193.9	193.9	143.3
BGP713 LED10-4S/727	900.0	7.9	113.9	0.111	0.111	0.083	0.083	0.061	311.9	233.2	233.2	171.4
BGP713 LED12-4S/727	1080.0	9.1	118.7	0.128	0.128	0.096	0.096	0.07	359.7	269.8	269.8	196.7
BGP713 LED14-4S/727	1260.0	10.6	118.9	0.149	0.149	0.112	0.112	0.082	418.7	314.7	314.7	230.4
BGP713 LED16-4S/727	1440.0	11.8	122.0	0.166	0.166	0.124	0.124	0.091	466.5	348.4	348.4	255.7
BGP713 LED18-4S/727	1620.0	13.4	120.9	0.189	0.189	0.142	0.142	0.104	531.1	399.0	399.0	292.2
BGP713 LED20-4S/727	1800.0	15.0	120.0	0.211	0.211	0.158	0.158	0.116	592.9	444.0	444.0	326.0
BGP713 LED22-4S/727	1980.0	15.6	126.9	0.22	0.22	0.165	0.165	0.121	618.2	463.7	463.7	340.0
BGP713 LED24-4S/727	2160.0	17.0	127.1	0.239	0.239	0.179	0.179	0.131	671.6	503.0	503.0	368.1
BGP713 LED27-4S/727	2430.0	19.0	127.9	0.268	0.268	0.201	0.201	0.147	753.1	564.8	564.8	413.1
BGP713 LED30-4S/727	2700.0	21.0	128.6	0.296	0.296	0.222	0.222	0.163	831.8	623.8	623.8	458.0
BGP713 LED35-4S/727	3150.0	24.5	128.6	0.345	0.345	0.259	0.259	0.19	969.4	727.8	727.8	533.9
BGP713 LED40-4S/727	3600.0	28.5	126.3	0.401	0.401	0.301	0.301	0.221	1126.8	845.8	845.8	621.0
BGP713 LED45-4S/727	4050.0	32.5	124.6	0.458	0.458	0.344	0.344	0.252	1287.0	966.6	966.6	708.1
BGP713 LED50-4S/727	4500.0	36.5	123.3	0.514	0.514	0.386	0.386	0.283	1444.3	1084.7	1084.7	795.2
BGP713 LED55-4S/727	5040.0	40.5	124.4	0.57	0.57	0.427	0.427	0.314	1601.7	1199.9	1199.9	882.3
BGP713 LED60-4S/727	5400.0	41.5	130.1	0.585	0.585	0.439	0.439	0.322	1643.8	1233.6	1233.6	904.8

BGP713 LED65-4S/727	5940.0	45.5	130.5	0.641	0.641	0.481	0.481	0.353	1801.2	1351.6	1351.6	991.9
BGP713 LED70-4S/727	6230.0	49.5	125.9	0.697	0.697	0.523	0.523	0.383	1958.6	1469.6	1469.6	1076.2
BGP713 LED75-4S/727	6764.0	53.0	127.6	0.746	0.746	0.559	0.559	0.41	2096.3	1570.8	1570.8	1152.1
BGP713 LED80-4S/727	7120.0	58.0	122.8	0.817	0.817	0.613	0.613	0.449	2295.8	1722.5	1722.5	1261.7
BGP713 LED85-4S/727	7654.0	59.0	129.7	0.831	0.831	0.623	0.623	0.457	2335.1	1750.6	1750.6	1284.2
BGP713 LED90-4S/727	8010.0	62.0	129.2	0.873	0.873	0.655	0.655	0.48	2453.1	1840.6	1840.6	1348.8
BGP713 LED95-4S/727	8544.0	66.0	129.5	0.93	0.93	0.698	0.698	0.512	2613.3	1961.4	1961.4	1438.7
BGP713 LED100-4S/727	8900.0	70.0	127.1	0.986	0.986	0.74	0.74	0.542	2770.7	2079.4	2079.4	1523.0
BGP713 LED110-4S/727	9790.0	79.0	123.9	1.113	1.113	0.835	0.835	0.612	3127.5	2346.3	2346.3	1719.7
BGP713 LED120-4S/727	10680.0	87.0	122.8	1.225	1.225	0.919	0.919	0.674	3442.3	2582.4	2582.4	1893.9
BGP713 LED130-4S/727	11570.0	96.0	120.5	1.352	1.352	1.014	1.014	0.744	3799.1	2849.3	2849.3	2090.6
BGP713 LED140-4S/727	12460.0	104.0	119.8	1.465	1.465	1.099	1.099	0.806	4116.7	3088.2	3088.2	2264.9
BGP713 LED150-4S/727	13200.0	114.0	115.8	1.606	1.606	1.205	1.205	0.883	4512.9	3386.1	3386.1	2481.2
BGP713 LED8-4S/830	720.0	6.5	110.8	0.092	0.092	0.069	0.069	0.051	258.5	193.9	193.9	143.3
BGP713 LED8-4S/830	720.0	6.5	110.8	0.092	0.092	0.069	0.069	0.051	258.5	193.9	193.9	143.3
BGP713 LED10-4S/830	900.0	7.7	116.9	0.108	0.108	0.081	0.081	0.059	303.5	227.6	227.6	165.8
BGP713 LED12-4S/830	1080.0	9.1	118.7	0.128	0.128	0.096	0.096	0.07	359.7	269.8	269.8	196.7
BGP713 LED14-4S/830	1260.0	10.6	118.9	0.149	0.149	0.112	0.112	0.082	418.7	314.7	314.7	230.4
BGP713 LED16-4S/830	1440.0	11.8	122.0	0.166	0.166	0.124	0.124	0.091	466.5	348.4	348.4	255.7
BGP713 LED18-4S/830	1620.0	13.4	120.9	0.189	0.189	0.142	0.142	0.104	531.1	399.0	399.0	292.2
BGP713 LED20-4S/830	1800.0	14.2	126.8	0.2	0.2	0.15	0.15	0.11	562.0	421.5	421.5	309.1
BGP713 LED22-4S/830	1980.0	15.6	126.9	0.22	0.22	0.165	0.165	0.121	618.2	463.7	463.7	340.0
BGP713 LED24-4S/830	2160.0	17.0	127.1	0.239	0.239	0.179	0.179	0.131	671.6	503.0	503.0	368.1
BGP713 LED27-4S/830	2430.0	19.0	127.9	0.268	0.268	0.201	0.201	0.147	753.1	564.8	564.8	413.1

BGP713 LED30-4S/830	2700.0	21.0	128.6	0.296	0.296	0.222	0.222	0.163	831.8	623.8	623.8	458.0
BGP713 LED35-4S/830	3150.0	25.0	126.0	0.352	0.352	0.264	0.264	0.194	989.1	741.8	741.8	545.1
BGP713 LED40-4S/830	3600.0	28.5	126.3	0.401	0.401	0.301	0.301	0.221	1126.8	845.8	845.8	621.0
BGP713 LED45-4S/830	4050.0	32.5	124.6	0.458	0.458	0.344	0.344	0.252	1287.0	966.6	966.6	708.1
BGP713 LED50-4S/830	4500.0	36.5	123.3	0.514	0.514	0.386	0.386	0.283	1444.3	1084.7	1084.7	795.2
BGP713 LED55-4S/830	5040.0	38.0	132.6	0.535	0.535	0.401	0.401	0.294	1503.4	1126.8	1126.8	826.1
BGP713 LED60-4S/830	5400.0	41.5	130.1	0.585	0.585	0.439	0.439	0.322	1643.8	1233.6	1233.6	904.8
BGP713 LED65-4S/830	5940.0	45.5	130.5	0.641	0.641	0.481	0.481	0.353	1801.2	1351.6	1351.6	991.9
BGP713 LED70-4S/830	6230.0	49.5	125.9	0.697	0.697	0.523	0.523	0.383	1958.6	1469.6	1469.6	1076.2
BGP713 LED75-4S/830	6764.0	53.0	127.6	0.746	0.746	0.559	0.559	0.41	2096.3	1570.8	1570.8	1152.1
BGP713 LED80-4S/830	7120.0	58.0	122.8	0.817	0.817	0.613	0.613	0.449	2295.8	1722.5	1722.5	1261.7
BGP713 LED85-4S/830	7654.0	59.0	129.7	0.831	0.831	0.623	0.623	0.457	2335.1	1750.6	1750.6	1284.2
BGP713 LED90-4S/830	8010.0	62.0	129.2	0.873	0.873	0.655	0.655	0.48	2453.1	1840.6	1840.6	1348.8
BGP713 LED95-4S/830	8544.0	66.0	129.5	0.93	0.93	0.698	0.698	0.512	2613.3	1961.4	1961.4	1438.7
BGP713 LED100-4S/830	8900.0	70.0	127.1	0.986	0.986	0.74	0.74	0.542	2770.7	2079.4	2079.4	1523.0
BGP713 LED110-4S/830	9790.0	79.0	123.9	1.113	1.113	0.835	0.835	0.612	3127.5	2346.3	2346.3	1719.7
BGP713 LED120-4S/830	10680.0	87.0	122.8	1.225	1.225	0.919	0.919	0.674	3442.3	2582.4	2582.4	1893.9
BGP713 LED130-4S/830	11570.0	96.0	120.5	1.352	1.352	1.014	1.014	0.744	3799.1	2849.3	2849.3	2090.6
BGP713 LED140-4S/830	12460.0	104.0	119.8	1.465	1.465	1.099	1.099	0.806	4116.7	3088.2	3088.2	2264.9
BGP713 LED150-4S/830	13200.0	114.0	115.8	1.606	1.606	1.205	1.205	0.883	4512.9	3386.1	3386.1	2481.2
BGP713 LED6-4S/722	540.0	5.6	96.4	0.079	0.079	0.059	0.059	0.043	222.0	165.8	165.8	120.8
BGP713 LED8-4S/722	720.0	7.2	100.0	0.101	0.101	0.076	0.076	0.056	283.8	213.6	213.6	157.4
BGP713 LED10-4S/722	900.0	8.6	104.7	0.121	0.121	0.091	0.091	0.067	340.0	255.7	255.7	188.3
BGP713 LED12-4S/722	1080.0	10.2	105.9	0.144	0.144	0.108	0.108	0.079	404.6	303.5	303.5	222.0

BGP713 LED14-4S/722	1260.0	11.6	108.6	0.163	0.163	0.122	0.122	0.09	458.0	342.8	342.8	252.9
BGP713 LED16-4S/722	1440.0	13.4	107.5	0.189	0.189	0.142	0.142	0.104	531.1	399.0	399.0	292.2
BGP713 LED18-4S/722	1620.0	15.0	108.0	0.211	0.211	0.158	0.158	0.116	592.9	444.0	444.0	326.0
BGP713 LED20-4S/722	1800.0	15.8	113.9	0.223	0.223	0.167	0.167	0.123	626.6	469.3	469.3	345.6
BGP713 LED22-4S/722	1980.0	17.4	113.8	0.245	0.245	0.184	0.184	0.135	688.4	517.0	517.0	379.4
BGP713 LED24-4S/722	2160.0	19.0	113.7	0.268	0.268	0.201	0.201	0.147	753.1	564.8	564.8	413.1
BGP713 LED27-4S/722	2430.0	21.0	115.7	0.296	0.296	0.222	0.222	0.163	831.8	623.8	623.8	458.0
BGP713 LED30-4S/722	2700.0	23.5	114.9	0.331	0.331	0.248	0.248	0.182	930.1	696.9	696.9	511.4
BGP713 LED35-4S/722	3150.0	28.0	112.5	0.394	0.394	0.295	0.295	0.217	1107.1	828.9	828.9	609.8
BGP713 LED40-4S/722	3600.0	32.0	112.5	0.451	0.451	0.338	0.338	0.248	1267.3	949.8	949.8	696.9
BGP713 LED45-4S/722	4050.0	36.5	111.0	0.514	0.514	0.386	0.386	0.283	1444.3	1084.7	1084.7	795.2
BGP713 LED50-4S/722	4500.0	38.5	116.9	0.542	0.542	0.407	0.407	0.298	1523.0	1143.7	1143.7	837.4
BGP713 LED55-4S/722	5040.0	43.0	117.2	0.606	0.606	0.455	0.455	0.333	1702.9	1278.5	1278.5	935.7
BGP713 LED60-4S/722	5340.0	47.0	113.6	0.662	0.662	0.497	0.497	0.364	1860.2	1396.6	1396.6	1022.8
BGP713 LED65-4S/722	5874.0	51.0	115.2	0.718	0.718	0.538	0.538	0.395	2017.6	1511.8	1511.8	1110.0
BGP713 LED70-4S/722	6230.0	56.0	111.2	0.789	0.789	0.592	0.592	0.434	2217.1	1663.5	1663.5	1219.5
BGP713 LED75-4S/722	6764.0	61.0	110.9	0.859	0.859	0.644	0.644	0.472	2413.8	1809.6	1809.6	1326.3
BGP713 LED80-4S/722	7120.0	62.0	114.8	0.873	0.873	0.655	0.655	0.48	2453.1	1840.6	1840.6	1348.8
BGP713 LED85-4S/722	7654.0	66.0	116.0	0.93	0.93	0.698	0.698	0.512	2613.3	1961.4	1961.4	1438.7
BGP713 LED90-4S/722	8010.0	71.0	112.8	1.0	1.0	0.75	0.75	0.55	2810.0	2107.5	2107.5	1545.5
BGP713 LED95-4S/722	8544.0	75.0	113.9	1.056	1.056	0.792	0.792	0.581	2967.4	2225.5	2225.5	1632.6
BGP713 LED100-4S/722	8900.0	80.0	111.2	1.127	1.127	0.845	0.845	0.62	3166.9	2374.4	2374.4	1742.2
BGP713 LED110-4S/722	9790.0	90.0	108.8	1.268	1.268	0.951	0.951	0.697	3563.1	2672.3	2672.3	1958.6
BGP713 LED120-4S/722	10680.0	99.0	107.9	1.394	1.394	1.045	1.045	0.767	3917.1	2936.4	2936.4	2155.3

BGP713 LED130-4S/722	11440.0	116.0	98.6	1.634	1.634	1.225	1.225	0.899	4591.5	3442.3	3442.3	2526.2
BGP713 LED6-4S/840	540.0	4.9	110.2	0.069	0.069	0.052	0.052	0.038	193.9	146.1	146.1	106.8
BGP713 LED8-4S/840	720.0	6.3	114.3	0.089	0.089	0.067	0.067	0.049	250.1	188.3	188.3	137.7
BGP713 LED10-4S/840	900.0	7.5	120.0	0.106	0.106	0.08	0.08	0.058	297.9	224.8	224.8	163.0
BGP713 LED12-4S/840	1080.0	8.9	121.3	0.125	0.125	0.094	0.094	0.069	351.2	264.1	264.1	193.9
BGP713 LED14-4S/840	1260.0	10.2	123.5	0.144	0.144	0.108	0.108	0.079	404.6	303.5	303.5	222.0
BGP713 LED16-4S/840	1440.0	11.6	124.1	0.163	0.163	0.122	0.122	0.09	458.0	342.8	342.8	252.9
BGP713 LED18-4S/840	1620.0	13.0	124.6	0.183	0.183	0.137	0.137	0.101	514.2	385.0	385.0	283.8
BGP713 LED20-4S/840	1800.0	13.8	130.4	0.194	0.194	0.146	0.146	0.107	545.1	410.3	410.3	300.7
BGP713 LED22-4S/840	1980.0	15.2	130.3	0.214	0.214	0.161	0.161	0.118	601.3	452.4	452.4	331.6
BGP713 LED24-4S/840	2160.0	16.6	130.1	0.234	0.234	0.176	0.176	0.129	657.5	494.6	494.6	362.5
BGP713 LED27-4S/840	2430.0	18.4	132.1	0.259	0.259	0.194	0.194	0.142	727.8	545.1	545.1	399.0
BGP713 LED30-4S/840	2700.0	20.5	131.7	0.289	0.289	0.217	0.217	0.159	812.1	609.8	609.8	446.8
BGP713 LED35-4S/840	3150.0	24.0	131.2	0.338	0.338	0.254	0.254	0.186	949.8	713.7	713.7	522.7
BGP713 LED40-4S/840	3600.0	27.5	130.9	0.387	0.387	0.29	0.29	0.213	1087.5	814.9	814.9	598.5
BGP713 LED45-4S/840	4050.0	31.5	128.6	0.444	0.444	0.333	0.333	0.244	1247.6	935.7	935.7	685.6
BGP713 LED50-4S/840	4500.0	35.0	128.6	0.493	0.493	0.37	0.37	0.271	1385.3	1039.7	1039.7	761.5
BGP713 LED55-4S/840	5040.0	36.5	138.1	0.514	0.514	0.386	0.386	0.283	1444.3	1084.7	1084.7	795.2
BGP713 LED60-4S/840	5400.0	40.0	135.0	0.563	0.563	0.422	0.422	0.31	1582.0	1185.8	1185.8	871.1
BGP713 LED65-4S/840	5940.0	44.0	135.0	0.62	0.62	0.465	0.465	0.341	1742.2	1306.7	1306.7	958.2
BGP713 LED70-4S/840	6300.0	47.5	132.6	0.669	0.669	0.502	0.502	0.368	1879.9	1410.6	1410.6	1034.1
BGP713 LED75-4S/840	6764.0	51.0	132.6	0.718	0.718	0.538	0.538	0.395	2017.6	1511.8	1511.8	1110.0
BGP713 LED80-4S/840	7120.0	55.0	129.5	0.775	0.775	0.581	0.581	0.426	2177.8	1632.6	1632.6	1197.1
BGP713 LED85-4S/840	7654.0	56.0	136.7	0.789	0.789	0.592	0.592	0.434	2217.1	1663.5	1663.5	1219.5

BGP713 LED90-4S/840	8010.0	60.0	133.5	0.845	0.845	0.634	0.634	0.465	2374.4	1781.5	1781.5	1306.7
BGP713 LED95-4S/840	8544.0	64.0	133.5	0.901	0.901	0.676	0.676	0.496	2531.8	1899.6	1899.6	1393.8
BGP713 LED100-4S/840	8900.0	68.0	130.9	0.958	0.958	0.718	0.718	0.527	2692.0	2017.6	2017.6	1480.9
BGP713 LED120-4S/840	10680.0	84.0	127.1	1.183	1.183	0.887	0.887	0.651	3324.2	2492.5	2492.5	1829.3
BGP713 LED130-4S/840	11570.0	92.0	125.8	1.296	1.296	0.972	0.972	0.713	3641.8	2731.3	2731.3	2003.5
BGP713 LED140-4S/840	12460.0	100.0	124.6	1.408	1.408	1.056	1.056	0.774	3956.5	2967.4	2967.4	2174.9
BGP713 LED150-4S/840	13200.0	110.0	120.0	1.549	1.549	1.162	1.162	0.852	4352.7	3265.2	3265.2	2394.1
BGP713 LED6-4S/827	540.0	5.4	100.0	0.076	0.076	0.057	0.057	0.042	213.6	160.2	160.2	118.0
BGP713 LED8-4S/827	720.0	6.9	104.3	0.097	0.097	0.073	0.073	0.053	272.6	205.1	205.1	148.9
BGP713 LED10-4S/827	900.0	8.3	108.4	0.117	0.117	0.088	0.088	0.064	328.8	247.3	247.3	179.8
BGP713 LED12-4S/827	1080.0	9.8	110.2	0.138	0.138	0.104	0.104	0.076	387.8	292.2	292.2	213.6
BGP713 LED14-4S/827	1260.0	11.2	112.5	0.158	0.158	0.118	0.118	0.087	444.0	331.6	331.6	244.5
BGP713 LED16-4S/827	1440.0	12.8	112.5	0.18	0.18	0.135	0.135	0.099	505.8	379.4	379.4	278.2
BGP713 LED18-4S/827	1620.0	14.4	112.5	0.203	0.203	0.152	0.152	0.112	570.4	427.1	427.1	314.7
BGP713 LED20-4S/827	1800.0	15.4	116.9	0.217	0.217	0.163	0.163	0.119	609.8	458.0	458.0	334.4
BGP713 LED22-4S/827	1980.0	16.8	117.9	0.237	0.237	0.178	0.178	0.13	666.0	500.2	500.2	365.3
BGP713 LED24-4S/827	2160.0	18.2	118.7	0.256	0.256	0.192	0.192	0.141	719.4	539.5	539.5	396.2
BGP713 LED27-4S/827	2430.0	20.5	118.5	0.289	0.289	0.217	0.217	0.159	812.1	609.8	609.8	446.8
BGP713 LED30-4S/827	2700.0	22.5	120.0	0.317	0.317	0.238	0.238	0.174	890.8	668.8	668.8	488.9
BGP713 LED35-4S/827	3150.0	26.5	118.9	0.373	0.373	0.28	0.28	0.205	1048.1	786.8	786.8	576.0
BGP713 LED40-4S/827	3600.0	31.0	116.1	0.437	0.437	0.328	0.328	0.24	1228.0	921.7	921.7	674.4
BGP713 LED45-4S/827	4050.0	35.0	115.7	0.493	0.493	0.37	0.37	0.271	1385.3	1039.7	1039.7	761.5
BGP713 LED50-4S/827	4500.0	37.0	121.6	0.521	0.521	0.391	0.391	0.287	1464.0	1098.7	1098.7	806.5
BGP713 LED55-4S/827	5040.0	41.0	122.9	0.577	0.577	0.433	0.433	0.317	1621.4	1216.7	1216.7	890.8

BGP713 LED60-4S/827	5400.0	45.0	120.0	0.634	0.634	0.476	0.476	0.349	1781.5	1337.6	1337.6	980.7
BGP713 LED65-4S/827	5874.0	49.5	118.7	0.697	0.697	0.523	0.523	0.383	1958.6	1469.6	1469.6	1076.2
BGP713 LED70-4S/827	6230.0	54.0	115.4	0.761	0.761	0.571	0.571	0.419	2138.4	1604.5	1604.5	1177.4
BGP713 LED75-4S/827	6764.0	55.0	123.0	0.775	0.775	0.581	0.581	0.426	2177.8	1632.6	1632.6	1197.1
BGP713 LED80-4S/827	7120.0	59.0	120.7	0.831	0.831	0.623	0.623	0.457	2335.1	1750.6	1750.6	1284.2
BGP713 LED85-4S/827	7654.0	63.0	121.5	0.887	0.887	0.665	0.665	0.488	2492.5	1868.7	1868.7	1371.3
BGP713 LED90-4S/827	8010.0	68.0	117.8	0.958	0.958	0.718	0.718	0.527	2692.0	2017.6	2017.6	1480.9
BGP713 LED95-4S/827	8544.0	72.0	118.7	1.014	1.014	0.76	0.76	0.558	2849.3	2135.6	2135.6	1568.0
BGP713 LED120-4S/827	10680.0	95.0	112.4	1.338	1.338	1.004	1.004	0.736	3759.8	2821.2	2821.2	2068.2
BGP713 LED130-4S/827	11570.0	104.0	111.2	1.465	1.465	1.099	1.099	0.806	4116.7	3088.2	3088.2	2264.9

** 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
BGP713 LED8-4S/740	728.0	5.6	130.0	0.079	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED10-4S/740	900.0	6.8	132.4	0.096	0.037	0.028	0.028	0.02	104.0	78.7	78.7	56.2
BGP713 LED12-4S/740	1080.0	7.8	138.5	0.11	0.036	0.027	0.027	0.02	101.2	75.9	75.9	56.2
BGP713 LED14-4S/740	1260.0	9.0	140.0	0.127	0.035	0.026	0.026	0.019	98.4	73.1	73.1	53.4
BGP713 LED16-4S/740	1440.0	10.2	141.2	0.144	0.035	0.026	0.026	0.019	98.4	73.1	73.1	53.4

BGP713 LED18-4S/740	1620.0	11.4	142.1	0.161	0.035	0.026	0.026	0.019	98.4	73.1	73.1	53.4
BGP713 LED20-4S/740	1800.0	12.6	142.9	0.177	0.034	0.026	0.026	0.019	95.5	73.1	73.1	53.4
BGP713 LED22-4S/740	1980.0	13.8	143.5	0.194	0.034	0.026	0.026	0.019	95.5	73.1	73.1	53.4
BGP713 LED24-4S/740	2160.0	14.4	150.0	0.203	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED27-4S/740	2430.0	16.2	150.0	0.228	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED30-4S/740	2700.0	17.8	151.7	0.251	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED35-4S/740	3150.0	21.0	150.0	0.296	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED40-4S/740	3600.0	24.0	150.0	0.338	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED45-4S/740	4050.0	27.0	150.0	0.38	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED50-4S/740	4500.0	30.0	150.0	0.423	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED55-4S/740	5040.0	33.5	150.4	0.472	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED60-4S/740	5400.0	37.0	145.9	0.521	0.034	0.026	0.026	0.019	95.5	73.1	73.1	53.4
BGP713 LED65-4S/740	5940.0	37.5	158.4	0.528	0.031	0.023	0.023	0.017	87.1	64.6	64.6	47.8
BGP713 LED70-4S/740	6300.0	41.0	153.7	0.577	0.032	0.024	0.024	0.018	89.9	67.4	67.4	50.6
BGP713 LED75-4S/740	6840.0	44.0	155.5	0.62	0.032	0.024	0.024	0.018	89.9	67.4	67.4	50.6
BGP713 LED80-4S/740	7200.0	47.5	151.6	0.669	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED85-4S/740	7740.0	48.5	159.6	0.683	0.031	0.023	0.023	0.017	87.1	64.6	64.6	47.8
BGP713 LED90-4S/740	8010.0	52.0	154.0	0.732	0.032	0.024	0.024	0.018	89.9	67.4	67.4	50.6
BGP713 LED95-4S/740	8544.0	55.0	155.3	0.775	0.032	0.024	0.024	0.018	89.9	67.4	67.4	50.6
BGP713 LED100-4S/740	8900.0	58.0	153.4	0.817	0.032	0.024	0.024	0.018	89.9	67.4	67.4	50.6
BGP713 LED110-4S/740	9790.0	64.0	153.0	0.901	0.032	0.024	0.024	0.018	89.9	67.4	67.4	50.6
BGP713 LED120-4S/740	10680.0	71.0	150.4	1.0	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED130-4S/740	11570.0	78.0	148.3	1.099	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED140-4S/740	12460.0	85.0	146.6	1.197	0.034	0.026	0.026	0.019	95.5	73.1	73.1	53.4

BGP713 LED150-4S/740	13350.0	93.0	143.5	1.31	0.034	0.026	0.026	0.019	95.5	73.1	73.1	53.4
BGP713 LED160-4S/740	14240.0	100.0	142.4	1.408	0.035	0.026	0.026	0.019	98.4	73.1	73.1	53.4
BGP713 LED169-4S/740	15130.0	106.0	142.7	1.493	0.034	0.026	0.026	0.019	95.5	73.1	73.1	53.4
BGP713 LED8-4S/757	720.0	5.6	128.6	0.079	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED10-4S/757	900.0	6.8	132.4	0.096	0.037	0.028	0.028	0.02	104.0	78.7	78.7	56.2
BGP713 LED12-4S/757	1080.0	7.8	138.5	0.11	0.036	0.027	0.027	0.02	101.2	75.9	75.9	56.2
BGP713 LED14-4S/757	1260.0	9.0	140.0	0.127	0.035	0.026	0.026	0.019	98.4	73.1	73.1	53.4
BGP713 LED16-4S/757	1440.0	10.2	141.2	0.144	0.035	0.026	0.026	0.019	98.4	73.1	73.1	53.4
BGP713 LED18-4S/757	1620.0	11.4	142.1	0.161	0.035	0.026	0.026	0.019	98.4	73.1	73.1	53.4
BGP713 LED20-4S/757	1800.0	12.6	142.9	0.177	0.034	0.026	0.026	0.019	95.5	73.1	73.1	53.4
BGP713 LED22-4S/757	1980.0	13.8	143.5	0.194	0.034	0.026	0.026	0.019	95.5	73.1	73.1	53.4
BGP713 LED24-4S/757	2160.0	14.4	150.0	0.203	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED27-4S/757	2430.0	16.0	151.9	0.225	0.032	0.024	0.024	0.018	89.9	67.4	67.4	50.6
BGP713 LED30-4S/757	2700.0	17.8	151.7	0.251	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED35-4S/757	3150.0	21.0	150.0	0.296	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED40-4S/757	3600.0	24.0	150.0	0.338	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED45-4S/757	4050.0	27.0	150.0	0.38	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED50-4S/757	4500.0	30.0	150.0	0.423	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED55-4S/757	5040.0	33.5	150.4	0.472	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED60-4S/757	5400.0	37.0	145.9	0.521	0.034	0.026	0.026	0.019	95.5	73.1	73.1	53.4
BGP713 LED65-4S/757	5940.0	37.5	158.4	0.528	0.031	0.023	0.023	0.017	87.1	64.6	64.6	47.8
BGP713 LED70-4S/757	6300.0	41.0	153.7	0.577	0.032	0.024	0.024	0.018	89.9	67.4	67.4	50.6
BGP713 LED75-4S/757	6840.0	44.0	155.5	0.62	0.032	0.024	0.024	0.018	89.9	67.4	67.4	50.6
BGP713 LED80-4S/757	7200.0	47.5	151.6	0.669	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6

BGP713 LED85-4S/757	7740.0	48.5	159.6	0.683	0.031	0.023	0.023	0.017	87.1	64.6	64.6	47.8
BGP713 LED90-4S/757	8010.0	52.0	154.0	0.732	0.032	0.024	0.024	0.018	89.9	67.4	67.4	50.6
BGP713 LED95-4S/757	8544.0	55.0	155.3	0.775	0.032	0.024	0.024	0.018	89.9	67.4	67.4	50.6
BGP713 LED100-4S/757	8900.0	58.0	153.4	0.817	0.032	0.024	0.024	0.018	89.9	67.4	67.4	50.6
BGP713 LED110-4S/757	9790.0	64.0	153.0	0.901	0.032	0.024	0.024	0.018	89.9	67.4	67.4	50.6
BGP713 LED120-4S/757	10680.0	71.0	150.4	1.0	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED130-4S/757	11570.0	78.0	148.3	1.099	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED140-4S/757	12460.0	85.0	146.6	1.197	0.034	0.026	0.026	0.019	95.5	73.1	73.1	53.4
BGP713 LED150-4S/757	13350.0	93.0	143.5	1.31	0.034	0.026	0.026	0.019	95.5	73.1	73.1	53.4
BGP713 LED160-4S/757	14240.0	100.0	142.4	1.408	0.035	0.026	0.026	0.019	98.4	73.1	73.1	53.4
BGP713 LED169-4S/757	15130.0	106.0	142.7	1.493	0.034	0.026	0.026	0.019	95.5	73.1	73.1	53.4
BGP713 LED8-4S/730	720.0	5.9	122.0	0.083	0.04	0.03	0.03	0.022	112.4	84.3	84.3	61.8
BGP713 LED10-4S/730	900.0	7.2	125.0	0.101	0.039	0.029	0.029	0.021	109.6	81.5	81.5	59.0
BGP713 LED12-4S/730	1080.0	8.2	131.7	0.115	0.037	0.028	0.028	0.02	104.0	78.7	78.7	56.2
BGP713 LED14-4S/730	1260.0	9.5	132.6	0.134	0.037	0.028	0.028	0.02	104.0	78.7	78.7	56.2
BGP713 LED16-4S/730	1440.0	10.8	133.3	0.152	0.037	0.028	0.028	0.02	104.0	78.7	78.7	56.2
BGP713 LED18-4S/730	1620.0	12.0	135.0	0.169	0.037	0.028	0.028	0.02	104.0	78.7	78.7	56.2
BGP713 LED20-4S/730	1800.0	13.4	134.3	0.189	0.037	0.028	0.028	0.02	104.0	78.7	78.7	56.2
BGP713 LED22-4S/730	1980.0	14.0	141.4	0.197	0.035	0.026	0.026	0.019	98.4	73.1	73.1	53.4
BGP713 LED24-4S/730	2160.0	15.2	142.1	0.214	0.035	0.026	0.026	0.019	98.4	73.1	73.1	53.4
BGP713 LED27-4S/730	2430.0	17.0	142.9	0.239	0.034	0.026	0.026	0.019	95.5	73.1	73.1	53.4
BGP713 LED30-4S/730	2700.0	19.0	142.1	0.268	0.035	0.026	0.026	0.019	98.4	73.1	73.1	53.4
BGP713 LED35-4S/730	3150.0	22.0	143.2	0.31	0.034	0.026	0.026	0.019	95.5	73.1	73.1	53.4
BGP713 LED40-4S/730	3600.0	25.5	141.2	0.359	0.035	0.026	0.026	0.019	98.4	73.1	73.1	53.4

BGP713 LED45-4S/730	4050.0	28.5	142.1	0.401	0.034	0.026	0.026	0.019	95.5	73.1	73.1	53.4
BGP713 LED50-4S/730	4500.0	32.0	140.6	0.451	0.035	0.026	0.026	0.019	98.4	73.1	73.1	53.4
BGP713 LED55-4S/730	5040.0	35.5	142.0	0.5	0.035	0.026	0.026	0.019	98.4	73.1	73.1	53.4
BGP713 LED60-4S/730	5400.0	39.5	136.7	0.556	0.036	0.027	0.027	0.02	101.2	75.9	75.9	56.2
BGP713 LED65-4S/730	5940.0	40.0	148.5	0.563	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED70-4S/730	6300.0	43.5	144.8	0.613	0.034	0.026	0.026	0.019	95.5	73.1	73.1	53.4
BGP713 LED75-4S/730	6840.0	47.0	145.5	0.662	0.034	0.026	0.026	0.019	95.5	73.1	73.1	53.4
BGP713 LED80-4S/730	7120.0	51.0	139.6	0.718	0.035	0.026	0.026	0.019	98.4	73.1	73.1	53.4
BGP713 LED85-4S/730	7654.0	52.0	147.2	0.732	0.034	0.026	0.026	0.019	95.5	73.1	73.1	53.4
BGP713 LED90-4S/730	8010.0	55.0	145.6	0.775	0.034	0.026	0.026	0.019	95.5	73.1	73.1	53.4
BGP713 LED95-4S/730	8544.0	58.0	147.3	0.817	0.033	0.025	0.025	0.018	92.7	70.2	70.2	50.6
BGP713 LED100-4S/730	8900.0	62.0	143.5	0.873	0.034	0.026	0.026	0.019	95.5	73.1	73.1	53.4
BGP713 LED110-4S/730	9790.0	69.0	141.9	0.972	0.035	0.026	0.026	0.019	98.4	73.1	73.1	53.4
BGP713 LED120-4S/730	10680.0	76.0	140.5	1.07	0.035	0.026	0.026	0.019	98.4	73.1	73.1	53.4
BGP713 LED130-4S/730	11570.0	84.0	137.7	1.183	0.035	0.026	0.026	0.019	98.4	73.1	73.1	53.4
BGP713 LED140-4S/730	12460.0	92.0	135.4	1.296	0.036	0.027	0.027	0.02	101.2	75.9	75.9	56.2
BGP713 LED150-4S/730	13350.0	99.0	134.8	1.394	0.036	0.027	0.027	0.02	101.2	75.9	75.9	56.2
BGP713 LED160-4S/730	14080.0	108.0	130.4	1.521	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED169-4S/730	14960.0	118.0	126.8	1.662	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED8-4S/727	720.0	6.5	110.8	0.092	0.045	0.034	0.034	0.025	126.4	95.5	95.5	70.2
BGP713 LED10-4S/727	900.0	7.9	113.9	0.111	0.043	0.032	0.032	0.024	120.8	89.9	89.9	67.4
BGP713 LED12-4S/727	1080.0	9.1	118.7	0.128	0.041	0.031	0.031	0.023	115.2	87.1	87.1	64.6
BGP713 LED14-4S/727	1260.0	10.6	118.9	0.149	0.041	0.031	0.031	0.023	115.2	87.1	87.1	64.6
BGP713 LED16-4S/727	1440.0	11.8	122.0	0.166	0.04	0.03	0.03	0.022	112.4	84.3	84.3	61.8

BGP713 LED18-4S/727	1620.0	13.4	120.9	0.189	0.041	0.031	0.031	0.023	115.2	87.1	87.1	64.6
BGP713 LED20-4S/727	1800.0	15.0	120.0	0.211	0.041	0.031	0.031	0.023	115.2	87.1	87.1	64.6
BGP713 LED22-4S/727	1980.0	15.6	126.9	0.22	0.039	0.029	0.029	0.021	109.6	81.5	81.5	59.0
BGP713 LED24-4S/727	2160.0	17.0	127.1	0.239	0.039	0.029	0.029	0.021	109.6	81.5	81.5	59.0
BGP713 LED27-4S/727	2430.0	19.0	127.9	0.268	0.039	0.029	0.029	0.021	109.6	81.5	81.5	59.0
BGP713 LED30-4S/727	2700.0	21.0	128.6	0.296	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED35-4S/727	3150.0	24.5	128.6	0.345	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED40-4S/727	3600.0	28.5	126.3	0.401	0.039	0.029	0.029	0.021	109.6	81.5	81.5	59.0
BGP713 LED45-4S/727	4050.0	32.5	124.6	0.458	0.039	0.029	0.029	0.021	109.6	81.5	81.5	59.0
BGP713 LED50-4S/727	4500.0	36.5	123.3	0.514	0.04	0.03	0.03	0.022	112.4	84.3	84.3	61.8
BGP713 LED55-4S/727	5040.0	40.5	124.4	0.57	0.039	0.029	0.029	0.021	109.6	81.5	81.5	59.0
BGP713 LED60-4S/727	5400.0	41.5	130.1	0.585	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED65-4S/727	5940.0	45.5	130.5	0.641	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED70-4S/727	6230.0	49.5	125.9	0.697	0.039	0.029	0.029	0.021	109.6	81.5	81.5	59.0
BGP713 LED75-4S/727	6764.0	53.0	127.6	0.746	0.039	0.029	0.029	0.021	109.6	81.5	81.5	59.0
BGP713 LED80-4S/727	7120.0	58.0	122.8	0.817	0.04	0.03	0.03	0.022	112.4	84.3	84.3	61.8
BGP713 LED85-4S/727	7654.0	59.0	129.7	0.831	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED90-4S/727	8010.0	62.0	129.2	0.873	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED95-4S/727	8544.0	66.0	129.5	0.93	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED100-4S/727	8900.0	70.0	127.1	0.986	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED110-4S/727	9790.0	79.0	123.9	1.113	0.04	0.03	0.03	0.022	112.4	84.3	84.3	61.8
BGP713 LED120-4S/727	10680.0	87.0	122.8	1.225	0.04	0.03	0.03	0.022	112.4	84.3	84.3	61.8
BGP713 LED130-4S/727	11570.0	96.0	120.5	1.352	0.041	0.031	0.031	0.023	115.2	87.1	87.1	64.6
BGP713 LED140-4S/727	12460.0	104.0	119.8	1.465	0.041	0.031	0.031	0.023	115.2	87.1	87.1	64.6

BGP713 LED150-4S/727	13200.0	114.0	115.8	1.606	0.043	0.032	0.032	0.024	120.8	89.9	89.9	67.4
BGP713 LED8-4S/830	720.0	6.5	110.8	0.092	0.045	0.034	0.034	0.025	126.4	95.5	95.5	70.2
BGP713 LED8-4S/830	720.0	6.5	110.8	0.092	0.045	0.034	0.034	0.025	126.4	95.5	95.5	70.2
BGP713 LED10-4S/830	900.0	7.7	116.9	0.108	0.042	0.032	0.032	0.023	118.0	89.9	89.9	64.6
BGP713 LED12-4S/830	1080.0	9.1	118.7	0.128	0.041	0.031	0.031	0.023	115.2	87.1	87.1	64.6
BGP713 LED14-4S/830	1260.0	10.6	118.9	0.149	0.041	0.031	0.031	0.023	115.2	87.1	87.1	64.6
BGP713 LED16-4S/830	1440.0	11.8	122.0	0.166	0.04	0.03	0.03	0.022	112.4	84.3	84.3	61.8
BGP713 LED18-4S/830	1620.0	13.4	120.9	0.189	0.041	0.031	0.031	0.023	115.2	87.1	87.1	64.6
BGP713 LED20-4S/830	1800.0	14.2	126.8	0.2	0.039	0.029	0.029	0.021	109.6	81.5	81.5	59.0
BGP713 LED22-4S/830	1980.0	15.6	126.9	0.22	0.039	0.029	0.029	0.021	109.6	81.5	81.5	59.0
BGP713 LED24-4S/830	2160.0	17.0	127.1	0.239	0.039	0.029	0.029	0.021	109.6	81.5	81.5	59.0
BGP713 LED27-4S/830	2430.0	19.0	127.9	0.268	0.039	0.029	0.029	0.021	109.6	81.5	81.5	59.0
BGP713 LED30-4S/830	2700.0	21.0	128.6	0.296	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED35-4S/830	3150.0	25.0	126.0	0.352	0.039	0.029	0.029	0.021	109.6	81.5	81.5	59.0
BGP713 LED40-4S/830	3600.0	28.5	126.3	0.401	0.039	0.029	0.029	0.021	109.6	81.5	81.5	59.0
BGP713 LED45-4S/830	4050.0	32.5	124.6	0.458	0.039	0.029	0.029	0.021	109.6	81.5	81.5	59.0
BGP713 LED50-4S/830	4500.0	36.5	123.3	0.514	0.04	0.03	0.03	0.022	112.4	84.3	84.3	61.8
BGP713 LED55-4S/830	5040.0	38.0	132.6	0.535	0.037	0.028	0.028	0.02	104.0	78.7	78.7	56.2
BGP713 LED60-4S/830	5400.0	41.5	130.1	0.585	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED65-4S/830	5940.0	45.5	130.5	0.641	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED70-4S/830	6230.0	49.5	125.9	0.697	0.039	0.029	0.029	0.021	109.6	81.5	81.5	59.0
BGP713 LED75-4S/830	6764.0	53.0	127.6	0.746	0.039	0.029	0.029	0.021	109.6	81.5	81.5	59.0
BGP713 LED80-4S/830	7120.0	58.0	122.8	0.817	0.04	0.03	0.03	0.022	112.4	84.3	84.3	61.8
BGP713 LED85-4S/830	7654.0	59.0	129.7	0.831	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0

BGP713 LED90-4S/830	8010.0	62.0	129.2	0.873	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED95-4S/830	8544.0	66.0	129.5	0.93	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED100-4S/830	8900.0	70.0	127.1	0.986	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED110-4S/830	9790.0	79.0	123.9	1.113	0.04	0.03	0.03	0.022	112.4	84.3	84.3	61.8
BGP713 LED120-4S/830	10680.0	87.0	122.8	1.225	0.04	0.03	0.03	0.022	112.4	84.3	84.3	61.8
BGP713 LED130-4S/830	11570.0	96.0	120.5	1.352	0.041	0.031	0.031	0.023	115.2	87.1	87.1	64.6
BGP713 LED140-4S/830	12460.0	104.0	119.8	1.465	0.041	0.031	0.031	0.023	115.2	87.1	87.1	64.6
BGP713 LED150-4S/830	13200.0	114.0	115.8	1.606	0.043	0.032	0.032	0.024	120.8	89.9	89.9	67.4
BGP713 LED6-4S/722	540.0	5.6	96.4	0.079	0.051	0.038	0.038	0.028	143.3	106.8	106.8	78.7
BGP713 LED8-4S/722	720.0	7.2	100.0	0.101	0.049	0.037	0.037	0.027	137.7	104.0	104.0	75.9
BGP713 LED10-4S/722	900.0	8.6	104.7	0.121	0.047	0.035	0.035	0.026	132.1	98.4	98.4	73.1
BGP713 LED12-4S/722	1080.0	10.2	105.9	0.144	0.047	0.035	0.035	0.026	132.1	98.4	98.4	73.1
BGP713 LED14-4S/722	1260.0	11.6	108.6	0.163	0.045	0.034	0.034	0.025	126.4	95.5	95.5	70.2
BGP713 LED16-4S/722	1440.0	13.4	107.5	0.189	0.046	0.035	0.035	0.025	129.3	98.4	98.4	70.2
BGP713 LED18-4S/722	1620.0	15.0	108.0	0.211	0.046	0.035	0.035	0.025	129.3	98.4	98.4	70.2
BGP713 LED20-4S/722	1800.0	15.8	113.9	0.223	0.043	0.032	0.032	0.024	120.8	89.9	89.9	67.4
BGP713 LED22-4S/722	1980.0	17.4	113.8	0.245	0.043	0.032	0.032	0.024	120.8	89.9	89.9	67.4
BGP713 LED24-4S/722	2160.0	19.0	113.7	0.268	0.043	0.032	0.032	0.024	120.8	89.9	89.9	67.4
BGP713 LED27-4S/722	2430.0	21.0	115.7	0.296	0.043	0.032	0.032	0.024	120.8	89.9	89.9	67.4
BGP713 LED30-4S/722	2700.0	23.5	114.9	0.331	0.043	0.032	0.032	0.024	120.8	89.9	89.9	67.4
BGP713 LED35-4S/722	3150.0	28.0	112.5	0.394	0.044	0.033	0.033	0.024	123.6	92.7	92.7	67.4
BGP713 LED40-4S/722	3600.0	32.0	112.5	0.451	0.044	0.033	0.033	0.024	123.6	92.7	92.7	67.4
BGP713 LED45-4S/722	4050.0	36.5	111.0	0.514	0.044	0.033	0.033	0.024	123.6	92.7	92.7	67.4
BGP713 LED50-4S/722	4500.0	38.5	116.9	0.542	0.042	0.032	0.032	0.023	118.0	89.9	89.9	64.6

BGP713 LED55-4S/722	5040.0	43.0	117.2	0.606	0.042	0.032	0.032	0.023	118.0	89.9	89.9	64.6
BGP713 LED60-4S/722	5340.0	47.0	113.6	0.662	0.044	0.033	0.033	0.024	123.6	92.7	92.7	67.4
BGP713 LED65-4S/722	5874.0	51.0	115.2	0.718	0.043	0.032	0.032	0.024	120.8	89.9	89.9	67.4
BGP713 LED70-4S/722	6230.0	56.0	111.2	0.789	0.044	0.033	0.033	0.024	123.6	92.7	92.7	67.4
BGP713 LED75-4S/722	6764.0	61.0	110.9	0.859	0.045	0.034	0.034	0.025	126.4	95.5	95.5	70.2
BGP713 LED80-4S/722	7120.0	62.0	114.8	0.873	0.043	0.032	0.032	0.024	120.8	89.9	89.9	67.4
BGP713 LED85-4S/722	7654.0	66.0	116.0	0.93	0.043	0.032	0.032	0.024	120.8	89.9	89.9	67.4
BGP713 LED90-4S/722	8010.0	71.0	112.8	1.0	0.044	0.033	0.033	0.024	123.6	92.7	92.7	67.4
BGP713 LED95-4S/722	8544.0	75.0	113.9	1.056	0.043	0.032	0.032	0.024	120.8	89.9	89.9	67.4
BGP713 LED100-4S/722	8900.0	80.0	111.2	1.127	0.044	0.033	0.033	0.024	123.6	92.7	92.7	67.4
BGP713 LED110-4S/722	9790.0	90.0	108.8	1.268	0.046	0.035	0.035	0.025	129.3	98.4	98.4	70.2
BGP713 LED120-4S/722	10680.0	99.0	107.9	1.394	0.046	0.035	0.035	0.025	129.3	98.4	98.4	70.2
BGP713 LED130-4S/722	11440.0	116.0	98.6	1.634	0.051	0.038	0.038	0.028	143.3	106.8	106.8	78.7
BGP713 LED6-4S/840	540.0	4.9	110.2	0.069	0.045	0.034	0.034	0.025	126.4	95.5	95.5	70.2
BGP713 LED8-4S/840	720.0	6.3	114.3	0.089	0.043	0.032	0.032	0.024	120.8	89.9	89.9	67.4
BGP713 LED10-4S/840	900.0	7.5	120.0	0.106	0.041	0.031	0.031	0.023	115.2	87.1	87.1	64.6
BGP713 LED12-4S/840	1080.0	8.9	121.3	0.125	0.041	0.031	0.031	0.023	115.2	87.1	87.1	64.6
BGP713 LED14-4S/840	1260.0	10.2	123.5	0.144	0.04	0.03	0.03	0.022	112.4	84.3	84.3	61.8
BGP713 LED16-4S/840	1440.0	11.6	124.1	0.163	0.04	0.03	0.03	0.022	112.4	84.3	84.3	61.8
BGP713 LED18-4S/840	1620.0	13.0	124.6	0.183	0.04	0.03	0.03	0.022	112.4	84.3	84.3	61.8
BGP713 LED20-4S/840	1800.0	13.8	130.4	0.194	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED22-4S/840	1980.0	15.2	130.3	0.214	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED24-4S/840	2160.0	16.6	130.1	0.234	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED27-4S/840	2430.0	18.4	132.1	0.259	0.037	0.028	0.028	0.02	104.0	78.7	78.7	56.2

BGP713 LED30-4S/840	2700.0	20.5	131.7	0.289	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED35-4S/840	3150.0	24.0	131.2	0.338	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED40-4S/840	3600.0	27.5	130.9	0.387	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED45-4S/840	4050.0	31.5	128.6	0.444	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED50-4S/840	4500.0	35.0	128.6	0.493	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED55-4S/840	5040.0	36.5	138.1	0.514	0.035	0.026	0.026	0.019	98.4	73.1	73.1	53.4
BGP713 LED60-4S/840	5400.0	40.0	135.0	0.563	0.037	0.028	0.028	0.02	104.0	78.7	78.7	56.2
BGP713 LED65-4S/840	5940.0	44.0	135.0	0.62	0.037	0.028	0.028	0.02	104.0	78.7	78.7	56.2
BGP713 LED70-4S/840	6300.0	47.5	132.6	0.669	0.037	0.028	0.028	0.02	104.0	78.7	78.7	56.2
BGP713 LED75-4S/840	6764.0	51.0	132.6	0.718	0.037	0.028	0.028	0.02	104.0	78.7	78.7	56.2
BGP713 LED80-4S/840	7120.0	55.0	129.5	0.775	0.038	0.028	0.028	0.021	106.8	78.7	78.7	59.0
BGP713 LED85-4S/840	7654.0	56.0	136.7	0.789	0.036	0.027	0.027	0.02	101.2	75.9	75.9	56.2
BGP713 LED90-4S/840	8010.0	60.0	133.5	0.845	0.037	0.028	0.028	0.02	104.0	78.7	78.7	56.2
BGP713 LED95-4S/840	8544.0	64.0	133.5	0.901	0.037	0.028	0.028	0.02	104.0	78.7	78.7	56.2
BGP713 LED100-4S/840	8900.0	68.0	130.9	0.958	0.037	0.028	0.028	0.02	104.0	78.7	78.7	56.2
BGP713 LED120-4S/840	10680.0	84.0	127.1	1.183	0.039	0.029	0.029	0.021	109.6	81.5	81.5	59.0
BGP713 LED130-4S/840	11570.0	92.0	125.8	1.296	0.039	0.029	0.029	0.021	109.6	81.5	81.5	59.0
BGP713 LED140-4S/840	12460.0	100.0	124.6	1.408	0.039	0.029	0.029	0.021	109.6	81.5	81.5	59.0
BGP713 LED150-4S/840	13200.0	110.0	120.0	1.549	0.042	0.032	0.032	0.023	118.0	89.9	89.9	64.6
BGP713 LED6-4S/827	540.0	5.4	100.0	0.076	0.049	0.037	0.037	0.027	137.7	104.0	104.0	75.9
BGP713 LED8-4S/827	720.0	6.9	104.3	0.097	0.047	0.035	0.035	0.026	132.1	98.4	98.4	73.1
BGP713 LED10-4S/827	900.0	8.3	108.4	0.117	0.046	0.035	0.035	0.025	129.3	98.4	98.4	70.2
BGP713 LED12-4S/827	1080.0	9.8	110.2	0.138	0.045	0.034	0.034	0.025	126.4	95.5	95.5	70.2
BGP713 LED14-4S/827	1260.0	11.2	112.5	0.158	0.044	0.033	0.033	0.024	123.6	92.7	92.7	67.4

BGP713 LED16-4S/827	1440.0	12.8	112.5	0.18	0.044	0.033	0.033	0.024	123.6	92.7	92.7	67.4
BGP713 LED18-4S/827	1620.0	14.4	112.5	0.203	0.044	0.033	0.033	0.024	123.6	92.7	92.7	67.4
BGP713 LED20-4S/827	1800.0	15.4	116.9	0.217	0.042	0.032	0.032	0.023	118.0	89.9	89.9	64.6
BGP713 LED22-4S/827	1980.0	16.8	117.9	0.237	0.042	0.032	0.032	0.023	118.0	89.9	89.9	64.6
BGP713 LED24-4S/827	2160.0	18.2	118.7	0.256	0.041	0.031	0.031	0.023	115.2	87.1	87.1	64.6
BGP713 LED27-4S/827	2430.0	20.5	118.5	0.289	0.042	0.032	0.032	0.023	118.0	89.9	89.9	64.6
BGP713 LED30-4S/827	2700.0	22.5	120.0	0.317	0.041	0.031	0.031	0.023	115.2	87.1	87.1	64.6
BGP713 LED35-4S/827	3150.0	26.5	118.9	0.373	0.041	0.031	0.031	0.023	115.2	87.1	87.1	64.6
BGP713 LED40-4S/827	3600.0	31.0	116.1	0.437	0.042	0.032	0.032	0.023	118.0	89.9	89.9	64.6
BGP713 LED45-4S/827	4050.0	35.0	115.7	0.493	0.042	0.032	0.032	0.023	118.0	89.9	89.9	64.6
BGP713 LED50-4S/827	4500.0	37.0	121.6	0.521	0.041	0.031	0.031	0.023	115.2	87.1	87.1	64.6
BGP713 LED55-4S/827	5040.0	41.0	122.9	0.577	0.04	0.03	0.03	0.022	112.4	84.3	84.3	61.8
BGP713 LED60-4S/827	5400.0	45.0	120.0	0.634	0.041	0.031	0.031	0.023	115.2	87.1	87.1	64.6
BGP713 LED65-4S/827	5874.0	49.5	118.7	0.697	0.042	0.032	0.032	0.023	118.0	89.9	89.9	64.6
BGP713 LED70-4S/827	6230.0	54.0	115.4	0.761	0.043	0.032	0.032	0.024	120.8	89.9	89.9	67.4
BGP713 LED75-4S/827	6764.0	55.0	123.0	0.775	0.04	0.03	0.03	0.022	112.4	84.3	84.3	61.8
BGP713 LED80-4S/827	7120.0	59.0	120.7	0.831	0.041	0.031	0.031	0.023	115.2	87.1	87.1	64.6
BGP713 LED85-4S/827	7654.0	63.0	121.5	0.887	0.041	0.031	0.031	0.023	115.2	87.1	87.1	64.6
BGP713 LED90-4S/827	8010.0	68.0	117.8	0.958	0.042	0.032	0.032	0.023	118.0	89.9	89.9	64.6
BGP713 LED95-4S/827	8544.0	72.0	118.7	1.014	0.042	0.032	0.032	0.023	118.0	89.9	89.9	64.6
BGP713 LED120-4S/827	10680.0	95.0	112.4	1.338	0.044	0.033	0.033	0.024	123.6	92.7	92.7	67.4
BGP713 LED130-4S/827	11570.0	104.0	111.2	1.465	0.044	0.033	0.033	0.024	123.6	92.7	92.7	67.4

*** 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