ENVIRONMENTAL PRODUCT DECLARATION

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

Philips CityCharm Cone

BDS491
Signify N.V.

EPD HUB
Publishing date 2024-02-14

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 CityCharm Cone
Additional labels	BDS491 LED60/830 PSD I A GR D9 H07RN 60
Product reference	910771135025
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 of 4200 lumens over 100000 hours
Declared unit mass	12 kg
GWP-fossil, A1-A3 (kgCO2e)	2.26E+02
GWP-total, A1-A3 (kgCO2e)	2.26E+02
Secondary material, inputs (%)	6.88
Secondary material, outputs (%)	36.8
Total energy use, A1-A3 (kWh)	733.0
Total water use, A1-A3 (m3e)	1.52E+00

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

The Philips CityCharm range is designed for use in urban areas where comfortable lighting, ambience, and design play an important role. It offers three iconic, timeless designs: CityCharm cordoba (BDS490), CityCharm cone (BDS491), and CityCharm fluid (BDS492) along with a range of decorative and practical accessories. This enables you to create a lighting solution that carries the signature of your municipality, both by day and by night. Whether you specify cordoba, cone or fluid LED lights, CityCharm provides high visual comfort while maintaining excellent performance. It offers a choice of two innovative Philips Lighting technologies: GentleBeam, which maximizes visual comfort, or ClearGuide (cordoba or cone), which optimizes vertical illumination and visual guidance. To personalize your CityCharm lighting solution further, decorative accessories for this range make it possible to define the volume of the bowl and change its appearance. A variety of dedicated brackets and masts are also available to enable you to reshape your residential areas and city centers in the most elegant way imaginable.

For more information, please visit
https://www.lighting.philips.com/link/BDS491/fam/aa/en

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	53.44	APAC , EU
Minerals	1.65	APAC
Fossil materials	44.9	APAC , EU
Bio-based materials	0	Not applicable

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0.06

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 Product
Mass per declared unit	12 kg
Functional unit	1 unit of 4200 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.

Footer_input

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)

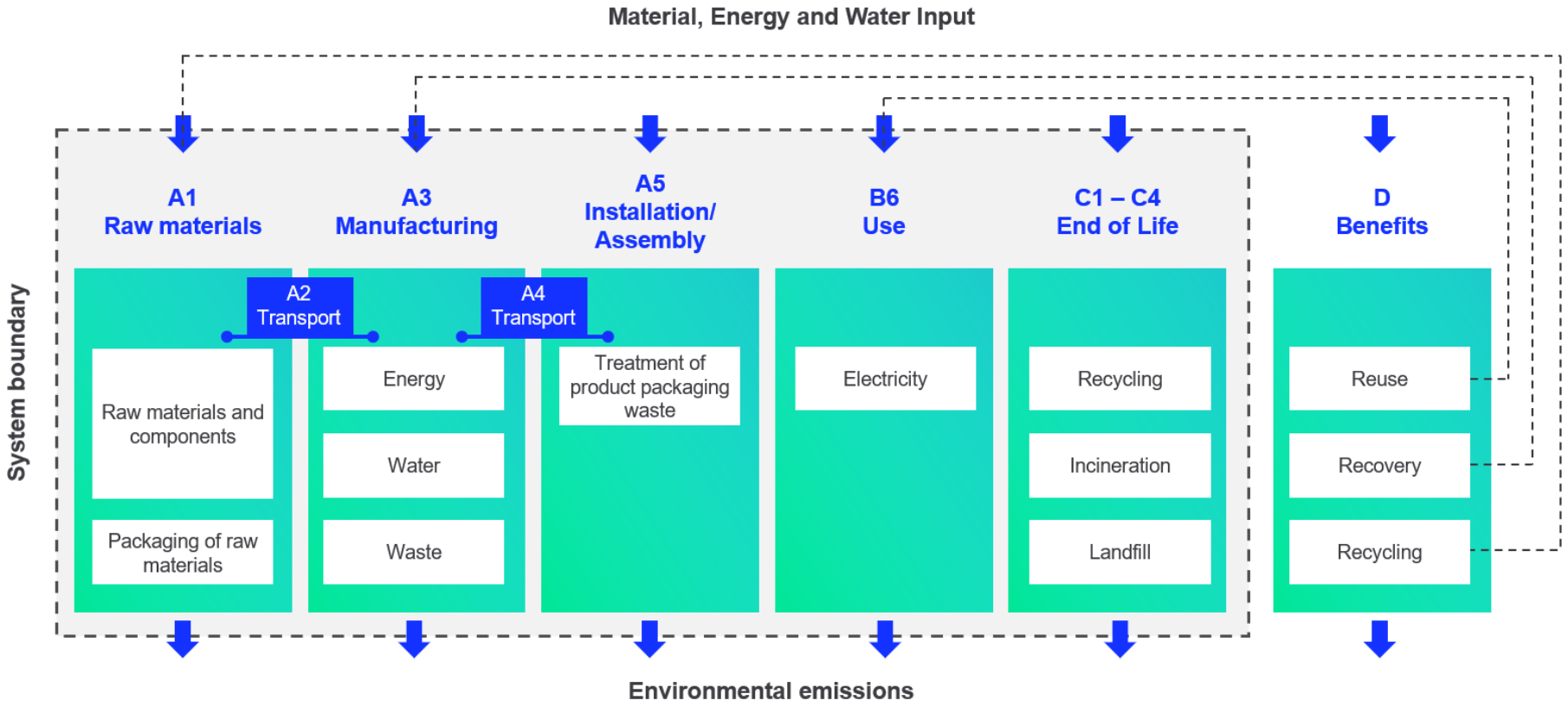
During the use phase, the product consumes electricity from Europe's electricity grid mix (B6). The total power consumption of the reference product is calculated as follows: Wattage x Reference lifetime = kWh consumed throughout the entire use phase B6.

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
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	2.24E+02	2.34E+00	2.66E-01	2.26E+02	2.34E+00	2.23E-01	MNR	MNR	MNR	MNR	MNR	1.67E+03	MNR	MNR	1.73E-01	6.15E+00	3.49E+00	-8.48E+01
GWP – fossil	kg CO_2e	2.24E+02	2.34E+00	4.81E-01	2.26E+02	2.34E+00	6.15E-03	MNR	MNR	MNR	MNR	MNR	1.66E+03	MNR	MNR	1.73E-01	6.15E+00	3.49E+00	-8.48E+01
GWP – biogenic	kg CO_2e	-8.71E-02	0.00E+00	-2.17E-01	-3.04E-01	9.06E-04	2.17E-01	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	0.00E+00	0.00E+00	-2.16E-02
GWP – LULUC	kg CO_2e	3.08E-01	9.16E-04	2.50E-03	3.12E-01	8.64E-04	2.14E-06	MNR	MNR	MNR	MNR	MNR	3.89E+00	MNR	MNR	6.37E-05	1.99E-04	1.42E-04	-1.09E-02
Ozone depletion pot.	kg CFC_{-11}e	3.62E-05	5.35E-07	6.14E-08	3.68E-05	5.39E-07	5.73E-10	MNR	MNR	MNR	MNR	MNR	8.45E-05	MNR	MNR	3.97E-08	2.55E-08	2.08E-08	-2.31E-06
Acidification potential	mol H^+e	1.85E+00	1.40E-02	1.77E-03	1.87E+00	9.92E-03	4.74E-05	MNR	MNR	MNR	MNR	MNR	9.51E+00	MNR	MNR	7.31E-04	2.69E-03	1.30E-03	-9.86E-01
EP-freshwater[2)]	kg Pe	1.73E-02	1.85E-05	1.80E-05	1.73E-02	1.92E-05	6.14E-08	MNR	MNR	MNR	MNR	MNR	1.76E-01	MNR	MNR	1.41E-06	6.55E-06	6.53E-06	-5.69E-03
EP-marine	kg Ne	2.36E-01	3.91E-03	6.54E-04	2.41E-01	2.95E-03	2.05E-05	MNR	MNR	MNR	MNR	MNR	1.26E+00	MNR	MNR	2.17E-04	9.27E-04	1.60E-03	-9.81E-02
EP-terrestrial	mol Ne	2.64E+00	4.32E-02	4.74E-03	2.68E+00	3.25E-02	2.12E-04	MNR	MNR	MNR	MNR	MNR	1.43E+01	MNR	MNR	2.40E-03	9.87E-03	5.20E-03	-1.15E+00
POCP ("smog")[3)]	kg NMVOCe	8.10E-01	1.31E-02	2.13E-03	8.25E-01	1.04E-02	5.28E-05	MNR	MNR	MNR	MNR	MNR	3.92E+00	MNR	MNR	7.67E-04	2.50E-03	1.55E-03	-3.32E-01
ADP-minerals & metals[4)]	kg Sbe	1.32E-02	5.36E-06	2.48E-06	1.32E-02	5.49E-06	1.85E-08	MNR	MNR	MNR	MNR	MNR	1.55E-02	MNR	MNR	4.05E-07	1.36E-05	5.19E-07	-4.63E-03
ADP-fossil resources	MJ	2.55E+03	3.48E+01	7.18E+00	2.59E+03	3.52E+01	4.67E-02	MNR	MNR	MNR	MNR	MNR	3.54E+04	MNR	MNR	2.59E+00	2.48E+00	1.92E+00	-8.30E+02
Water use[5)]	m^3e depr.	6.26E+01	1.53E-01	2.38E-01	6.30E+01	1.57E-01	1.05E-02	MNR	MNR	MNR	MNR	MNR	9.68E+02	MNR	MNR	1.16E-02	2.62E-01	1.73E-01	-6.78E+00

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	1.55E-05	2.58E-07	3.24E-08	1.58E-05	2.70E-07	4.33E-10	MNR	MNR	MNR	MNR	MNR	3.12E-05	MNR	MNR	1.99E-08	2.45E-08	1.42E-08	-5.01E-06
Ionizing radiation[6)]	kBq U235e	1.15E+01	1.66E-01	2.11E-02	1.17E+01	1.68E-01	1.61E-04	MNR	MNR	MNR	MNR	MNR	9.59E+02	MNR	MNR	1.24E-02	1.19E-02	9.03E-03	-5.00E+00

Ecotoxicity (freshwater)	CTUe	1.04E+04	3.09E+01	1.34E+01	1.04E+04	3.17E+01	2.79E-01	MNR	MNR	MNR	MNR	MNR	2.41E+04	MNR	MNR	2.33E+00	1.91E+01	5.55E+02	-2.83E+03
Human toxicity, cancer	CTUh	3.07E-07	8.16E-10	3.09E-10	3.08E-07	7.78E-10	1.60E-11	MNR	MNR	MNR	MNR	MNR	7.89E-07	MNR	MNR	5.73E-11	7.27E-10	3.25E-09	-2.29E-08
Human tox. non-cancer	CTUh	1.05E-05	3.02E-08	5.65E-09	1.06E-05	3.13E-08	6.46E-10	MNR	MNR	MNR	MNR	MNR	2.59E-05	MNR	MNR	2.31E-09	2.88E-08	1.92E-07	-3.98E-06
SQP[7)]	-	6.73E+02	3.83E+01	1.37E+01	7.25E+02	4.05E+01	2.72E-02	MNR	MNR	MNR	MNR	MNR	6.40E+03	MNR	MNR	2.99E+00	3.09E+00	2.53E+00	-2.15E+02

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

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	1.81E+02	3.85E-01	5.80E+00	1.87E+02	3.96E-01	1.39E-03	MNR	MNR	MNR	MNR	MNR	7.21E+03	MNR	MNR	2.92E-02	2.55E-01	7.73E-02	-1.92E+01
Renew. PER as material	MJ	8.08E-01	0.00E+00	1.98E+00	2.79E+00	0.00E+00	-1.98E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renew. PER	MJ	1.82E+02	3.85E-01	7.78E+00	1.90E+02	3.96E-01	-1.98E+00	MNR	MNR	MNR	MNR	MNR	7.21E+03	MNR	MNR	2.92E-02	2.55E-01	7.73E-02	-1.92E+01
Non-re. PER as energy	MJ	2.41E+03	3.48E+01	6.49E+00	2.45E+03	3.52E+01	4.67E-02	MNR	MNR	MNR	MNR	MNR	3.53E+04	MNR	MNR	2.59E+00	2.48E+00	1.92E+00	-8.30E+02
Non-re. PER as material	MJ	1.35E+02	0.00E+00	2.85E-02	1.35E+02	0.00E+00	-2.85E-02	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	-6.56E+01	-6.56E+01	0.00E+00
Total use of non-re. PER	MJ	2.55E+03	3.48E+01	6.51E+00	2.59E+03	3.52E+01	1.82E-02	MNR	MNR	MNR	MNR	MNR	3.53E+04	MNR	MNR	2.59E+00	-6.32E+01	-6.37E+01	-8.30E+02
Secondary materials	kg	8.26E-01	1.00E-02	1.06E-01	9.42E-01	9.77E-03	5.39E-05	MNR	MNR	MNR	MNR	MNR	3.64E+00	MNR	MNR	7.20E-04	2.46E-03	3.57E-03	3.48E+00
Renew. secondary fuels	MJ	8.03E-02	9.48E-05	7.43E-03	8.79E-02	9.86E-05	7.54E-07	MNR	MNR	MNR	MNR	MNR	2.96E-02	MNR	MNR	7.27E-06	1.10E-04	4.03E-05	-3.58E-03
Non-ren. secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m^3	1.51E+00	4.40E-03	5.67E-03	1.52E+00	4.56E-03	1.39E-04	MNR	MNR	MNR	MNR	MNR	3.05E+01	MNR	MNR	3.36E-04	9.59E-03	5.26E-03	-3.12E-01

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D

Hazardous waste	kg	3.57E+01	4.63E-02	2.95E-02	3.58E+01	4.67E-02	1.81E-03	MNR	MNR	MNR	MNR	MNR	1.27E+02	MNR	MNR	3.44E-03	1.04E-02	1.12E-01	-1.33E+01
Non-hazardous waste	kg	4.37E+02	7.40E-01	4.77E-01	4.38E+02	7.67E-01	1.06E-01	MNR	MNR	MNR	MNR	MNR	8.04E+03	MNR	MNR	5.65E-02	2.80E+00	5.27E+00	-2.82E+02
Radioactive waste	kg	4.56E-03	2.34E-04	1.51E-05	4.81E-03	2.35E-04	1.03E-07	MNR	MNR	MNR	MNR	MNR	2.58E-01	MNR	MNR	1.74E-05	6.08E-06	0.00E+00	-1.84E-03

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	4.41E+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	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	6.83E-01	6.83E-01	0.00E+00	0.00E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	5.58E+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	2.17E+02	2.32E+00	4.89E-01	2.20E+02	2.32E+00	5.86E-03	MNR	MNR	MNR	MNR	MNR	1.65E+03	MNR	MNR	1.71E-01	6.14E+00	3.90E+00	-8.31E+01
Ozone depletion Pot.	kg CFC_{-11}e	2.66E-05	4.23E-07	5.16E-08	2.71E-05	4.27E-07	4.96E-10	MNR	MNR	MNR	MNR	MNR	7.32E-05	MNR	MNR	3.15E-08	2.18E-08	1.73E-08	-1.96E-06
Acidification	kg SO_2e	1.58E+00	1.09E-02	1.37E-03	1.59E+00	7.71E-03	3.43E-05	MNR	MNR	MNR	MNR	MNR	8.06E+00	MNR	MNR	5.68E-04	2.04E-03	9.65E-04	-8.52E-01
Eutrophication	kg PO_4^3e	5.13E-01	2.06E-03	8.19E-04	5.16E-01	1.76E-03	2.62E-05	MNR	MNR	MNR	MNR	MNR	6.20E+00	MNR	MNR	1.29E-04	1.05E-03	1.10E-02	-2.34E-01

POCP (“smog”)	kg C_2H_4e	8.88E-02	3.78E-04	1.49E-04	8.94E-02	3.01E-04	1.02E-06	MNR	MNR	MNR	MNR	MNR	3.30E-01	MNR	MNR	2.22E-05	6.14E-05	1.56E-04	-4.06E-02
ADP-elements	kg Sbe	1.31E-02	5.19E-06	2.33E-06	1.31E-02	5.32E-06	1.46E-08	MNR	MNR	MNR	MNR	MNR	1.55E-02	MNR	MNR	3.92E-07	1.34E-05	4.46E-07	-4.62E-03
ADP-fossil	MJ	2.53E+03	3.48E+01	7.16E+00	2.57E+03	3.52E+01	4.67E-02	MNR	MNR	MNR	MNR	MNR	3.53E+04	MNR	MNR	2.59E+00	2.48E+00	1.92E+00	-8.30E+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
BDS491 LED10/740	710.0	7.0	101.4	0.156	0.156	0.117	0.117	0.086	260.5	195.4	195.4	143.6
BDS491 LED15/740	1065.0	10.0	106.5	0.222	0.222	0.167	0.167	0.122	370.7	278.9	278.9	203.7
BDS491 LED20/740	1420.0	13.2	107.6	0.293	0.293	0.22	0.22	0.161	489.3	367.4	367.4	268.9
BDS491 LED25/740	1775.0	16.8	105.7	0.373	0.373	0.28	0.28	0.205	622.9	467.6	467.6	342.3
BDS491 LED30/740	2130.0	18.8	113.3	0.418	0.418	0.314	0.314	0.23	698.1	524.4	524.4	384.1
BDS491 LED40/740	2840.0	25.0	113.6	0.556	0.556	0.417	0.417	0.306	928.5	696.4	696.4	511.0
BDS491 LED50/740	3550.0	31.0	114.5	0.689	0.689	0.517	0.517	0.379	1150.6	863.4	863.4	632.9
BDS491 LED60/740	4200.0	35.0	120.0	0.778	0.778	0.584	0.584	0.428	1299.3	975.3	975.3	714.8
BDS491 LED70/740	4900.0	41.0	119.5	0.911	0.911	0.683	0.683	0.501	1521.4	1140.6	1140.6	836.7
BDS491 LED80/740	5600.0	47.0	119.1	1.044	1.044	0.783	0.783	0.574	1743.5	1307.6	1307.6	958.6
BDS491 LED90/740	6300.0	53.0	118.9	1.178	1.178	0.883	0.883	0.648	1967.3	1474.6	1474.6	1082.2
BDS491 LED100/740	6900.0	60.0	115.0	1.333	1.333	1.0	1.0	0.733	2226.1	1670.0	1670.0	1224.1

BDS491 LED10/830	710.0	8.7	81.6	0.193	0.193	0.145	0.145	0.106	322.3	242.1	242.1	177.0
BDS491 LED15/830	1065.0	12.6	84.5	0.28	0.28	0.21	0.21	0.154	467.6	350.7	350.7	257.2
BDS491 LED20/830	1420.0	17.2	82.6	0.382	0.382	0.286	0.286	0.21	637.9	477.6	477.6	350.7
BDS491 LED25/830	1775.0	19.8	89.6	0.44	0.44	0.33	0.33	0.242	734.8	551.1	551.1	404.1
BDS491 LED30/830	2130.0	23.5	90.6	0.522	0.522	0.392	0.392	0.287	871.7	654.6	654.6	479.3
BDS491 LED40/830	2800.0	32.0	87.5	0.711	0.711	0.533	0.533	0.391	1187.4	890.1	890.1	653.0
BDS491 LED50/830	3500.0	40.5	86.4	0.9	0.9	0.675	0.675	0.495	1503.0	1127.2	1127.2	826.6
BDS491 LED60/830 PSD I A GR D9 H07RN 60	4200.0	45.0	93.3	1.0	1.0	0.75	0.75	0.55	1670.0	1252.5	1252.5	918.5
BDS491 LED70/830	4900.0	53.0	92.5	1.178	1.178	0.883	0.883	0.648	1967.3	1474.6	1474.6	1082.2
BDS491 LED80/830	5520.0	61.0	90.5	1.356	1.356	1.017	1.017	0.746	2264.5	1698.4	1698.4	1245.8
BDS491 LED90/830	6210.0	69.0	90.0	1.533	1.533	1.15	1.15	0.843	2560.1	1920.5	1920.5	1407.8
BDS491 LED100/830	6800.0	78.0	87.2	1.733	1.733	1.3	1.3	0.953	2894.1	2171.0	2171.0	1591.5
BDS491 LED10/722	710.0	9.2	77.2	0.204	0.204	0.153	0.153	0.112	340.7	255.5	255.5	187.0
BDS491 LED15/722	1065.0	13.6	78.3	0.302	0.302	0.226	0.226	0.166	504.3	377.4	377.4	277.2
BDS491 LED20/722	1420.0	17.2	82.6	0.382	0.382	0.286	0.286	0.21	637.9	477.6	477.6	350.7
BDS491 LED25/722	1775.0	21.5	82.6	0.478	0.478	0.358	0.358	0.263	798.3	597.9	597.9	439.2
BDS491 LED30/722	2130.0	25.5	83.5	0.567	0.567	0.425	0.425	0.312	946.9	709.8	709.8	521.0
BDS491 LED40/722	2800.0	34.5	81.2	0.767	0.767	0.575	0.575	0.422	1280.9	960.2	960.2	704.7
BDS491 LED50/722	3500.0	40.0	87.5	0.889	0.889	0.667	0.667	0.489	1484.6	1113.9	1113.9	816.6
BDS491 LED60/722	4200.0	48.5	86.6	1.078	1.078	0.808	0.808	0.593	1800.3	1349.4	1349.4	990.3
BDS491 LED70/722	4830.0	57.0	84.7	1.267	1.267	0.95	0.95	0.697	2115.9	1586.5	1586.5	1164.0
BDS491 LED80/722	5520.0	66.0	83.6	1.467	1.467	1.1	1.1	0.807	2449.9	1837.0	1837.0	1347.7
BDS491 LED90/722	6120.0	75.0	81.6	1.667	1.667	1.25	1.25	0.917	2783.9	2087.5	2087.5	1531.4
BDS491 LED100/722	6800.0	85.0	80.0	1.889	1.889	1.417	1.417	1.039	3154.6	2366.4	2366.4	1735.1

BDS491 LED10/727	710.0	8.0	88.8	0.178	0.178	0.134	0.134	0.098	297.3	223.8	223.8	163.7
BDS491 LED15/727	1065.0	11.6	91.8	0.258	0.258	0.194	0.194	0.142	430.9	324.0	324.0	237.1
BDS491 LED20/727	1420.0	15.8	89.9	0.351	0.351	0.263	0.263	0.193	586.2	439.2	439.2	322.3
BDS491 LED25/727	1775.0	18.4	96.5	0.409	0.409	0.307	0.307	0.225	683.0	512.7	512.7	375.8
BDS491 LED30/727	2130.0	22.0	96.8	0.489	0.489	0.367	0.367	0.269	816.6	612.9	612.9	449.2
BDS491 LED40/727	2800.0	29.5	94.9	0.656	0.656	0.492	0.492	0.361	1095.5	821.6	821.6	602.9
BDS491 LED50/727	3500.0	37.5	93.3	0.833	0.833	0.625	0.625	0.458	1391.1	1043.8	1043.8	764.9
BDS491 LED60/727	4200.0	41.5	101.2	0.922	0.922	0.692	0.692	0.507	1539.7	1155.6	1155.6	846.7
BDS491 LED70/727	4830.0	48.5	99.6	1.078	1.078	0.808	0.808	0.593	1800.3	1349.4	1349.4	990.3
BDS491 LED80/727	5520.0	56.0	98.6	1.244	1.244	0.933	0.933	0.684	2077.5	1558.1	1558.1	1142.3
BDS491 LED90/727	6120.0	64.0	95.6	1.422	1.422	1.067	1.067	0.782	2374.7	1781.9	1781.9	1305.9
BDS491 LED100/727	6800.0	72.0	94.4	1.6	1.6	1.2	1.2	0.88	2672.0	2004.0	2004.0	1469.6
BDS491 LED10/730	710.0	7.3	97.3	0.162	0.162	0.121	0.121	0.089	270.5	202.1	202.1	148.6
BDS491 LED15/730	1065.0	10.6	100.5	0.236	0.236	0.177	0.177	0.13	394.1	295.6	295.6	217.1
BDS491 LED20/730	1420.0	14.2	100.0	0.316	0.316	0.237	0.237	0.174	527.7	395.8	395.8	290.6
BDS491 LED25/730	1775.0	16.6	106.9	0.369	0.369	0.277	0.277	0.203	616.2	462.6	462.6	339.0
BDS491 LED30/730	2130.0	19.8	107.6	0.44	0.44	0.33	0.33	0.242	734.8	551.1	551.1	404.1
BDS491 LED40/730	2840.0	26.5	107.2	0.589	0.589	0.442	0.442	0.324	983.6	738.1	738.1	541.1
BDS491 LED50/730	3500.0	33.5	104.5	0.744	0.744	0.558	0.558	0.409	1242.5	931.9	931.9	683.0
BDS491 LED60/730	4200.0	37.5	112.0	0.833	0.833	0.625	0.625	0.458	1391.1	1043.8	1043.8	764.9
BDS491 LED70/730	4900.0	43.5	112.6	0.967	0.967	0.725	0.725	0.532	1614.9	1210.8	1210.8	888.4
BDS491 LED80/730	5600.0	50.0	112.0	1.111	1.111	0.833	0.833	0.611	1855.4	1391.1	1391.1	1020.4
BDS491 LED90/730	6300.0	57.0	110.5	1.267	1.267	0.95	0.95	0.697	2115.9	1586.5	1586.5	1164.0
BDS491 LED100/730	6900.0	64.0	107.8	1.422	1.422	1.067	1.067	0.782	2374.7	1781.9	1781.9	1305.9

BDS491 LED10/827	710.0	9.2	77.2	0.204	0.204	0.153	0.153	0.112	340.7	255.5	255.5	187.0
BDS491 LED15/827	1065.0	13.6	78.3	0.302	0.302	0.226	0.226	0.166	504.3	377.4	377.4	277.2
BDS491 LED20/827	1420.0	17.2	82.6	0.382	0.382	0.286	0.286	0.21	637.9	477.6	477.6	350.7
BDS491 LED25/827	1775.0	21.5	82.6	0.478	0.478	0.358	0.358	0.263	798.3	597.9	597.9	439.2
BDS491 LED30/827	2130.0	25.5	83.5	0.567	0.567	0.425	0.425	0.312	946.9	709.8	709.8	521.0
BDS491 LED40/827	2800.0	34.5	81.2	0.767	0.767	0.575	0.575	0.422	1280.9	960.2	960.2	704.7
BDS491 LED50/827	3500.0	40.0	87.5	0.889	0.889	0.667	0.667	0.489	1484.6	1113.9	1113.9	816.6
BDS491 LED60/827	4200.0	48.5	86.6	1.078	1.078	0.808	0.808	0.593	1800.3	1349.4	1349.4	990.3
BDS491 LED70/827	4830.0	57.0	84.7	1.267	1.267	0.95	0.95	0.697	2115.9	1586.5	1586.5	1164.0
BDS491 LED80/827	5520.0	66.0	83.6	1.467	1.467	1.1	1.1	0.807	2449.9	1837.0	1837.0	1347.7
BDS491 LED90/827	6120.0	75.0	81.6	1.667	1.667	1.25	1.25	0.917	2783.9	2087.5	2087.5	1531.4
BDS491 LED100/827	6800.0	85.0	80.0	1.889	1.889	1.417	1.417	1.039	3154.6	2366.4	2366.4	1735.1
BDS491 LED10/840	710.0	8.4	84.5	0.187	0.187	0.14	0.14	0.103	312.3	233.8	233.8	172.0
BDS491 LED15/840	1065.0	12.2	87.3	0.271	0.271	0.203	0.203	0.149	452.6	339.0	339.0	248.8
BDS491 LED20/840	1420.0	16.6	85.5	0.369	0.369	0.277	0.277	0.203	616.2	462.6	462.6	339.0
BDS491 LED25/840	1775.0	19.2	92.4	0.427	0.427	0.32	0.32	0.235	713.1	534.4	534.4	392.4
BDS491 LED30/840	2130.0	23.0	92.6	0.511	0.511	0.383	0.383	0.281	853.4	639.6	639.6	469.3
BDS491 LED40/840	2840.0	31.0	91.6	0.689	0.689	0.517	0.517	0.379	1150.6	863.4	863.4	632.9
BDS491 LED50/840	3500.0	39.0	89.7	0.867	0.867	0.65	0.65	0.477	1447.9	1085.5	1085.5	796.6
BDS491 LED60/840	4200.0	43.5	96.6	0.967	0.967	0.725	0.725	0.532	1614.9	1210.8	1210.8	888.4
BDS491 LED70/840	4900.0	51.0	96.1	1.133	1.133	0.85	0.85	0.623	1892.1	1419.5	1419.5	1040.4
BDS491 LED80/840	5520.0	59.0	93.6	1.311	1.311	0.983	0.983	0.721	2189.4	1641.6	1641.6	1204.1
BDS491 LED90/840	6210.0	67.0	92.7	1.489	1.489	1.117	1.117	0.819	2486.6	1865.4	1865.4	1367.7
BDS491 LED100/840	6900.0	75.0	92.0	1.667	1.667	1.25	1.25	0.917	2783.9	2087.5	2087.5	1531.4

** 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.*

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)

					Total Scaling Factor (TSF)				Scaled Impacts (GWP100 B6 - kg CO2eq.)			
Description	Flux [lm]	Power [W]	Efficacy [lm/W]	PSF	NC	DD	PS	DD+PS	NC	DD	PS	DD+PS
BDS491 LED10/740	710	7	101.43	0.16	0.16	0.12	0.12	0.09	128.1	96.0	96.0	70.4
BDS491 LED15/740	1065	10	106.50	0.22	0.22	0.17	0.17	0.12	122.0	91.5	91.5	67.1
BDS491 LED20/740	1420	13.2	107.58	0.29	0.29	0.22	0.22	0.16	120.7	90.6	90.6	66.4
BDS491 LED25/740	1775	16.8	105.65	0.37	0.37	0.28	0.28	0.21	122.9	92.2	92.2	67.6
BDS491 LED30/740	2130	18.8	113.29	0.42	0.42	0.31	0.31	0.23	114.6	86.0	86.0	63.1
BDS491 LED40/740	2840	25	113.6	0.56	0.56	0.42	0.42	0.31	114.3	85.8	85.8	62.9
BDS491 LED50/740	3550	31	114.51	0.69	0.69	0.52	0.52	0.38	113.4	85.1	85.1	62.4
BDS491 LED60/740	4200	35	120	0.78	0.78	0.58	0.58	0.43	108.2	81.2	81.2	59.5
BDS491 LED70/740	4900	41	119.51	0.91	0.91	0.68	0.68	0.50	108.7	81.5	81.5	59.8
BDS491 LED80/740	5600	47	119.14	1.04	1.04	0.78	0.78	0.57	109.0	81.8	81.8	60.0
BDS491 LED90/740	6300	53	118.86	1.18	1.18	0.88	0.88	0.65	109.3	82.0	82.0	60.1
BDS491 LED100/740	6900	60	115	1.33	1.33	1.00	1.00	0.73	112.9	84.7	84.7	62.1
BDS491 LED10/830	710	8.7	81.60	0.19	0.19	0.15	0.15	0.11	159.2	119.4	119.4	87.5
BDS491 LED15/830	1065	12.6	84.52	0.28	0.28	0.21	0.21	0.15	153.7	115.3	115.3	84.5
BDS491 LED20/830	1420	17.2	82.55	0.38	0.38	0.29	0.29	0.21	157.3	118.0	118.0	86.5
BDS491 LED25/830	1775	19.8	89.64	0.44	0.44	0.33	0.33	0.24	144.9	108.7	108.7	79.7
BDS491 LED30/830	2130	23.5	90.63	0.52	0.52	0.39	0.39	0.29	143.3	107.5	107.5	78.8
BDS491 LED40/830	2800	32	87.5	0.71	0.71	0.53	0.53	0.39	148.4	111.3	111.3	81.6
BDS491 LED50/830	3500	40.5	86.41	0.90	0.90	0.68	0.68	0.50	150.3	112.7	112.7	82.7
BDS491 LED60/830 PSD I A GR D9 H07RN 60	4200	45	93.33	1.00	1.00	0.75	0.75	0.55	139.2	104.4	104.4	76.5
BDS491 LED70/830	4900	53	92.45	1.18	1.18	0.88	0.88	0.65	140.5	105.4	105.4	77.3
BDS491 LED80/830	5520	61	90.49	1.36	1.36	1.02	1.02	0.75	143.5	107.7	107.7	78.9

BDS491 LED90/830	6210	69	90	1.53	1.53	1.15	1.15	0.84	144.3	108.2	108.2	79.4
BDS491 LED100/830	6800	78	87.17	1.73	1.73	1.30	1.30	0.95	149.0	111.7	111.7	81.9
BDS491 LED10/722	710	9.2	77.17	0.20	0.20	0.15	0.15	0.11	168.3	126.2	126.2	92.6
BDS491 LED15/722	1065	13.6	78.30	0.30	0.30	0.23	0.23	0.17	165.9	124.4	124.4	91.2
BDS491 LED20/722	1420	17.2	82.55	0.38	0.38	0.29	0.29	0.21	157.3	118.0	118.0	86.5
BDS491 LED25/722	1775	21.5	82.55	0.48	0.48	0.36	0.36	0.26	157.3	118.0	118.0	86.5
BDS491 LED30/722	2130	25.5	83.52	0.57	0.57	0.43	0.43	0.31	155.5	116.6	116.6	85.5
BDS491 LED40/722	2800	34.5	81.15	0.77	0.77	0.58	0.58	0.42	160.0	120.0	120.0	88.0
BDS491 LED50/722	3500	40	87.5	0.89	0.89	0.67	0.67	0.49	148.4	111.3	111.3	81.6
BDS491 LED60/722	4200	48.5	86.59	1.08	1.08	0.81	0.81	0.59	150.0	112.5	112.5	82.5
BDS491 LED70/722	4830	57	84.73	1.27	1.27	0.95	0.95	0.70	153.3	115.0	115.0	84.3
BDS491 LED80/722	5520	66	83.63	1.47	1.47	1.10	1.10	0.81	155.3	116.5	116.5	85.4
BDS491 LED90/722	6120	75	81.6	1.67	1.67	1.25	1.25	0.92	159.2	119.4	119.4	87.5
BDS491 LED100/722	6800	85	80	1.89	1.89	1.42	1.42	1.04	162.4	121.8	121.8	89.3
BDS491 LED10/727	710	8	88.75	0.18	0.18	0.13	0.13	0.10	146.4	109.8	109.8	80.5
BDS491 LED15/727	1065	11.6	91.81	0.26	0.26	0.19	0.19	0.14	141.5	106.1	106.1	77.8
BDS491 LED20/727	1420	15.8	89.87	0.35	0.35	0.26	0.26	0.19	144.5	108.4	108.4	79.5
BDS491 LED25/727	1775	18.4	96.46	0.41	0.41	0.31	0.31	0.22	134.6	101.0	101.0	74.1
BDS491 LED30/727	2130	22	96.81	0.49	0.49	0.37	0.37	0.27	134.2	100.6	100.6	73.8
BDS491 LED40/727	2800	29.5	94.91	0.66	0.66	0.49	0.49	0.36	136.8	102.6	102.6	75.3
BDS491 LED50/727	3500	37.5	93.33	0.83	0.83	0.63	0.63	0.46	139.2	104.4	104.4	76.5
BDS491 LED60/727	4200	41.5	101.20	0.92	0.92	0.69	0.69	0.51	128.3	96.3	96.3	70.6
BDS491 LED70/727	4830	48.5	99.58	1.08	1.08	0.81	0.81	0.59	130.4	97.8	97.8	71.7
BDS491 LED80/727	5520	56	98.57	1.24	1.24	0.93	0.93	0.68	131.8	98.8	98.8	72.5
BDS491 LED90/727	6120	64	95.62	1.42	1.42	1.07	1.07	0.78	135.8	101.9	101.9	74.7
BDS491 LED100/727	6800	72	94.44	1.60	1.60	1.20	1.20	0.88	137.5	103.1	103.1	75.6
BDS491 LED10/730	710	7.3	97.26	0.16	0.16	0.12	0.12	0.09	133.5	100.2	100.2	73.5
BDS491 LED15/730	1065	10.6	100.47	0.24	0.24	0.18	0.18	0.13	129.3	97.0	97.0	71.1
BDS491 LED20/730	1420	14.2	100	0.32	0.32	0.24	0.24	0.17	129.9	97.4	97.4	71.4
BDS491 LED25/730	1775	16.6	106.92	0.37	0.37	0.28	0.28	0.20	121.5	91.1	91.1	66.8

BDS491 LED30/730	2130	19.8	107.57	0.44	0.44	0.33	0.33	0.24	120.7	90.6	90.6	66.4
BDS491 LED40/730	2840	26.5	107.16	0.59	0.59	0.44	0.44	0.32	121.2	90.9	90.9	66.7
BDS491 LED50/730	3500	33.5	104.47	0.74	0.74	0.56	0.56	0.41	124.3	93.2	93.2	68.4
BDS491 LED60/730	4200	37.5	112	0.83	0.83	0.63	0.63	0.46	116.0	87.0	87.0	63.8
BDS491 LED70/730	4900	43.5	112.64	0.97	0.97	0.73	0.73	0.53	115.3	86.5	86.5	63.4
BDS491 LED80/730	5600	50	112	1.11	1.11	0.83	0.83	0.61	116.0	87.0	87.0	63.8
BDS491 LED90/730	6300	57	110.52	1.27	1.27	0.95	0.95	0.70	117.5	88.1	88.1	64.6
BDS491 LED100/730	6900	64	107.81	1.42	1.42	1.07	1.07	0.78	120.5	90.4	90.4	66.3
BDS491 LED10/827	710	9.2	77.17	0.20	0.20	0.15	0.15	0.11	168.3	126.2	126.2	92.6
BDS491 LED15/827	1065	13.6	78.30	0.30	0.30	0.23	0.23	0.17	165.9	124.4	124.4	91.2
BDS491 LED20/827	1420	17.2	82.55	0.38	0.38	0.29	0.29	0.21	157.3	118.0	118.0	86.5
BDS491 LED25/827	1775	21.5	82.55	0.48	0.48	0.36	0.36	0.26	157.3	118.0	118.0	86.5
BDS491 LED30/827	2130	25.5	83.52	0.57	0.57	0.43	0.43	0.31	155.5	116.6	116.6	85.5
BDS491 LED40/827	2800	34.5	81.15	0.77	0.77	0.58	0.58	0.42	160.0	120.0	120.0	88.0
BDS491 LED50/827	3500	40	87.5	0.89	0.89	0.67	0.67	0.49	148.4	111.3	111.3	81.6
BDS491 LED60/827	4200	48.5	86.59	1.08	1.08	0.81	0.81	0.59	150.0	112.5	112.5	82.5
BDS491 LED70/827	4830	57	84.73	1.27	1.27	0.95	0.95	0.70	153.3	115.0	115.0	84.3
BDS491 LED80/827	5520	66	83.63	1.47	1.47	1.10	1.10	0.81	155.3	116.5	116.5	85.4
BDS491 LED90/827	6120	75	81.6	1.67	1.67	1.25	1.25	0.92	159.2	119.4	119.4	87.5
BDS491 LED100/827	6800	85	80	1.89	1.89	1.42	1.42	1.04	162.4	121.8	121.8	89.3
BDS491 LED10/840	710	8.4	84.52	0.19	0.19	0.14	0.14	0.10	153.7	115.3	115.3	84.5
BDS491 LED15/840	1065	12.2	87.29	0.27	0.27	0.20	0.20	0.15	148.8	111.6	111.6	81.8
BDS491 LED20/840	1420	16.6	85.54	0.37	0.37	0.28	0.28	0.20	151.8	113.9	113.9	83.5
BDS491 LED25/840	1775	19.2	92.44	0.43	0.43	0.32	0.32	0.23	140.5	105.4	105.4	77.3
BDS491 LED30/840	2130	23	92.60	0.51	0.51	0.38	0.38	0.28	140.3	105.2	105.2	77.1
BDS491 LED40/840	2840	31	91.61	0.69	0.69	0.52	0.52	0.38	141.8	106.3	106.3	78.0
BDS491 LED50/840	3500	39	89.74	0.87	0.87	0.65	0.65	0.48	144.7	108.6	108.6	79.6
BDS491 LED60/840	4200	43.5	96.55	0.97	0.97	0.73	0.73	0.53	134.5	100.9	100.9	74.0
BDS491 LED70/840	4900	51	96.07	1.13	1.13	0.85	0.85	0.62	135.2	101.4	101.4	74.4
BDS491 LED80/840	5520	59	93.55	1.31	1.31	0.98	0.98	0.72	138.8	104.1	104.1	76.4

BDS491 LED90/840	6210	67	92.68	1.49	1.49	1.12	1.12	0.82	140.1	105.1	105.1	77.1
BDS491 LED100/840	6900	75	92	1.67	1.67	1.25	1.25	0.92	141.2	105.9	105.9	77.7

** 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.*