



# ENVIRONMENTAL PRODUCT DECLARATION

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

**Philips Copenhagen LED gen2 large**

**BDS562/BRS562/BSS562**

Signify N.V.



## GENERAL INFORMATION

### MANUFACTURER

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

### 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: <input checked="" type="checkbox"/> Internal certification <input type="checkbox"/> 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 Copenhagen LED gen2 large & mega
Additional labels	BRS562 LED64/740 II DM31GR CLOLS850 C10K
Product reference	919008635342
Place of production	Denmark
Period for data	2022
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	%

### ENVIRONMENTAL DATA SUMMARY

Declared unit	1 unit of 6000 lumens over 100000 hours
Declared unit mass	8.1 kg
GWP-fossil, A1-A3 (kgCO <sub>2</sub> e)	7.91E+01
GWP-total, A1-A3 (kgCO <sub>2</sub> e)	7.64E+01
Secondary material, inputs (%)	12.8
Secondary material, outputs (%)	28.1
Total energy use, A1-A3 (kWh)	401.0
Total water use, A1-A3 (m <sup>3</sup> e)	9.54E-01

## 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 original Copenhagen luminaire was co-designed with Copenhagen's Office of City Architecture in the 1960s with the aim of enhancing the aesthetic appeal of the city through lighting. This timeless luminaire design comes in two types: Copenhagen City LED Gen2 is for city and residential areas where light comfort is important; Copenhagen LED Gen2 delivers high performance for road lighting applications. The second generation of Copenhagen LED is available in a range of sizes, from mini to mega. This makes it suitable for any type of application while ensuring the dimensions of the luminaire and pole are well balanced, so every installation blends harmoniously into its surroundings. Various suspensions are available, allowing a variety of mounting options to provide maximum freedom during installation. Thanks to the built in Philips LEDGINE-O engine, and the wide range of application-tailored optics, Copenhagen LED luminaires deliver the right amount of light and in the right direction on your street, enabling important energy savings. The luminaire is available with one or two Zhaga-D4i (ZD4i) System Ready (SR) sockets, which makes the luminaire future ready. This means Copenhagen LED Gen2 is ready to pair with advanced control and lighting software applications such as Interact, or sensors such as the Philips Outdoor Sensor Bundle (OSB). And because the top SR socket is integrated into the canopy, it has no impact on the beautiful, clean design

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of the luminaire. Furthermore, every Copenhagen LED Gen2 BPS559, BRS561, BRS562 and BRS563 luminaire is uniquely identifiable, thanks to the Signify Service tag app. By simply scanning a QR code, placed inside the door of the mast or directly on the luminaire, you can instantly access the configuration of the luminaire. This makes maintenance and programming operations faster and easier and enables you to create a digital library of lighting assets and spare parts.

For more information, please visit

<https://www.lighting.philips.com/link/BDS562/fam/aa/en>

### PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	16.59	EU , APAC
Minerals	34.34	EU
Fossil materials	49.07	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	0.515

### FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 Product
Mass per declared unit	8.1 kg
Functional unit	1 unit of 6000 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 declared = MND. 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.

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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)

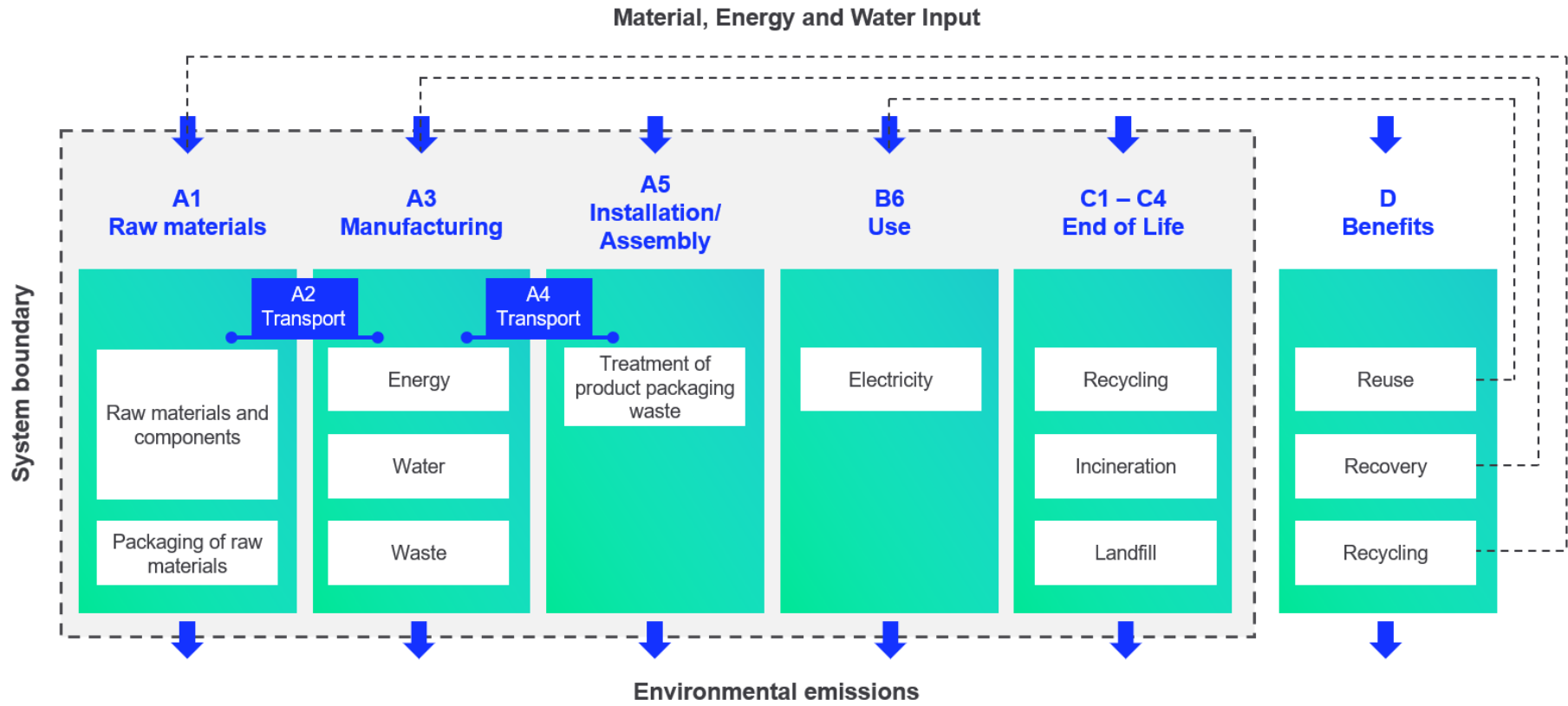
During the use phase, the product consumes electricity from Europe's electricity grid mix (B6). The total power consumption of the reference product is calculated as follows: Wattage x Reference lifetime = kWh consumed throughout the entire use phase B6.

### 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 <sup>1)</sup>	kg CO <sub>2</sub> e	6.18E+01	1.72E+00	1.30E+01	7.64E+01	1.72E+00	1.91E+00	MNR	MNR	MNR	MNR	MNR	1.43E+03	MNR	MNR	1.12E-01	4.40E+00	2.35E+00	-7.28E+00
GWP – fossil	kg CO <sub>2</sub> e	6.26E+01	1.72E+00	1.48E+01	7.91E+01	1.72E+00	4.96E-02	MNR	MNR	MNR	MNR	MNR	1.42E+03	MNR	MNR	1.12E-01	4.40E+00	2.35E+00	-7.26E+00
GWP – biogenic	kg CO <sub>2</sub> e	-9.67E-01	0.00E+00	-1.86E+00	-2.83E+00	6.65E-04	1.86E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	0.00E+00	0.00E+00	-8.02E-03
GWP – LULUC	kg CO <sub>2</sub> e	9.72E-02	6.39E-04	1.27E-02	1.11E-01	6.34E-04	1.71E-05	MNR	MNR	MNR	MNR	MNR	3.33E+00	MNR	MNR	4.13E-05	9.30E-05	8.71E-05	-3.30E-03
Ozone depletion pot.	kg CFC <sub>11</sub> e	6.07E-06	3.95E-07	1.00E-06	7.47E-06	3.95E-07	4.89E-09	MNR	MNR	MNR	MNR	MNR	7.22E-05	MNR	MNR	2.57E-08	1.30E-08	1.46E-08	-2.02E-07
Acidification potential	mol H <sup>+</sup> e	6.24E-01	7.69E-03	2.14E-02	6.53E-01	7.28E-03	3.87E-04	MNR	MNR	MNR	MNR	MNR	8.13E+00	MNR	MNR	4.74E-04	1.31E-03	8.32E-04	-1.74E-01
EP-freshwater <sup>2)</sup>	kg Pe	7.38E-03	1.40E-05	1.44E-04	7.54E-03	1.41E-05	5.14E-07	MNR	MNR	MNR	MNR	MNR	1.51E-01	MNR	MNR	9.16E-07	2.47E-06	4.28E-06	-6.58E-04
EP-marine	kg Ne	7.31E-02	2.26E-03	8.15E-03	8.36E-02	2.16E-03	1.65E-04	MNR	MNR	MNR	MNR	MNR	1.08E+00	MNR	MNR	1.41E-04	5.38E-04	1.19E-03	-1.03E-02
EP-terrestrial	mol Ne	8.31E-01	2.50E-02	7.02E-02	9.26E-01	2.39E-02	1.71E-03	MNR	MNR	MNR	MNR	MNR	1.23E+01	MNR	MNR	1.55E-03	5.60E-03	3.51E-03	-1.33E-01
POCP (“smog”) <sup>3)</sup>	kg NMVOCe	2.58E-01	7.91E-03	2.22E-02	2.89E-01	7.63E-03	4.27E-04	MNR	MNR	MNR	MNR	MNR	3.36E+00	MNR	MNR	4.97E-04	1.39E-03	1.06E-03	-3.91E-02
ADP-minerals & metals <sup>4)</sup>	kg Sbe	1.08E-02	4.01E-06	5.87E-05	1.09E-02	4.03E-06	1.60E-07	MNR	MNR	MNR	MNR	MNR	1.33E-02	MNR	MNR	2.62E-07	2.77E-06	3.38E-07	-3.36E-03
ADP-fossil resources	MJ	8.68E+02	2.58E+01	2.53E+02	1.15E+03	2.58E+01	3.84E-01	MNR	MNR	MNR	MNR	MNR	3.03E+04	MNR	MNR	1.68E+00	1.23E+00	1.21E+00	-7.12E+01
Water use <sup>5)</sup>	m <sup>3</sup> e depr.	3.62E+01	1.15E-01	2.34E+00	3.86E+01	1.15E-01	8.97E-02	MNR	MNR	MNR	MNR	MNR	8.27E+02	MNR	MNR	7.52E-03	1.79E-01	1.15E-01	-1.15E+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 PO<sub>4</sub>e; 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	3.88E-06	1.97E-07	2.85E-07	4.36E-06	1.98E-07	3.59E-09	MNR	MNR	MNR	MNR	MNR	2.67E-05	MNR	MNR	1.29E-08	9.05E-09	8.98E-09	-7.12E-07
Ionizing radiation <sup>6)</sup>	kBq U235e	5.82E+00	1.23E-01	1.67E-01	6.11E+00	1.23E-01	1.38E-03	MNR	MNR	MNR	MNR	MNR	8.20E+02	MNR	MNR	8.00E-03	5.23E-03	5.34E-03	-4.20E-01



Ecotoxicity (freshwater)	CTUe	4.38E+03	2.31E+01	1.55E+02	4.56E+03	2.32E+01	2.56E+00	MNR	MNR	MNR	MNR	MNR	2.06E+04	MNR	MNR	1.51E+00	1.06E+01	4.17E+01	-9.32E+02
Human toxicity, cancer	CTUh	1.58E-07	5.74E-10	7.05E-09	1.66E-07	5.70E-10	1.22E-10	MNR	MNR	MNR	MNR	MNR	6.75E-07	MNR	MNR	3.71E-11	4.29E-10	1.57E-09	-2.15E-08
Human tox. non-cancer	CTUh	4.94E-06	2.29E-08	7.78E-08	5.04E-06	2.30E-08	5.06E-09	MNR	MNR	MNR	MNR	MNR	2.22E-05	MNR	MNR	1.50E-09	1.65E-08	9.95E-08	-2.13E-06
SQP <sup>7)</sup>	-	4.33E+02	2.95E+01	8.80E+01	5.50E+02	2.97E+01	2.13E-01	MNR	MNR	MNR	MNR	MNR	5.47E+03	MNR	MNR	1.94E+00	9.34E-01	1.77E+00	-5.97E+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 <sup>8)</sup>	MJ	1.07E+02	2.90E-01	2.98E+02	4.05E+02	2.91E-01	1.24E-02	MNR	MNR	MNR	MNR	MNR	6.16E+03	MNR	MNR	1.89E-02	8.23E-02	3.72E-02	-5.95E+00
Renew. PER as material	MJ	8.99E+00	0.00E+00	1.64E+01	2.54E+01	0.00E+00	-1.64E+01	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	1.16E+02	2.90E-01	3.14E+02	4.30E+02	2.91E-01	-1.64E+01	MNR	MNR	MNR	MNR	MNR	6.16E+03	MNR	MNR	1.89E-02	8.23E-02	3.72E-02	-5.95E+00
Non-re. PER as energy	MJ	7.61E+02	2.58E+01	2.50E+02	1.04E+03	2.58E+01	3.84E-01	MNR	MNR	MNR	MNR	MNR	3.02E+04	MNR	MNR	1.68E+00	1.23E+00	1.21E+00	-7.12E+01
Non-re. PER as material	MJ	1.04E+02	0.00E+00	1.62E-01	1.05E+02	0.00E+00	-1.62E-01	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	-4.88E+01	-4.88E+01	0.00E+00
Total use of non-re. PER	MJ	8.66E+02	2.58E+01	2.51E+02	1.14E+03	2.58E+01	2.22E-01	MNR	MNR	MNR	MNR	MNR	3.02E+04	MNR	MNR	1.68E+00	-4.75E+01	-4.76E+01	-7.12E+01
Secondary materials	kg	1.04E+00	7.19E-03	1.26E+00	2.30E+00	7.17E-03	4.54E-04	MNR	MNR	MNR	MNR	MNR	3.12E+00	MNR	MNR	4.66E-04	1.03E-03	1.49E-03	2.90E-01
Renew. secondary fuels	MJ	6.74E-02	7.19E-05	8.34E-02	1.51E-01	7.23E-05	7.24E-06	MNR	MNR	MNR	MNR	MNR	2.53E-02	MNR	MNR	4.71E-06	4.14E-05	2.58E-05	-1.83E-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 <sup>3</sup>	8.95E-01	3.33E-03	5.53E-02	9.54E-01	3.34E-03	1.49E-03	MNR	MNR	MNR	MNR	MNR	2.61E+01	MNR	MNR	2.18E-04	6.67E-03	3.74E-03	-5.78E-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
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Hazardous waste	kg	9.60E+00	3.42E-02	4.10E-01	1.00E+01	3.42E-02	4.22E-03	MNR	MNR	MNR	MNR	MNR	1.09E+02	MNR	MNR	2.23E-03	2.71E-03	5.75E-02	-1.13E+00
Non-hazardous waste	kg	1.81E+02	5.60E-01	3.93E+00	1.86E+02	5.62E-01	1.18E+00	MNR	MNR	MNR	MNR	MNR	6.88E+03	MNR	MNR	3.66E-02	2.09E+00	3.71E+00	-5.43E+01
Radioactive waste	kg	2.17E-03	1.73E-04	1.12E-04	2.46E-03	1.73E-04	6.77E-07	MNR	MNR	MNR	MNR	MNR	2.20E-01	MNR	MNR	1.12E-05	1.81E-06	0.00E+00	-1.59E-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	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	2.28E+00	0.00E+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	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	1.37E+00	1.37E+00	0.00E+00	0.00E+00	MNR	MNR	MNR	MNR	MNR	0.00E+00	MNR	MNR	0.00E+00	4.03E+01	0.00E+00	0.00E+00	0.00E+00

**ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930**

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO <sub>2</sub> e	6.12E+01	1.70E+00	1.48E+01	7.77E+01	1.70E+00	4.74E-02	MNR	MNR	MNR	MNR	MNR	1.41E+03	MNR	MNR	1.11E-01	4.39E+00	2.66E+00	-7.11E+00
Ozone depletion Pot.	kg CFC <sub>11</sub> e	6.47E-06	3.13E-07	8.69E-07	7.65E-06	3.13E-07	4.26E-09	MNR	MNR	MNR	MNR	MNR	6.26E-05	MNR	MNR	2.04E-08	1.14E-08	1.21E-08	-1.69E-07
Acidification	kg SO <sub>2</sub> e	5.32E-01	5.99E-03	1.61E-02	5.54E-01	5.65E-03	2.82E-04	MNR	MNR	MNR	MNR	MNR	6.89E+00	MNR	MNR	3.68E-04	9.61E-04	6.13E-04	-1.53E-01
Eutrophication	kg PO <sub>4</sub> <sup>3</sup> e	1.98E-01	1.32E-03	8.47E-03	2.08E-01	1.29E-03	2.11E-04	MNR	MNR	MNR	MNR	MNR	5.30E+00	MNR	MNR	8.38E-05	5.98E-04	8.09E-03	-3.27E-02



POCP ("smog")	kg C <sub>2</sub> H <sub>4</sub> e	2.75E-02	2.29E-04	1.45E-03	2.92E-02	2.21E-04	8.72E-06	MNR	MNR	MNR	MNR	MNR	2.82E-01	MNR	MNR	1.44E-05	2.49E-05	1.11E-04	-6.36E-03
ADP-elements	kg Sbe	1.07E-02	3.89E-06	5.70E-05	1.08E-02	3.90E-06	1.26E-07	MNR	MNR	MNR	MNR	MNR	1.33E-02	MNR	MNR	2.54E-07	2.68E-06	2.89E-07	-3.36E-03
ADP-fossil	MJ	8.67E+02	2.58E+01	2.53E+02	1.15E+03	2.58E+01	3.84E-01	MNR	MNR	MNR	MNR	MNR	3.02E+04	MNR	MNR	1.68E+00	1.23E+00	1.21E+00	-7.12E+01

## APPENDIX (PEP ECOPASSPORT ALIGNED)

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

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

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

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

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

$$TSF = PSF * CSF$$

**Table A1: Light management function (PEP EcoPassport aligned)**

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

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

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

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

Configuration	Flux [lm]	Power [W]	Efficacy [lm/W]	PSF	Total Scaling Factor (TSF)				Scaled Impacts (GWP100 B6 - kg CO2eq.)			
					NC	DD	PS	DD+PS	NC	DD	PS	DD+PS
BRS562,BDS562,BSS562 LED46-4S/740	3404.0	27.0	126.1	0.72	0.72	0.54	0.54	0.396	4435.2	3326.4	3326.4	2439.4
BRS562,BDS562,BSS562 LED48-4S/740	3552.0	28.5	124.6	0.76	0.76	0.57	0.57	0.418	4681.6	3511.2	3511.2	2574.9
BRS562,BDS562,BSS562 LED56-4S/740	4088.0	33.0	123.9	0.88	0.88	0.66	0.66	0.484	5420.8	4065.6	4065.6	2981.4
BRS562,BDS562,BSS562 LED58-4S/740	4234.0	34.0	124.5	0.907	0.907	0.68	0.68	0.499	5587.1	4188.8	4188.8	3073.8
BRS562,BDS562,BSS562 LED64-4S/740	4672.0	37.5	124.6	1.0	1.0	0.75	0.75	0.55	6160.0	4620.0	4620.0	3388.0
BRS562,BDS562,BSS562 LED70-4S/740	5110.0	41.0	124.6	1.093	1.093	0.82	0.82	0.601	6732.9	5051.2	5051.2	3702.2
BRS562,BDS562,BSS562 LED75-4S/740	5548.0	44.0	126.1	1.173	1.173	0.88	0.88	0.645	7225.7	5420.8	5420.8	3973.2
BRS562,BDS562,BSS562 LED80-4S/740	5840.0	47.0	124.3	1.253	1.253	0.94	0.94	0.689	7718.5	5790.4	5790.4	4244.2
BRS562,BDS562,BSS562 LED88-4S/740	6336.0	52.0	121.8	1.387	1.387	1.04	1.04	0.763	8543.9	6406.4	6406.4	4700.1
BRS562,BDS562,BSS562 LED93-4S/740	6862.0	53.0	129.5	1.413	1.413	1.06	1.06	0.777	8704.1	6529.6	6529.6	4786.3
BRS562,BDS562,BSS562 LED96-4S/740	7008.0	55.0	127.4	1.467	1.467	1.1	1.1	0.807	9036.7	6776.0	6776.0	4971.1
BRS562,BDS562,BSS562 LED100-4S/740	7300.0	57.0	128.1	1.52	1.52	1.14	1.14	0.836	9363.2	7022.4	7022.4	5149.8



BRS562,BDS562,BSS562 LED104-4S/740	7665.0	60.0	127.8	1.6	1.6	1.2	1.2	0.88	9856.0	7392.0	7392.0	5420.8
BRS562,BDS562,BSS562 LED110-4S/740	7920.0	63.0	125.7	1.68	1.68	1.26	1.26	0.924	10348.8	7761.6	7761.6	5691.8
BRS562,BDS562,BSS562 LED116-4S/740	8280.0	67.0	123.6	1.787	1.787	1.34	1.34	0.983	11007.9	8254.4	8254.4	6055.3
BRS562,BDS562,BSS562 LED120-4S/740	8640.0	69.0	125.2	1.84	1.84	1.38	1.38	1.012	11334.4	8500.8	8500.8	6233.9
BRS562,BDS562,BSS562 LED125-4S/740	9000.0	72.0	125.0	1.92	1.92	1.44	1.44	1.056	11827.2	8870.4	8870.4	6505.0
BRS562,BDS562,BSS562 LED130-4S/740	9360.0	76.0	123.2	2.027	2.027	1.52	1.52	1.115	12486.3	9363.2	9363.2	6868.4
BRS562,BDS562,BSS562 LED135-4S/740	9720.0	76.0	127.9	2.027	2.027	1.52	1.52	1.115	12486.3	9363.2	9363.2	6868.4
BRS562,BDS562,BSS562 LED140-4S/740	10080.0	79.0	127.6	2.107	2.107	1.58	1.58	1.159	12979.1	9732.8	9732.8	7139.4
BRS562,BDS562,BSS562 LED145-4S/740	10440.0	82.0	127.3	2.187	2.187	1.64	1.64	1.203	13471.9	10102.4	10102.4	7410.5
BRS562,BDS562,BSS562 LED150-4S/740	10650.0	85.0	125.3	2.267	2.267	1.7	1.7	1.247	13964.7	10472.0	10472.0	7681.5
BRS562,BDS562,BSS562 LED160-4S/740	11360.0	91.0	124.8	2.427	2.427	1.82	1.82	1.335	14950.3	11211.2	11211.2	8223.6
BRS562,BDS562, BSS562 LED170-4S/740	12070.0	97.0	124.4	2.587	2.587	1.94	1.94	1.423	15935.9	11950.4	11950.4	8765.7
BRS562,BDS562, BSS562 LED180-4S/740	12780.0	104.0	122.9	2.773	2.773	2.08	2.08	1.525	17081.7	12812.8	12812.8	9394.0
BRS562,BDS562, BSS562 LED190-4S/740	13490.0	110.0	122.6	2.933	2.933	2.2	2.2	1.613	18067.3	13552.0	13552.0	9936.1
BRS562,BDS562, BSS562 LED200-4S/740	14200.0	116.0	122.4	3.093	3.093	2.32	2.32	1.701	19052.9	14291.2	14291.2	10478.2
BRS562,BDS562, BSS562 LED46-4S/730	3404.0	28.5	119.4	0.76	0.76	0.57	0.57	0.418	4681.6	3511.2	3511.2	2574.9
BRS562,BDS562, BSS562 LED48-4S/730	3552.0	30.0	118.4	0.8	0.8	0.6	0.6	0.44	4928.0	3696.0	3696.0	2710.4
BRS562,BDS562, BSS562 LED56-4S/730	4088.0	35.0	116.8	0.933	0.933	0.7	0.7	0.513	5747.3	4312.0	4312.0	3160.1
BRS562,BDS562, BSS562 LED58-4S/730	4234.0	36.0	117.6	0.96	0.96	0.72	0.72	0.528	5913.6	4435.2	4435.2	3252.5
BRS562,BDS562, BSS562 LED64-4S/730	4672.0	40.0	116.8	1.067	1.067	0.8	0.8	0.587	6572.7	4928.0	4928.0	3615.9
BRS562,BDS562, BSS562 LED70-4S/730	5110.0	43.5	117.5	1.16	1.16	0.87	0.87	0.638	7145.6	5359.2	5359.2	3930.1
BRS562,BDS562, BSS562 LED75-4S/730	5548.0	46.5	119.3	1.24	1.24	0.93	0.93	0.682	7638.4	5728.8	5728.8	4201.1
BRS562,BDS562, BSS562 LED80-4S/730	5840.0	50.0	116.8	1.333	1.333	1.0	1.0	0.733	8211.3	6160.0	6160.0	4515.3
BRS562,BDS562, BSS562 LED88-4S/730	6336.0	55.0	115.2	1.467	1.467	1.1	1.1	0.807	9036.7	6776.0	6776.0	4971.1



BRS562,BDS562, BSS562 LED93-4S/730	6862.0	57.0	120.4	1.52	1.52	1.14	1.14	0.836	9363.2	7022.4	7022.4	5149.8
BRS562,BDS562, BSS562 LED96-4S/730	7008.0	58.0	120.8	1.547	1.547	1.16	1.16	0.851	9529.5	7145.6	7145.6	5242.2
BRS562,BDS562, BSS562 LED100-4S/730	7200.0	61.0	118.0	1.627	1.627	1.22	1.22	0.895	10022.3	7515.2	7515.2	5513.2
BRS562,BDS562, BSS562 LED104-4S/730	7560.0	63.0	120.0	1.68	1.68	1.26	1.26	0.924	10348.8	7761.6	7761.6	5691.8
BRS562,BDS562, BSS562 LED110-4S/730	7920.0	67.0	118.2	1.787	1.787	1.34	1.34	0.983	11007.9	8254.4	8254.4	6055.3
BRS562,BDS562, BSS562 LED116-4S/730	8280.0	71.0	116.6	1.893	1.893	1.42	1.42	1.041	11660.9	8747.2	8747.2	6412.6
BRS562,BDS562, BSS562 LED120-4S/730	8640.0	74.0	116.8	1.973	1.973	1.48	1.48	1.085	12153.7	9116.8	9116.8	6683.6
BRS562,BDS562, BSS562 LED125-4S/730	9000.0	77.0	116.9	2.053	2.053	1.54	1.54	1.129	12646.5	9486.4	9486.4	6954.6
BRS562,BDS562, BSS562 LED130-4S/730	9230.0	80.0	115.4	2.133	2.133	1.6	1.6	1.173	13139.3	9856.0	9856.0	7225.7
BRS562,BDS562, BSS562 LED135-4S/730	9720.0	81.0	120.0	2.16	2.16	1.62	1.62	1.188	13305.6	9979.2	9979.2	7318.1
BRS562,BDS562, BSS562 LED140-4S/730	10080.0	84.0	120.0	2.24	2.24	1.68	1.68	1.232	13798.4	10348.8	10348.8	7589.1
BRS562,BDS562, BSS562 LED145-4S/730	10295.0	87.0	118.3	2.32	2.32	1.74	1.74	1.276	14291.2	10718.4	10718.4	7860.2
BRS562,BDS562, BSS562 LED150-4S/730	10650.0	91.0	117.0	2.427	2.427	1.82	1.82	1.335	14950.3	11211.2	11211.2	8223.6
BRS562,BDS562, BSS562 LED160-4S/730	11360.0	97.0	117.1	2.587	2.587	1.94	1.94	1.423	15935.9	11950.4	11950.4	8765.7
BRS562,BDS562,BSS562 LED170-4S/730	12070.0	104.0	116.1	2.773	2.773	2.08	2.08	1.525	17081.7	12812.8	12812.8	9394.0
BRS562,BDS562,BSS562 LED180-4S/730	12780.0	110.0	116.2	2.933	2.933	2.2	2.2	1.613	18067.3	13552.0	13552.0	9936.1
BRS562,BDS562, BSS562 LED190-4S/730	13300.0	116.0	114.7	3.093	3.093	2.32	2.32	1.701	19052.9	14291.2	14291.2	10478.2
BRS562,BDS562, BSS562 LED200-4S/730	14000.0	124.0	112.9	3.307	3.307	2.48	2.48	1.819	20371.1	15276.8	15276.8	11205.0
BRS562,BDS562, BSS562 LED40-4S/727	2920.0	28.0	104.3	0.747	0.747	0.56	0.56	0.411	4601.5	3449.6	3449.6	2531.8
BRS562,BDS562, BSS562 LED46-4S/727	3358.0	32.0	104.9	0.853	0.853	0.64	0.64	0.469	5254.5	3942.4	3942.4	2889.0
BRS562,BDS562, BSS562 LED48-4S/727	3504.0	33.0	106.2	0.88	0.88	0.66	0.66	0.484	5420.8	4065.6	4065.6	2981.4
BRS562,BDS562, BSS562 LED56-4S/727	4088.0	38.5	106.2	1.027	1.027	0.77	0.77	0.565	6326.3	4743.2	4743.2	3480.4
BRS562,BDS562, BSS562 LED58-4S/727	4234.0	40.0	105.8	1.067	1.067	0.8	0.8	0.587	6572.7	4928.0	4928.0	3615.9
BRS562,BDS562, BSS562 LED64-4S/727	4608.0	44.0	104.7	1.173	1.173	0.88	0.88	0.645	7225.7	5420.8	5420.8	3973.2



BRS562,BDS562, BSS562 LED70-4S/727	5040.0	48.5	103.9	1.293	1.293	0.97	0.97	0.711	7964.9	5975.2	5975.2	4379.8
BRS562,BDS562, BSS562 LED75-4S/727	5472.0	52.0	105.2	1.387	1.387	1.04	1.04	0.763	8543.9	6406.4	6406.4	4700.1
BRS562,BDS562, BSS562 LED80-4S/727	5760.0	56.0	102.9	1.493	1.493	1.12	1.12	0.821	9196.9	6899.2	6899.2	5057.4
BRS562,BDS562, BSS562 LED88-4S/727	6248.0	62.0	100.8	1.653	1.653	1.24	1.24	0.909	10182.5	7638.4	7638.4	5599.4
BRS562,BDS562, BSS562 LED93-4S/727	6768.0	63.0	107.4	1.68	1.68	1.26	1.26	0.924	10348.8	7761.6	7761.6	5691.8
BRS562,BDS562, BSS562 LED96-4S/727	6912.0	65.0	106.3	1.733	1.733	1.3	1.3	0.953	10675.3	8008.0	8008.0	5870.5
BRS562,BDS562, BSS562 LED100-4S/727	7100.0	68.0	104.4	1.813	1.813	1.36	1.36	0.997	11168.1	8377.6	8377.6	6141.5
BRS562,BDS562, BSS562 LED104-4S/727	7455.0	71.0	105.0	1.893	1.893	1.42	1.42	1.041	11660.9	8747.2	8747.2	6412.6
BRS562,BDS562, BSS562 LED110-4S/727	7810.0	75.0	104.1	2.0	2.0	1.5	1.5	1.1	12320.0	9240.0	9240.0	6776.0
BRS562,BDS562, BSS562 LED116-4S/727	8165.0	80.0	102.1	2.133	2.133	1.6	1.6	1.173	13139.3	9856.0	9856.0	7225.7
BRS562,BDS562, BSS562 LED120-4S/727	8520.0	83.0	102.7	2.213	2.213	1.66	1.66	1.217	13632.1	10225.6	10225.6	7496.7
BRS562,BDS562, BSS562 LED125-4S/727	8875.0	86.0	103.2	2.293	2.293	1.72	1.72	1.261	14124.9	10595.2	10595.2	7767.8
BRS562,BDS562, BSS562 LED130-4S/727	9230.0	90.0	102.6	2.4	2.4	1.8	1.8	1.32	14784.0	11088.0	11088.0	8131.2
BRS562,BDS562, BSS562 LED135-4S/727	9585.0	91.0	105.3	2.427	2.427	1.82	1.82	1.335	14950.3	11211.2	11211.2	8223.6
BRS562,BDS562, BSS562 LED140-4S/727	9940.0	94.0	105.7	2.507	2.507	1.88	1.88	1.379	15443.1	11580.8	11580.8	8494.6
BRS562,BDS562, BSS562 LED145-4S/727	10295.0	98.0	105.1	2.613	2.613	1.96	1.96	1.437	16096.1	12073.6	12073.6	8851.9
BRS562,BDS562, BSS562 LED150-4S/727	10650.0	102.0	104.4	2.72	2.72	2.04	2.04	1.496	16755.2	12566.4	12566.4	9215.4
BRS562,BDS562, BSS562 LED160-4S/727	11200.0	108.0	103.7	2.88	2.88	2.16	2.16	1.584	17740.8	13305.6	13305.6	9757.4
BRS562,BDS562, BSS562 LED170-4S/727	11730.0	116.0	101.1	3.093	3.093	2.32	2.32	1.701	19052.9	14291.2	14291.2	10478.2
BRS562,BDS562, BSS562 LED180-4S/727	12420.0	124.0	100.2	3.307	3.307	2.48	2.48	1.819	20371.1	15276.8	15276.8	11205.0
BRS562,BDS562, BSS562 LED40-4S/722	2920.0	32.5	89.8	0.867	0.867	0.65	0.65	0.477	5340.7	4004.0	4004.0	2938.3
BRS562,BDS562, BSS562 LED46-4S/722	3358.0	37.0	90.8	0.987	0.987	0.74	0.74	0.543	6079.9	4558.4	4558.4	3344.9
BRS562,BDS562, BSS562 LED48-4S/722	3504.0	38.5	91.0	1.027	1.027	0.77	0.77	0.565	6326.3	4743.2	4743.2	3480.4
BRS562,BDS562, BSS562 LED56-4S/722	4088.0	45.0	90.8	1.2	1.2	0.9	0.9	0.66	7392.0	5544.0	5544.0	4065.6



BRS562,BDS562, BSS562 LED58-4S/722	4234.0	46.5	91.1	1.24	1.24	0.93	0.93	0.682	7638.4	5728.8	5728.8	4201.1
BRS562,BDS562, BSS562 LED64-4S/722	4608.0	52.0	88.6	1.387	1.387	1.04	1.04	0.763	8543.9	6406.4	6406.4	4700.1
BRS562,BDS562, BSS562 LED70-4S/722	5040.0	57.0	88.4	1.52	1.52	1.14	1.14	0.836	9363.2	7022.4	7022.4	5149.8
BRS562,BDS562, BSS562 LED75-4S/722	5548.0	59.0	94.0	1.573	1.573	1.18	1.18	0.865	9689.7	7268.8	7268.8	5328.4
BRS562,BDS562, BSS562 LED80-4S/722	5760.0	63.0	91.4	1.68	1.68	1.26	1.26	0.924	10348.8	7761.6	7761.6	5691.8
BRS562,BDS562, BSS562 LED88-4S/722	6336.0	70.0	90.5	1.867	1.867	1.4	1.4	1.027	11500.7	8624.0	8624.0	6326.3
BRS562,BDS562 BSS562 LED93-4S/722	6768.0	74.0	91.5	1.973	1.973	1.48	1.48	1.085	12153.7	9116.8	9116.8	6683.6
BRS562,BDS562, BSS562 LED96-4S/722	6912.0	76.0	90.9	2.027	2.027	1.52	1.52	1.115	12486.3	9363.2	9363.2	6868.4
BRS562,BDS562, BSS562 LED100-4S/722	7200.0	78.0	92.3	2.08	2.08	1.56	1.56	1.144	12812.8	9609.6	9609.6	7047.0
BRS562,BDS562, BSS562 LED104-4S/722	7560.0	81.0	93.3	2.16	2.16	1.62	1.62	1.188	13305.6	9979.2	9979.2	7318.1
BRS562,BDS562,BSS562 LED110-4S/722	7810.0	86.0	90.8	2.293	2.293	1.72	1.72	1.261	14124.9	10595.2	10595.2	7767.8
BRS562,BDS562, BSS562 LED116-4S/722	8165.0	91.0	89.7	2.427	2.427	1.82	1.82	1.335	14950.3	11211.2	11211.2	8223.6
BRS562,BDS562, BSS562 LED120-4S/722	8520.0	94.0	90.6	2.507	2.507	1.88	1.88	1.379	15443.1	11580.8	11580.8	8494.6
BRS562,BDS562, BSS562 LED125-4S/722	8875.0	98.0	90.6	2.613	2.613	1.96	1.96	1.437	16096.1	12073.6	12073.6	8851.9
BRS562,BDS562, BSS562 LED130-4S/722	9230.0	102.0	90.5	2.72	2.72	2.04	2.04	1.496	16755.2	12566.4	12566.4	9215.4
BRS562,BDS562, BSS562 LED135-4S/722	9585.0	106.0	90.4	2.827	2.827	2.12	2.12	1.555	17414.3	13059.2	13059.2	9578.8
BRS562,BDS562, BSS562 LED140-4S/722	9940.0	110.0	90.4	2.933	2.933	2.2	2.2	1.613	18067.3	13552.0	13552.0	9936.1
BRS562,BDS562, BSS562 LED145-4S/722	10295.0	114.0	90.3	3.04	3.04	2.28	2.28	1.672	18726.4	14044.8	14044.8	10299.5
BRS562,BDS562, BSS562 LED150-4S/722	10500.0	120.0	87.5	3.2	3.2	2.4	2.4	1.76	19712.0	14784.0	14784.0	10841.6
BRS562,BDS562, BSS562 LED40-4S/840	2960.0	29.0	102.1	0.773	0.773	0.58	0.58	0.425	4761.7	3572.8	3572.8	2618.0
BRS562,BDS562, BSS562 LED46-4S/840	3358.0	33.5	100.2	0.893	0.893	0.67	0.67	0.491	5500.9	4127.2	4127.2	3024.6
BRS562,BDS562, BSS562 LED48-4S/840	3504.0	35.0	100.1	0.933	0.933	0.7	0.7	0.513	5747.3	4312.0	4312.0	3160.1
BRS562,BDS562, BSS562 LED56-4S/840	4088.0	40.5	100.9	1.08	1.08	0.81	0.81	0.594	6652.8	4989.6	4989.6	3659.0
BRS562,BDS562, BSS562 LED58-4S/840	4234.0	42.0	100.8	1.12	1.12	0.84	0.84	0.616	6899.2	5174.4	5174.4	3794.6



BRS562,BDS562, BSS562 LED64-4S/840	4672.0	46.5	100.5	1.24	1.24	0.93	0.93	0.682	7638.4	5728.8	5728.8	4201.1
BRS562,BDS562, BSS562 LED70-4S/840	5110.0	51.0	100.2	1.36	1.36	1.02	1.02	0.748	8377.6	6283.2	6283.2	4607.7
BRS562,BDS562, BSS562 LED75-4S/840	5548.0	53.0	104.7	1.413	1.413	1.06	1.06	0.777	8704.1	6529.6	6529.6	4786.3
BRS562,BDS562, BSS562 LED80-4S/840	5840.0	57.0	102.5	1.52	1.52	1.14	1.14	0.836	9363.2	7022.4	7022.4	5149.8
BRS562,BDS562, BSS562 LED88-4S/840	6336.0	62.0	102.2	1.653	1.653	1.24	1.24	0.909	10182.5	7638.4	7638.4	5599.4
BRS562,BDS562, BSS562 LED93-4S/840	6768.0	66.0	102.5	1.76	1.76	1.32	1.32	0.968	10841.6	8131.2	8131.2	5962.9
BRS562,BDS562, BSS562 LED96-4S/840	6912.0	68.0	101.6	1.813	1.813	1.36	1.36	0.997	11168.1	8377.6	8377.6	6141.5
BRS562,BDS562, BSS562 LED100-4S/840	7200.0	70.0	102.9	1.867	1.867	1.4	1.4	1.027	11500.7	8624.0	8624.0	6326.3
BRS562,BDS562, BSS562 LED104-4S/840	7560.0	73.0	103.6	1.947	1.947	1.46	1.46	1.071	11993.5	8993.6	8993.6	6597.4
BRS562,BDS562, BSS562 LED110-4S/840	7920.0	77.0	102.9	2.053	2.053	1.54	1.54	1.129	12646.5	9486.4	9486.4	6954.6
BRS562,BDS562, BSS562 LED116-4S/840	8280.0	81.0	102.2	2.16	2.16	1.62	1.62	1.188	13305.6	9979.2	9979.2	7318.1
BRS562,BDS562, BSS562 LED120-4S/840	8520.0	84.0	101.4	2.24	2.24	1.68	1.68	1.232	13798.4	10348.8	10348.8	7589.1
BRS562,BDS562, BSS562 LED125-4S/840	8875.0	88.0	100.9	2.347	2.347	1.76	1.76	1.291	14457.5	10841.6	10841.6	7952.6
BRS562,BDS562, BSS562 LED130-4S/840	9230.0	92.0	100.3	2.453	2.453	1.84	1.84	1.349	15110.5	11334.4	11334.4	8309.8
BRS562,BDS562, BSS562 LED135-4S/840	9585.0	95.0	100.9	2.533	2.533	1.9	1.9	1.393	15603.3	11704.0	11704.0	8580.9
BRS562,BDS562, BSS562 LED140-4S/840	9940.0	99.0	100.4	2.64	2.64	1.98	1.98	1.452	16262.4	12196.8	12196.8	8944.3
BRS562,BDS562, BSS562 LED145-4S/840	10295.0	102.0	100.9	2.72	2.72	2.04	2.04	1.496	16755.2	12566.4	12566.4	9215.4
BRS562,BDS562, BSS562 LED150-4S/840	10650.0	106.0	100.5	2.827	2.827	2.12	2.12	1.555	17414.3	13059.2	13059.2	9578.8
BRS562,BDS562, BSS562 LED160-4S/840	11360.0	114.0	99.6	3.04	3.04	2.28	2.28	1.672	18726.4	14044.8	14044.8	10299.5
BRS562,BDS562, BSS562 LED170-4S/840	11900.0	122.0	97.5	3.253	3.253	2.44	2.44	1.789	20038.5	15030.4	15030.4	11020.2
BRS562,BDS562, BSS562 LED40-4S/830	2960.0	30.0	98.7	0.8	0.8	0.6	0.6	0.44	4928.0	3696.0	3696.0	2710.4
BRS562,BDS562, BSS562 LED46-4S/830	3358.0	34.5	97.3	0.92	0.92	0.69	0.69	0.506	5667.2	4250.4	4250.4	3117.0
BRS562,BDS562, BSS562 LED48-4S/830	3504.0	36.0	97.3	0.96	0.96	0.72	0.72	0.528	5913.6	4435.2	4435.2	3252.5
BRS562,BDS562, BSS562 LED56-4S/830	4088.0	42.0	97.3	1.12	1.12	0.84	0.84	0.616	6899.2	5174.4	5174.4	3794.6



BRS562,BDS562,BSS562 LED58-4S/830	4234.0	43.5	97.3	1.16	1.16	0.87	0.87	0.638	7145.6	5359.2	5359.2	3930.1
BRS562,BDS562,BSS562 LED64-4S/830	4672.0	48.0	97.3	1.28	1.28	0.96	0.96	0.704	7884.8	5913.6	5913.6	4336.6
BRS562,BDS562,BSS562 LED70-4S/830	5040.0	53.0	95.1	1.413	1.413	1.06	1.06	0.777	8704.1	6529.6	6529.6	4786.3
BRS562,BDS562,BSS562 LED75-4S/830	5548.0	55.0	100.9	1.467	1.467	1.1	1.1	0.807	9036.7	6776.0	6776.0	4971.1
BRS562,BDS562,BSS562 LED80-4S/830	5840.0	59.0	99.0	1.573	1.573	1.18	1.18	0.865	9689.7	7268.8	7268.8	5328.4
BRS562,BDS562,BSS562 LED88-4S/830	6336.0	64.0	99.0	1.707	1.707	1.28	1.28	0.939	10515.1	7884.8	7884.8	5784.2
BRS562,BDS562,BSS562 LED93-4S/830	6768.0	68.0	99.5	1.813	1.813	1.36	1.36	0.997	11168.1	8377.6	8377.6	6141.5
BRS562,BDS562,BSS562 LED96-4S/830	6912.0	71.0	97.4	1.893	1.893	1.42	1.42	1.041	11660.9	8747.2	8747.2	6412.6
BRS562,BDS562,BSS562 LED100-4S/830	7200.0	72.0	100.0	1.92	1.92	1.44	1.44	1.056	11827.2	8870.4	8870.4	6505.0
BRS562,BDS562,BSS562 LED104-4S/830	7560.0	75.0	100.8	2.0	2.0	1.5	1.5	1.1	12320.0	9240.0	9240.0	6776.0
BRS562,BDS562,BSS562 LED110-4S/830	7920.0	80.0	99.0	2.133	2.133	1.6	1.6	1.173	13139.3	9856.0	9856.0	7225.7
BRS562,BDS562,BSS562 LED116-4S/830	8280.0	84.0	98.6	2.24	2.24	1.68	1.68	1.232	13798.4	10348.8	10348.8	7589.1
BRS562,BDS562,BSS562 LED120-4S/830	8520.0	87.0	97.9	2.32	2.32	1.74	1.74	1.276	14291.2	10718.4	10718.4	7860.2
BRS562,BDS562,BSS562 LED125-4S/830	8875.0	91.0	97.5	2.427	2.427	1.82	1.82	1.335	14950.3	11211.2	11211.2	8223.6
BRS562,BDS562,BSS562 LED130-4S/830	9230.0	95.0	97.2	2.533	2.533	1.9	1.9	1.393	15603.3	11704.0	11704.0	8580.9
BRS562,BDS562,BSS562 LED135-4S/830	9585.0	99.0	96.8	2.64	2.64	1.98	1.98	1.452	16262.4	12196.8	12196.8	8944.3
BRS562,BDS562,BSS562 LED140-4S/830	9940.0	102.0	97.5	2.72	2.72	2.04	2.04	1.496	16755.2	12566.4	12566.4	9215.4
BRS562,BDS562,BSS562 LED145-4S/830	10295.0	106.0	97.1	2.827	2.827	2.12	2.12	1.555	17414.3	13059.2	13059.2	9578.8
BRS562,BDS562,BSS562 LED150-4S/830	10650.0	110.0	96.8	2.933	2.933	2.2	2.2	1.613	18067.3	13552.0	13552.0	9936.1
BRS562,BDS562,BSS562 LED160-4S/830	11200.0	118.0	94.9	3.147	3.147	2.36	2.36	1.731	19385.5	14537.6	14537.6	10663.0
BRS562,BDS562,BSS562 LED170-4S/830	11900.0	126.0	94.4	3.36	3.36	2.52	2.52	1.848	20697.6	15523.2	15523.2	11383.7
BRS562,BDS562,BSS562 LED40-4S/827	2920.0	32.5	89.8	0.867	0.867	0.65	0.65	0.477	5340.7	4004.0	4004.0	2938.3
BRS562,BDS562,BSS562 LED46-4S/827	3358.0	37.0	90.8	0.987	0.987	0.74	0.74	0.543	6079.9	4558.4	4558.4	3344.9
BRS562,BDS562,BSS562 LED48-4S/827	3504.0	38.5	91.0	1.027	1.027	0.77	0.77	0.565	6326.3	4743.2	4743.2	3480.4



BRS562,BDS562,BSS562 LED56-4S/827	4088.0	45.0	90.8	1.2	1.2	0.9	0.9	0.66	7392.0	5544.0	5544.0	4065.6
BRS562,BDS562,BSS562 LED58-4S/827	4234.0	46.5	91.1	1.24	1.24	0.93	0.93	0.682	7638.4	5728.8	5728.8	4201.1
BRS562,BDS562,BSS562 LED64-4S/827	4608.0	52.0	88.6	1.387	1.387	1.04	1.04	0.763	8543.9	6406.4	6406.4	4700.1
BRS562,BDS562,BSS562 LED70-4S/827	5040.0	57.0	88.4	1.52	1.52	1.14	1.14	0.836	9363.2	7022.4	7022.4	5149.8
BRS562,BDS562,BSS562 LED75-4S/827	5548.0	59.0	94.0	1.573	1.573	1.18	1.18	0.865	9689.7	7268.8	7268.8	5328.4
BRS562,BDS562,BSS562 LED80-4S/827	5760.0	63.0	91.4	1.68	1.68	1.26	1.26	0.924	10348.8	7761.6	7761.6	5691.8
BRS562,BDS562,BSS562 LED88-4S/827	6336.0	70.0	90.5	1.867	1.867	1.4	1.4	1.027	11500.7	8624.0	8624.0	6326.3
BRS562,BDS562,BSS562 LED93-4S/827	6768.0	74.0	91.5	1.973	1.973	1.48	1.48	1.085	12153.7	9116.8	9116.8	6683.6
BRS562,BDS562,BSS562 LED96-4S/827	6912.0	76.0	90.9	2.027	2.027	1.52	1.52	1.115	12486.3	9363.2	9363.2	6868.4
BRS562,BDS562, BSS562 LED100-4S/827	7200.0	78.0	92.3	2.08	2.08	1.56	1.56	1.144	12812.8	9609.6	9609.6	7047.0
BRS562,BDS562, BSS562 LED104-4S/827	7560.0	81.0	93.3	2.16	2.16	1.62	1.62	1.188	13305.6	9979.2	9979.2	7318.1
BRS562,BDS562, BSS562 LED110-4S/827	7810.0	86.0	90.8	2.293	2.293	1.72	1.72	1.261	14124.9	10595.2	10595.2	7767.8
BRS562,BDS562, BSS562 LED116-4S/827	8165.0	91.0	89.7	2.427	2.427	1.82	1.82	1.335	14950.3	11211.2	11211.2	8223.6
BRS562,BDS562, BSS562 LED120-4S/827	8520.0	94.0	90.6	2.507	2.507	1.88	1.88	1.379	15443.1	11580.8	11580.8	8494.6
BRS562,BDS562, BSS562 LED125-4S/827	8875.0	98.0	90.6	2.613	2.613	1.96	1.96	1.437	16096.1	12073.6	12073.6	8851.9
BRS562,BDS562, BSS562 LED130-4S/827	9230.0	102.0	90.5	2.72	2.72	2.04	2.04	1.496	16755.2	12566.4	12566.4	9215.4
BRS562,BDS562, BSS562 LED135-4S/827	9585.0	106.0	90.4	2.827	2.827	2.12	2.12	1.555	17414.3	13059.2	13059.2	9578.8
BRS562,BDS562, BSS562 LED140-4S/827	9940.0	110.0	90.4	2.933	2.933	2.2	2.2	1.613	18067.3	13552.0	13552.0	9936.1
BRS562,BDS562, BSS562 LED145-4S/827	10295.0	114.0	90.3	3.04	3.04	2.28	2.28	1.672	18726.4	14044.8	14044.8	10299.5
BRS562,BDS562, BSS562 LED150-4S/827	10500.0	120.0	87.5	3.2	3.2	2.4	2.4	1.76	19712.0	14784.0	14784.0	10841.6

## APPENDIX (PEP ECOPASSPORT ALIGNED)

This section represents the scaling method for the **B6 module**, following the PEP EcoPassport PSR for luminaries (PSR-0014-ed2.0-EN-2023 07 13). The GWP results were scaled from a reference variant of a product family, based on various light management functions, the lumen output ( $O_{lum}$ ) and reference service life ( $RSL$ ) of each product within the same product family.

To calculate the Scaled Impact ( $SI_{pep}$ ), we have followed the below methods:

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

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

2. Using this scaled GWP, we then can apply the PEP Ecopassport method for calculating the environmental impact of the functional unit for a luminary (1000 lumens over 35000 hours), applied to B6, where the Functional Unit application considers the lumen output ( $O_{lum}$ ) and reference service lifetime ( $RSL$ ) of the product to estimate the final environmental impact. The scaled impact ( $SI_{pep}$ ) is presented in Table A4.

$$GSF = \frac{FU_{pep}}{FU_p} = \frac{1,000}{O_{lum}} * \frac{35,000}{RSL}$$

3. Calculate the GWP scaling factor ( $PGSF$ ), by multiplying the PSF by the GSF.

$$PGSF = PSF * GSF$$

4. Calculate the Total Scaling factor by multiplying the PSF by the control scaling factor ( $CSF$ ), where the  $CSF$  is determined according the relevant control factor scenario (e.g. if the luminaire has a presence detection system), as presented in Table A1.

$$TSF = PGSF * CSF$$

**Table A3: Light management functions (PEP EcoPassport aligned)**

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

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

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

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
BRS562,BDS562,BSS562 LED46-4S/740	3404.0	27.0	126.1	0.007	0.007	0.005	0.005	0.004	43.1	30.8	30.8	24.6
BRS562,BDS562,BSS562 LED48-4S/740	3552.0	28.5	124.6	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562,BSS562 LED56-4S/740	4088.0	33.0	123.9	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562,BSS562 LED58-4S/740	4234.0	34.0	124.5	0.007	0.007	0.005	0.005	0.004	43.1	30.8	30.8	24.6
BRS562,BDS562,BSS562 LED64-4S/740	4672.0	37.5	124.6	0.007	0.007	0.005	0.005	0.004	43.1	30.8	30.8	24.6



BRS562,BDS562,BSS562 LED70-4S/740	5110.0	41.0	124.6	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562,BSS562 LED75-4S/740	5548.0	44.0	126.1	0.007	0.007	0.005	0.005	0.004	43.1	30.8	30.8	24.6
BRS562,BDS562,BSS562 LED80-4S/740	5840.0	47.0	124.3	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562,BSS562 LED88-4S/740	6336.0	52.0	121.8	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562,BSS562 LED93-4S/740	6862.0	53.0	129.5	0.007	0.007	0.005	0.005	0.004	43.1	30.8	30.8	24.6
BRS562,BDS562,BSS562 LED96-4S/740	7008.0	55.0	127.4	0.007	0.007	0.005	0.005	0.004	43.1	30.8	30.8	24.6
BRS562,BDS562,BSS562 LED100-4S/740	7300.0	57.0	128.1	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562,BSS562 LED104-4S/740	7665.0	60.0	127.8	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562,BSS562 LED110-4S/740	7920.0	63.0	125.7	0.007	0.007	0.005	0.005	0.004	43.1	30.8	30.8	24.6
BRS562,BDS562,BSS562 LED116-4S/740	8280.0	67.0	123.6	0.007	0.007	0.005	0.005	0.004	43.1	30.8	30.8	24.6
BRS562,BDS562,BSS562 LED120-4S/740	8640.0	69.0	125.2	0.007	0.007	0.005	0.005	0.004	43.1	30.8	30.8	24.6
BRS562,BDS562,BSS562 LED125-4S/740	9000.0	72.0	125.0	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562,BSS562 LED130-4S/740	9360.0	76.0	123.2	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562,BSS562 LED135-4S/740	9720.0	76.0	127.9	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562,BSS562 LED140-4S/740	10080.0	79.0	127.6	0.006	0.006	0.005	0.005	0.003	37.0	30.8	30.8	18.5
BRS562,BDS562,BSS562 LED145-4S/740	10440.0	82.0	127.3	0.007	0.007	0.005	0.005	0.004	43.1	30.8	30.8	24.6
BRS562,BDS562,BSS562 LED150-4S/740	10650.0	85.0	125.3	0.007	0.007	0.005	0.005	0.004	43.1	30.8	30.8	24.6
BRS562,BDS562,BSS562 LED160-4S/740	11360.0	91.0	124.8	0.007	0.007	0.005	0.005	0.004	43.1	30.8	30.8	24.6
BRS562,BDS562,BSS562 LED170-4S/740	12070.0	97.0	124.4	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562,BSS562 LED180-4S/740	12780.0	104.0	122.9	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562,BSS562 LED190-4S/740	13490.0	110.0	122.6	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562,BSS562 LED200-4S/740	14200.0	116.0	122.4	0.006	0.006	0.005	0.005	0.003	37.0	30.8	30.8	18.5
BRS562,BDS562,BSS562 LED46-4S/730	3404.0	28.5	119.4	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562,BSS562 LED48-4S/730	3552.0	30.0	118.4	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6



BRS562,BDS562,BSS562 LED56-4S/730	4088.0	35.0	116.8	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562,BSS562 LED58-4S/730	4234.0	36.0	117.6	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562,BSS562 LED64-4S/730	4672.0	40.0	116.8	0.007	0.007	0.005	0.005	0.004	43.1	30.8	30.8	24.6
BRS562,BDS562,BSS562 LED70-4S/730	5110.0	43.5	117.5	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562,BSS562 LED75-4S/730	5548.0	46.5	119.3	0.007	0.007	0.005	0.005	0.004	43.1	30.8	30.8	24.6
BRS562,BDS562,BSS562 LED80-4S/730	5840.0	50.0	116.8	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562,BSS562 LED88-4S/730	6336.0	55.0	115.2	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562,BSS562 LED93-4S/730	6862.0	57.0	120.4	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562, BSS562 LED96-4S/730	7008.0	58.0	120.8	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562, BSS562 LED100-4S/730	7200.0	61.0	118.0	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562, BSS562 LED104-4S/730	7560.0	63.0	120.0	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562, BSS562 LED110-4S/730	7920.0	67.0	118.2	0.007	0.007	0.005	0.005	0.004	43.1	30.8	30.8	24.6
BRS562,BDS562, BSS562 LED116-4S/730	8280.0	71.0	116.6	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562, BSS562 LED120-4S/730	8640.0	74.0	116.8	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562, BSS562 LED125-4S/730	9000.0	77.0	116.9	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562, BSS562 LED130-4S/730	9230.0	80.0	115.4	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED135-4S/730	9720.0	81.0	120.0	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED140-4S/730	10080.0	84.0	120.0	0.007	0.007	0.005	0.005	0.004	43.1	30.8	30.8	24.6
BRS562,BDS562, BSS562 LED145-4S/730	10295.0	87.0	118.3	0.007	0.007	0.005	0.005	0.004	43.1	30.8	30.8	24.6
BRS562,BDS562, BSS562 LED150-4S/730	10650.0	91.0	117.0	0.007	0.007	0.005	0.005	0.004	43.1	30.8	30.8	24.6
BRS562,BDS562, BSS562 LED160-4S/730	11360.0	97.0	117.1	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562, BSS562 LED170-4S/730	12070.0	104.0	116.1	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562, BSS562 LED180-4S/730	12780.0	110.0	116.2	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED190-4S/730	13300.0	116.0	114.7	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8



BRS562,BDS562, BSS562 LED200-4S/730	14000.0	124.0	112.9	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED40-4S/727	2920.0	28.0	104.3	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED46-4S/727	3358.0	32.0	104.9	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED48-4S/727	3504.0	33.0	106.2	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED56-4S/727	4088.0	38.5	106.2	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED58-4S/727	4234.0	40.0	105.8	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED64-4S/727	4608.0	44.0	104.7	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED70-4S/727	5040.0	48.5	103.9	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED75-4S/727	5472.0	52.0	105.2	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562, BSS562 LED80-4S/727	5760.0	56.0	102.9	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED88-4S/727	6248.0	62.0	100.8	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED93-4S/727	6768.0	63.0	107.4	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562, BSS562 LED96-4S/727	6912.0	65.0	106.3	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED100-4S/727	7100.0	68.0	104.4	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED104-4S/727	7455.0	71.0	105.0	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED110-4S/727	7810.0	75.0	104.1	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562, BSS562 LED116-4S/727	8165.0	80.0	102.1	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED120-4S/727	8520.0	83.0	102.7	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED125-4S/727	8875.0	86.0	103.2	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED130-4S/727	9230.0	90.0	102.6	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED135-4S/727	9585.0	91.0	105.3	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED140-4S/727	9940.0	94.0	105.7	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED145-4S/727	10295.0	98.0	105.1	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562, BSS562 LED150-4S/727	10650.0	102.0	104.4	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6



BRS562,BDS562, BSS562 LED160-4S/727	11200.0	108.0	103.7	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED170-4S/727	11730.0	116.0	101.1	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED180-4S/727	12420.0	124.0	100.2	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED40-4S/722	2920.0	32.5	89.8	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED46-4S/722	3358.0	37.0	90.8	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED48-4S/722	3504.0	38.5	91.0	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED56-4S/722	4088.0	45.0	90.8	0.011	0.011	0.008	0.008	0.006	67.8	49.3	49.3	37.0
BRS562,BDS562, BSS562 LED58-4S/722	4234.0	46.5	91.1	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED64-4S/722	4608.0	52.0	88.6	0.011	0.011	0.008	0.008	0.006	67.8	49.3	49.3	37.0
BRS562,BDS562, BSS562 LED70-4S/722	5040.0	57.0	88.4	0.011	0.011	0.008	0.008	0.006	67.8	49.3	49.3	37.0
BRS562,BDS562, BSS562 LED75-4S/722	5548.0	59.0	94.0	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED80-4S/722	5760.0	63.0	91.4	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED88-4S/722	6336.0	70.0	90.5	0.011	0.011	0.008	0.008	0.006	67.8	49.3	49.3	37.0
BRS562,BDS562, BSS562 LED93-4S/722	6768.0	74.0	91.5	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED96-4S/722	6912.0	76.0	90.9	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED100-4S/722	7200.0	78.0	92.3	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED104-4S/722	7560.0	81.0	93.3	0.011	0.011	0.008	0.008	0.006	67.8	49.3	49.3	37.0
BRS562,BDS562, BSS562 LED110-4S/722	7810.0	86.0	90.8	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED116-4S/722	8165.0	91.0	89.7	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED120-4S/722	8520.0	94.0	90.6	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED125-4S/722	8875.0	98.0	90.6	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED130-4S/722	9230.0	102.0	90.5	0.011	0.011	0.008	0.008	0.006	67.8	49.3	49.3	37.0
BRS562,BDS562, BSS562 LED135-4S/722	9585.0	106.0	90.4	0.011	0.011	0.008	0.008	0.006	67.8	49.3	49.3	37.0
BRS562,BDS562, BSS562 LED140-4S/722	9940.0	110.0	90.4	0.012	0.012	0.009	0.009	0.007	73.9	55.4	55.4	43.1



BRS562,BDS562, BSS562 LED145-4S/722	10295.0	114.0	90.3	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED150-4S/722	10500.0	120.0	87.5	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED40-4S/840	2960.0	29.0	102.1	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED46-4S/840	3358.0	33.5	100.2	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED48-4S/840	3504.0	35.0	100.1	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED56-4S/840	4088.0	40.5	100.9	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED58-4S/840	4234.0	42.0	100.8	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED64-4S/840	4672.0	46.5	100.5	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED70-4S/840	5110.0	51.0	100.2	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED75-4S/840	5548.0	53.0	104.7	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562, BSS562 LED80-4S/840	5840.0	57.0	102.5	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED88-4S/840	6336.0	62.0	102.2	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED93-4S/840	6768.0	66.0	102.5	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED96-4S/840	6912.0	68.0	101.6	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED100-4S/840	7200.0	70.0	102.9	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED104-4S/840	7560.0	73.0	103.6	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED110-4S/840	7920.0	77.0	102.9	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562, BSS562 LED116-4S/840	8280.0	81.0	102.2	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED120-4S/840	8520.0	84.0	101.4	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED125-4S/840	8875.0	88.0	100.9	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED130-4S/840	9230.0	92.0	100.3	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED135-4S/840	9585.0	95.0	100.9	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED140-4S/840	9940.0	99.0	100.4	0.011	0.011	0.008	0.008	0.006	67.8	49.3	49.3	37.0
BRS562,BDS562, BSS562 LED145-4S/840	10295.0	102.0	100.9	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6



BRS562,BDS562, BSS562 LED150-4S/840	10650.0	106.0	100.5	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562, BSS562 LED160-4S/840	11360.0	114.0	99.6	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED170-4S/840	11900.0	122.0	97.5	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED40-4S/830	2960.0	30.0	98.7	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED46-4S/830	3358.0	34.5	97.3	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED48-4S/830	3504.0	36.0	97.3	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED56-4S/830	4088.0	42.0	97.3	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED58-4S/830	4234.0	43.5	97.3	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED64-4S/830	4672.0	48.0	97.3	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED70-4S/830	5040.0	53.0	95.1	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED75-4S/830	5548.0	55.0	100.9	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED80-4S/830	5840.0	59.0	99.0	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED88-4S/830	6336.0	64.0	99.0	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED93-4S/830	6768.0	68.0	99.5	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED96-4S/830	6912.0	71.0	97.4	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED100-4S/830	7200.0	72.0	100.0	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED104-4S/830	7560.0	75.0	100.8	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED110-4S/830	7920.0	80.0	99.0	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED116-4S/830	8280.0	84.0	98.6	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED120-4S/830	8520.0	87.0	97.9	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED125-4S/830	8875.0	91.0	97.5	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED130-4S/830	9230.0	95.0	97.2	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED135-4S/830	9585.0	99.0	96.8	0.011	0.011	0.008	0.008	0.006	67.8	49.3	49.3	37.0
BRS562,BDS562, BSS562 LED140-4S/830	9940.0	102.0	97.5	0.011	0.011	0.008	0.008	0.006	67.8	49.3	49.3	37.0



BRS562,BDS562, BSS562 LED145-4S/830	10295.0	106.0	97.1	0.008	0.008	0.006	0.006	0.004	49.3	37.0	37.0	24.6
BRS562,BDS562, BSS562 LED150-4S/830	10650.0	110.0	96.8	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED160-4S/830	11200.0	118.0	94.9	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED170-4S/830	11900.0	126.0	94.4	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED40-4S/827	2920.0	32.5	89.8	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED46-4S/827	3358.0	37.0	90.8	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED48-4S/827	3504.0	38.5	91.0	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED56-4S/827	4088.0	45.0	90.8	0.011	0.011	0.008	0.008	0.006	67.8	49.3	49.3	37.0
BRS562,BDS562, BSS562 LED58-4S/827	4234.0	46.5	91.1	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED64-4S/827	4608.0	52.0	88.6	0.011	0.011	0.008	0.008	0.006	67.8	49.3	49.3	37.0
BRS562,BDS562, BSS562 LED70-4S/827	5040.0	57.0	88.4	0.011	0.011	0.008	0.008	0.006	67.8	49.3	49.3	37.0
BRS562,BDS562, BSS562 LED75-4S/827	5548.0	59.0	94.0	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED80-4S/827	5760.0	63.0	91.4	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED88-4S/827	6336.0	70.0	90.5	0.011	0.011	0.008	0.008	0.006	67.8	49.3	49.3	37.0
BRS562,BDS562, BSS562 LED93-4S/827	6768.0	74.0	91.5	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED96-4S/827	6912.0	76.0	90.9	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED100-4S/827	7200.0	78.0	92.3	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED104-4S/827	7560.0	81.0	93.3	0.011	0.011	0.008	0.008	0.006	67.8	49.3	49.3	37.0
BRS562,BDS562, BSS562 LED110-4S/827	7810.0	86.0	90.8	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED116-4S/827	8165.0	91.0	89.7	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED120-4S/827	8520.0	94.0	90.6	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED125-4S/827	8875.0	98.0	90.6	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0
BRS562,BDS562, BSS562 LED130-4S/827	9230.0	102.0	90.5	0.011	0.011	0.008	0.008	0.006	67.8	49.3	49.3	37.0
BRS562,BDS562, BSS562 LED135-4S/827	9585.0	106.0	90.4	0.011	0.011	0.008	0.008	0.006	67.8	49.3	49.3	37.0

BRS562,BDS562, BSS562 LED140-4S/827	9940.0	110.0	90.4	0.012	0.012	0.009	0.009	0.007	73.9	55.4	55.4	43.1
BRS562,BDS562, BSS562 LED145-4S/827	10295.0	114.0	90.3	0.009	0.009	0.007	0.007	0.005	55.4	43.1	43.1	30.8
BRS562,BDS562, BSS562 LED150-4S/827	10500.0	120.0	87.5	0.01	0.01	0.007	0.007	0.006	61.6	43.1	43.1	37.0

