

ENVIRONMENTAL PRODUCT DECLARATION

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

Cascade Flex Vitality
Whitecroft Lighting Limited



EPD HUB, HUB-0207

Publishing date 09 December 2022, last updated date 09 December 2022, valid until 09 December 2027

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Whitecroft Lighting Limited
Address	Burlington Street, Ashton-Under-Lyne, Lancashire OL7 0AX, United Kingdom
Contact details	email@whitecroftlight.com
Website	https://www.whitecroftlighting.com/

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	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to grave with modules A1-A3, A4, A5, B3, B6, C1-C4 and D
EPD author	Iga Jakubczyk
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal certification <input checked="" type="checkbox"/> External verification
EPD verifier	E.A as an authorized verifier acting for EPD Hub Limited

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 construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

PRODUCT

Product name	Cascade Flex Vitality
Additional labels	N/A
Product reference	C6PEY24K8XT
Place of production	Ashton-under-Lyne, United Kingdom
Period for data	2021
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	0 %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 unit of Cascade Flex Vitality
Declared unit mass	4.04 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	26.5
GWP-total, A1-A3 (kgCO ₂ e)	26.5
Secondary material, inputs (%)	34.4
Secondary material, outputs (%)	85.9
Total energy use, A1-A3 (kWh)	99.8
Total water use, A1-A3 (m ³ e)	0.259

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Founded in 1945, and headquartered in Ashton-under-Lyne, Greater Manchester, Whitecroft Lighting is one of the UK's largest public and private sector lighting providers, working with education, healthcare, industrial and workspace projects. Whitecroft Lighting has 370 employees, an annual turnover of £55m and undertakes all R&D, product design and manufacturing in its HQ and neighbouring 10,000sqm manufacturing facility. The company continuously strives to offer its customers the best service in the industry, with extensive sales, specification, design, product development, and after-sales support teams working closely with clients nationally.

In recent years, Whitecroft Lighting has been at the forefront of sustainability and circularity in UK commercial lighting, leading the market in the development of products that minimise the use of material and promote reusability through replaceable modular hardware.

PRODUCT DESCRIPTION

Designed with a circular approach the 'Cascade Flex Vitality' is a new generation of recessed luminaire. Careful consideration has been given to the materials used and the effect they have on people and the environment. The luminaire features a replaceable central cartridge which can be returned, refurbished, and reused multiple times ensuring that the materials remain in use without a sacrifice to the luminaire's performance, before eventually being recycled at the end of its life.

The distinctive central optics and range of lumen outputs deliver both visual comfort and efficacy. The pod optic is the preferred option for areas where a higher level of glare control is required. It directs 80% of the output onto the task, while the remaining 20% serves to illuminate the bevelled ceiling canopy. This results in an intermediate brightness zone which creates a contrasting field between the optic and the ceiling plane, adding visual interest and overall comfort.

Cascade Flex Vitality is Cradle to Cradle Certified® Bronze which ensures products are made with careful consideration of the materials used in construction, their effect on people, the environment and how they can be re-used and later recycled at the end of life.

Further information can be found at

<https://www.whitecroftlighting.com/cascade-flex-vitality>

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	65	United Kingdom
Minerals	<0.1	Asia
Fossil materials	35	Europe
Bio-based materials	0	N/A

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	0.11955

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 unit of Cascade Flex Vitality
Mass per declared unit	4.04 kg
Functional unit	1 unit; 2500 hours per year consuming 25.3 Watts for 20 years
Reference service life	20 years

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	MND	MND	x	MND	MND	x	MND	x	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruct./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, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. Furthermore, the study considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

The product is made of a mixture of virgin and recycled metals, plastics and electronic components. The materials are manufactured by various suppliers around the world. The main manufacturing processes involved are cold rolled, punched, and folded steel and plastic injection moulding. Components are then transported to Whitecroft Lighting's production facility in Ashton-under-Lyne, where the main manufacturing processes include LED board surface mounting and spray painting of metal components. The different parts are processed further using CNC manufacturing and undergo manual and robotic assembly.

The finished product leaves the facility packaged in cardboard and polyethylene shrink wrap. All cardboard packaging is labelled accordingly using polypropylene stick-on labels. All packages contain product leaflet, that should be kept until end of life of the product.

Certified renewable electricity and natural gas are consumed during manufacturing.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

The average distance of transportation from production plant to building site is assumed as 226.9km (Distance from Ashton-Under-Lyne, UK, to Northampton, UK.) The transportation method is assumed to be lorry. Vehicle capacity utilisation volume factor is assumed to be 100 % which means full load. In reality, this may vary, but as the role of transportation emissions in the total result is small, the variety in load is assumed to be negligible. Empty returns are not considered as it is assumed that the return trip is used by the transportation company to serve the needs of other clients. Transportation does not cause losses as products are packaged properly. Also, the volume capacity utilisation factor is assumed to be 100 % for the nested packaged products.

Transportation impacts that occur from delivery of the product cover direct exhaust emissions of fuel, environmental impacts of fuel production, as well as related infrastructure emissions.

Environmental impacts from installation into the building include waste packaging materials (A5) and release of biogenic carbon dioxide from wood pallets and cardboard. The impacts of energy consumption and the used ancillary materials during installation are considered negligible.

PRODUCT USE AND MAINTENANCE (B1-B7)

Lifetime of the product is assumed to be 20 years and 2,500 hours a year, in line with standard for office applications (Guidance document – Evaluating performance of LED based luminaires). At this point in time, LED output >90% of initial output (L91@50K Hours). No full parts replacements were allowed for. Driver replacement rate of 10% over 100,000 hours has been included.

During the use phase (B6), the luminaire consumes power from electricity available on the low voltage level in United Kingdom (Data source: Ecoinvent 3.6).

Occupancy and application estimations, relevant for product energy use, were made in line with Whitecroft Lighting recommendations; Used scenario contains allowance for constant light output, Occupancy Detection (Manual On/Auto Off) and Daylight Factor. All used control factor values are based on *BS EN 15193-1:2017 Energy performance of buildings - Energy requirements for lighting - Part 1: Specifications, Module M9*.

Where alternative control systems are used, please refer to appendix table 1.1

Impacts due to electricity production include direct emissions to air, transformation, and transmission losses. Air, soil, and water impacts during the use phase have not been studied.

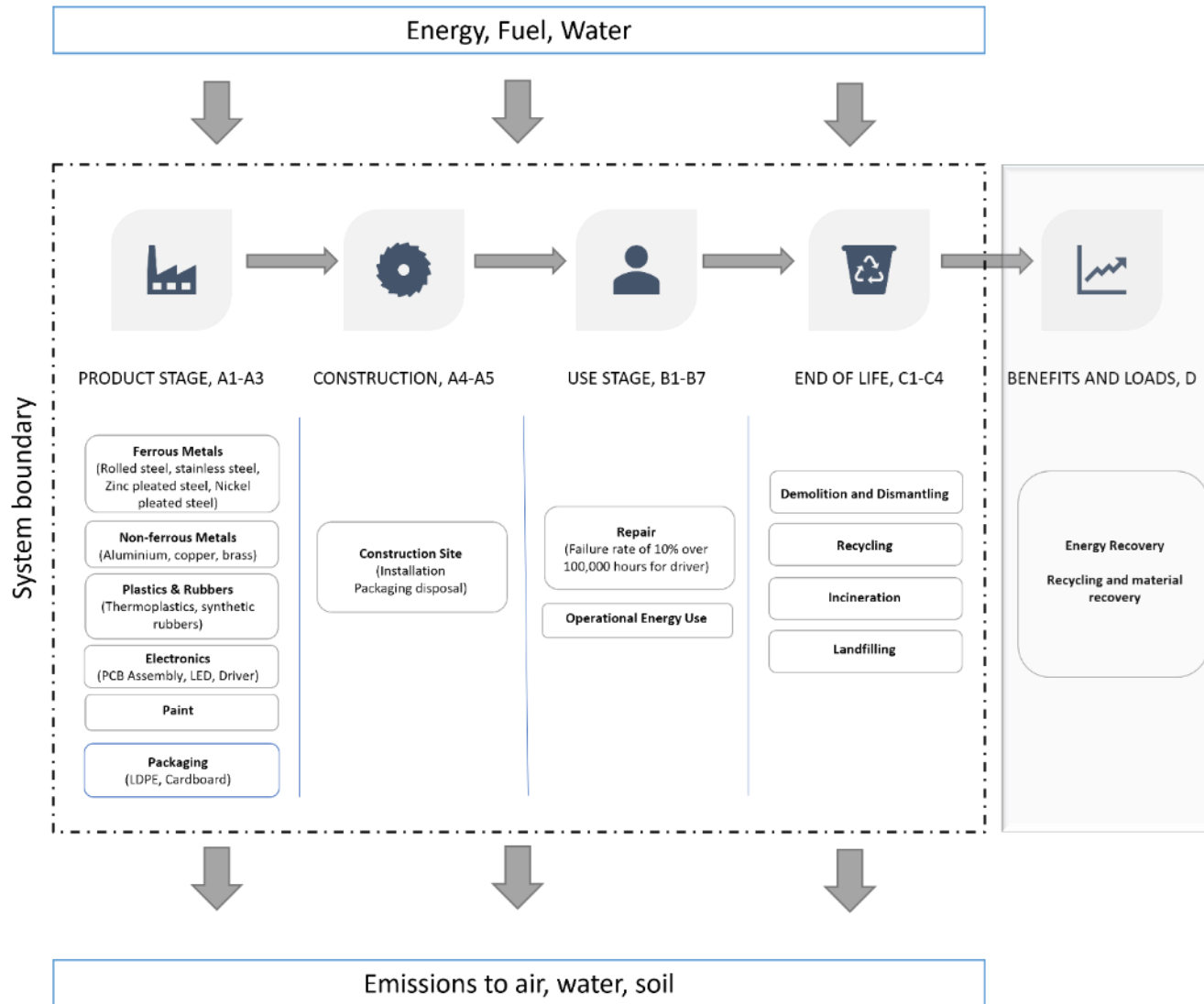
PRODUCT END OF LIFE (C1-C4, D)

Consumption of energy and natural resources in the demolition process is assumed to be negligible. It is assumed that the waste is collected separately and transported to the nearest waste treatment centre. Transportation distance to the treatment centre is assumed as 50 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.

The product undergoes manual dismantling, and the parts are divided into metals, plastics, and electronics. All plastics are assumed to be 100% recycled, and 95% of metals assumed to undergo recycling process due to their recycling potential. Electronics are shredded and sorted again into plastics and metals (WRAP, 2018). Module C3 accounts for energy and resource inputs for sorting and treating these waste streams.

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

MANUFACTURING PROCESS



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, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging materials	No allocation
Ancillary materials	Not applicable
Manufacturing energy and waste	Allocated by mass

AVERAGES AND VARIABILITY

Type of average	No averaging
Averaging method	Not applicable
Variation in GWP-fossil for A1-A3	0 %

This EPD is product and factory specific and does not contain average calculations.

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 and One Click LCA databases were used as sources of environmental data.

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	2,24E1	1,71E-1	3,85E0	2,65E1	1,01E-1	2,78E-1	MND	MND	1,36E-1	MND	MND	3,32E2	MND	0E0	1,84E-2	6,39E-1	6,94E-4	-4,79E0
GWP – fossil	kg CO ₂ e	2,25E1	1,71E-1	3,89E0	2,65E1	1,02E-1	2,13E-2	MND	MND	1,36E-1	MND	MND	3,32E2	MND	0E0	1,84E-2	6,32E-1	6,93E-4	-5E0
GWP – biogenic	kg CO ₂ e	-6,03E-2	8,84E-5	-5,62E-2	-1,16E-1	5,7E-5	2,57E-1	MND	MND	-6,9E-4	MND	MND	2,39E-1	MND	0E0	1,33E-5	6,3E-3	1,37E-6	2,09E-1
GWP – LULUC	kg CO ₂ e	2,48E-2	5,9E-5	1,86E-2	4,35E-2	3,19E-5	1,44E-5	MND	MND	1,12E-4	MND	MND	4,34E-1	MND	0E0	5,52E-6	3,19E-4	2,06E-7	-2,79E-4
Ozone depletion pot.	kg CFC-11e	1,02E-6	3,87E-8	5,28E-7	1,59E-6	2,31E-8	3,87E-9	MND	MND	1,15E-8	MND	MND	3,37E-5	MND	0E0	4,32E-9	3,64E-8	2,85E-10	-1,37E-7
Acidification potential	mol H ⁺ e	1,4E-1	9,26E-4	6,56E-3	1,47E-1	4,34E-4	1,81E-4	MND	MND	2,16E-3	MND	MND	1,28E0	MND	0E0	7,71E-5	1,91E-3	6,58E-6	-2,29E-2
EP-freshwater ²⁾	kg Pe	1,3E-3	1,51E-6	5,02E-5	1,35E-3	9,63E-7	3,5E-7	MND	MND	1,68E-5	MND	MND	1,08E-2	MND	0E0	1,49E-7	1,15E-5	8,37E-9	-2,32E-4
EP-marine	kg Ne	1,99E-2	2,63E-4	1,79E-3	2,2E-2	1,29E-4	9,13E-5	MND	MND	1,83E-4	MND	MND	2,33E-1	MND	0E0	2,32E-5	4,8E-4	2,26E-6	-4,36E-3
EP-terrestrial	mol Ne	2,3E-1	2,9E-3	1,83E-2	2,51E-1	1,42E-3	6,76E-4	MND	MND	2,34E-3	MND	MND	2,76E0	MND	0E0	2,57E-4	5,34E-3	2,49E-5	-4,95E-2
POCP (“smog”) ³⁾	kg NMVOCe	8,16E-2	8,77E-4	5,31E-3	8,77E-2	4,54E-4	2,35E-4	MND	MND	7,31E-4	MND	MND	7,01E-1	MND	0E0	8,25E-5	1,61E-3	7,24E-6	-2,41E-2
ADP-minerals & metals ⁴⁾	kg Sbe	8,27E-4	3,48E-6	3,29E-5	8,64E-4	1,71E-6	3,64E-7	MND	MND	1,04E-5	MND	MND	2,43E-3	MND	0E0	3,13E-7	8,43E-6	6,33E-9	-5,81E-5
ADP-fossil resources	MJ	2,8E2	2,59E0	6,37E1	3,46E2	1,56E0	2,96E-1	MND	MND	1,99E0	MND	MND	8,06E3	MND	0E0	2,86E-1	4,67E0	1,94E-2	-8,79E1
Water use ⁵⁾	m ³ e depr.	9,52E0	9,72E-3	3,74E-1	9,9E0	6,6E-3	2,32E-3	MND	MND	8,29E-2	MND	MND	1,64E1	MND	0E0	1,06E-3	1,02E-1	8,95E-4	-2,89E0

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-6	1,35E-8	5,58E-8	1,62E-6	9,06E-9	7,79E-9	MND	MND	9,76E-9	MND	MND	4,13E-6	MND	0E0	1,66E-9	2,81E-8	1,28E-10	-3,29E-7
Ionizing radiation ⁶⁾	kBq U235e	6,18E-1	1,11E-2	1,53E-1	7,82E-1	6,57E-3	1,26E-3	MND	MND	4,15E-3	MND	MND	1,34E2	MND	0E0	1,25E-3	1,61E-2	7,94E-5	-7,1E-3
Ecotoxicity (freshwater)	CTUe	1,26E3	2,06E0	6,29E1	1,33E3	1,29E0	3,88E-1	MND	MND	1,92E1	MND	MND	4,99E3	MND	0E0	2,18E-1	8,61E0	1,22E-2	-2,07E2
Human toxicity, cancer	CTUh	7,58E-8	5,59E-11	8,39E-10	7,67E-8	3,07E-11	1,05E-10	MND	MND	7,83E-10	MND	MND	1,07E-7	MND	0E0	5,58E-12	7,17E-10	2,89E-13	-2E-8
Human tox. non-cancer	CTUh	1,28E-6	2,28E-9	1,87E-8	1,3E-6	1,42E-9	1E-9	MND	MND	2E-8	MND	MND	3,65E-6	MND	0E0	2,59E-10	1,1E-8	8,93E-12	4,38E-7
SQP ⁷⁾	-	3,38E1	3,07E0	3,37E0	4,02E1	2,33E0	2,58E-1	MND	MND	4,07E-1	MND	MND	2,2E2	MND	0E0	4,31E-1	2,41E0	3,29E-2	-7,95E0

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy ⁸⁾	MJ	2,03E1	3,09E-2	1,9E1	3,94E1	1,68E-2	8,5E-3	MND	MND	1,73E-1	MND	MND	1,51E3	MND	0E0	3,59E-3	3,41E-1	1,57E-4	-6,59E0
Renew. PER as material	MJ	0E0	0E0	6,45E-1	6,45E-1	0E0	-6,11E-1	MND	MND	0E0	MND	MND	0E0	MND	0E0	0E0	-3,4E-2	0E0	4,78E-1
Total use of renew. PER	MJ	2,03E1	3,09E-2	1,97E1	4E1	1,68E-2	-6,03E-1	MND	MND	1,73E-1	MND	MND	1,51E3	MND	0E0	3,59E-3	3,07E-1	1,57E-4	-6,12E0
Non-re. PER as energy	MJ	2,54E2	2,59E0	6,35E1	3,2E2	1,56E0	2,96E-1	MND	MND	1,99E0	MND	MND	8,06E3	MND	0E0	2,86E-1	4,67E0	1,94E-2	-4,51E1
Non-re. PER as material	MJ	2,6E1	0E0	2,38E-1	2,62E1	0E0	0E0	MND	MND	0E0	MND	MND	0E0	MND	0E0	0E0	0E0	0E0	-4,28E1
Total use of non-re. PER	MJ	2,8E2	2,59E0	6,37E1	3,46E2	1,56E0	2,96E-1	MND	MND	1,99E0	MND	MND	8,06E3	MND	0E0	2,86E-1	4,67E0	1,94E-2	-8,79E1
Secondary materials	kg	1,39E0	0E0	7,6E-5	1,39E0	0E0	0E0	MND	MND	3,29E-3	MND	MND	0E0	MND	0E0	0E0	0E0	0E0	2,36E0
Renew. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	0E0	MND	MND	0E0	MND	0E0	0E0	0E0	0E0	0E0
Non-ren. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	0E0	MND	MND	0E0	MND	0E0	0E0	0E0	0E0	0E0
Use of net fresh water	m ³	1,61E-1	4,92E-4	9,75E-2	2,59E-1	3,26E-4	7,97E-5	MND	MND	1,1E-3	MND	MND	1,99E0	MND	0E0	5,95E-5	1,87E-3	2,12E-5	-3,23E-2

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	3,72E0	2,92E-3	6,5E-2	3,79E0	1,88E-3	8,21E-4	MND	MND	2,17E-2	MND	MND	2,39E1	MND	0E0	2,77E-4	0E0	1,81E-5	-1,44E0
Non-hazardous waste	kg	6,33E1	2,35E-1	1,64E0	6,52E1	1,71E-1	8,81E-2	MND	MND	1,09E0	MND	MND	3,9E2	MND	0E0	3,07E-2	0E0	1,32E-1	-1,21E1
Radioactive waste	kg	5,04E-4	1,75E-5	1,04E-4	6,25E-4	1,04E-5	1,81E-6	MND	MND	3,51E-6	MND	MND	6,23E-2	MND	0E0	1,96E-6	0E0	1,28E-7	-1,39E-5

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	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	0E0	MND	MND	0E0	MND	0E0	0E0	0E0	0E0	0E0
Materials for recycling	kg	0E0	0E0	5,18E-1	5,18E-1	0E0	1E-2	MND	MND	0E0	MND	MND	0E0	MND	0E0	0E0	3,47E0	0E0	0E0
Materials for energy rec	kg	0E0	0E0	0E0	0E0	0E0	5,48E-2	MND	MND	0E0	MND	MND	0E0	MND	0E0	0E0	0E0	0E0	0E0
Exported energy	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	0E0	MND	MND	0E0	MND	0E0	0E0	2,38E-1	0E0	0E0

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

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO ₂ e	2,11E1	1,7E-1	3,82E0	2,51E1	1,01E-1	1,05E-1	MND	MND	1,29E-1	MND	MND	3,26E2	MND	0E0	1,82E-2	6,25E-1	6,8E-4	-4,69E0
Ozone depletion Pot.	kg CFC ₁₁ e	1,03E-6	3,08E-8	4,15E-7	1,47E-6	1,84E-8	3,12E-9	MND	MND	1,41E-8	MND	MND	3,86E-5	MND	0E0	3,43E-9	3,06E-8	2,26E-10	-1,22E-7
Acidification	kg SO ₂ e	1,2E-1	6,14E-4	4,98E-3	1,25E-1	3,05E-4	1,51E-4	MND	MND	1,94E-3	MND	MND	1,08E0	MND	0E0	3,74E-5	1,22E-3	2,74E-6	-1,9E-2
Eutrophication	kg PO ₄ ³ e	5,11E-2	1,14E-4	1,88E-3	5,31E-2	6,9E-5	3,51E-4	MND	MND	7,66E-4	MND	MND	3,46E-1	MND	0E0	7,55E-6	9,86E-4	5,3E-7	-1,02E-2
POCP ("smog")	kg C ₂ H ₄ e	8,71E-3	2,63E-5	3,34E-4	9,07E-3	1,31E-5	3,52E-5	MND	MND	9,47E-5	MND	MND	4,5E-2	MND	0E0	2,37E-6	8,8E-5	2,01E-7	-2,89E-3
ADP-elements	kg Sbe	8,27E-4	3,48E-6	3,29E-5	8,64E-4	1,71E-6	3,64E-7	MND	MND	1,04E-5	MND	MND	2,43E-3	MND	0E0	3,13E-7	8,43E-6	6,33E-9	-5,81E-5
ADP-fossil	MJ	2,8E2	2,59E0	6,37E1	3,46E2	1,56E0	2,96E-1	MND	MND	1,99E0	MND	MND	8,06E3	MND	0E0	2,86E-1	4,67E0	1,94E-2	-8,79E1

VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online

This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Elma Avdyli as an authorized verifier acting for EPD Hub Limited
09.12.2022



APPENDIX

TABLE 1.1

This table is relevant only for **B6 module**

Calculation is made based on dataset describing electricity available on the low voltage level in United Kingdom for year 2014. (0.38 kg CO2e / kWh – source Ecoinvent 3.6 database). This value should be adjusted depending on specific project.

Operating hours shown in the table are based on standard office application with value based on guidance paper – “Evaluating performance of LED based luminaires” issued by Lighting Europe. Presented controls factors values are based on BS EN 15193-1:2017. Please refer to BSI standard publication or contact Whitcroft directly for more information.

Luminaire data					Working time			Controls Factors								Scaling		
PART NUMBER	Colour temperature	CRI	Lumen output	Wattage	Years of working	Annual working hours	Total working hours	Constant Light	Manual on/ Off switch	Manual on/ Auto off	Manual on/ Dimmed	Auto on/ Auto off	Auto on/ Dimmed	Daylight*	Total	Energy Use	Scaling factor	GWP B6
C6PEY34K9XT	4000K	90	4135lm	35.7W	20 years	2500 hours/year	50000 hours	0.9	1					0.95	0.86	1526 kWh	1.8	585.26 kg CO2e
C6PEY34K9XT	4000K	90	4135lm	35.7W	20 years	2500 hours/year	50000 hours	0.9		0.8				0.95	0.68	1221 kWh	1.4	468.21 kg CO2e
C6PEY34K9XT	4000K	90	4135lm	35.7W	20 years	2500 hours/year	50000 hours	0.9			0.9			0.95	0.77	1374 kWh	1.6	526.73 kg CO2e
C6PEY34K9XT	4000K	90	4135lm	35.7W	20 years	2500 hours/year	50000 hours	0.9				0.9		0.95	0.77	1374 kWh	1.6	526.73 kg CO2e
C6PEY34K9XT	4000K	90	4135lm	35.7W	20 years	2500 hours/year	50000 hours	0.9					0.95	0.95	0.81	1450 kWh	1.7	555.99 kg CO2e
C6PEY34K9XT	4000K	90	4135lm	35.7W	20 years	2500 hours/year	50000 hours		1					0.95	0.95	1696 kWh	2	650.29 kg CO2e
C6PEY34K9XT	4000K	90	4135lm	35.7W	20 years	2500 hours/year	50000 hours			0.8				0.95	0.76	1357 kWh	1.6	520.23 kg CO2e
C6PEY34K9XT	4000K	90	4135lm	35.7W	20 years	2500 hours/year	50000 hours				0.9			0.95	0.86	1526 kWh	1.8	585.26 kg CO2e
C6PEY34K9XT	4000K	90	4135lm	35.7W	20 years	2500 hours/year	50000 hours					0.9		0.95	0.86	1526 kWh	1.8	585.26 kg CO2e
C6PEY34K9XT	4000K	90	4135lm	35.7W	20 years	2500 hours/year	50000 hours						0.95	0.95	0.9	1611 kWh	1.9	617.77 kg CO2e
C6PEY34K8XT	4000K	80	4127lm	32.6W	20 years	2500 hours/year	50000 hours	0.9	1					0.95	0.86	1394 kWh	1.6	534.44 kg CO2e
C6PEY34K8XT	4000K	80	4127lm	32.6W	20 years	2500 hours/year	50000 hours	0.9		0.8				0.95	0.68	1115 kWh	1.3	427.55 kg CO2e
C6PEY34K8XT	4000K	80	4127lm	32.6W	20 years	2500 hours/year	50000 hours	0.9			0.9			0.95	0.77	1254 kWh	1.4	480.99 kg CO2e
C6PEY34K8XT	4000K	80	4127lm	32.6W	20 years	2500 hours/year	50000 hours	0.9				0.9		0.95	0.77	1254 kWh	1.4	480.99 kg CO2e
C6PEY34K8XT	4000K	80	4127lm	32.6W	20 years	2500 hours/year	50000 hours	0.9					0.95	0.95	0.81	1324 kWh	1.5	507.72 kg CO2e
C6PEY34K8XT	4000K	80	4127lm	32.6W	20 years	2500 hours/year	50000 hours		1					0.95	0.95	1549 kWh	3.7	1218.89 kg CO2e
C6PEY34K8XT	4000K	80	4127lm	32.6W	20 years	2500 hours/year	50000 hours			0.8				0.95	0.76	1239 kWh	1.4	475.06 kg CO2e
C6PEY34K8XT	4000K	80	4127lm	32.6W	20 years	2500 hours/year	50000 hours				0.9			0.95	0.86	1394 kWh	1.6	534.44 kg CO2e
C6PEY34K8XT	4000K	80	4127lm	32.6W	20 years	2500 hours/year	50000 hours					0.9		0.95	0.86	1394 kWh	1.6	534.44 kg CO2e
C6PEY34K8XT	4000K	80	4127lm	32.6W	20 years	2500 hours/year	50000 hours						0.95	0.95	0.9	1471 kWh	1.7	564.13 kg CO2e
C6PEY33K9XT	3000K	90	4092lm	38.6W	20 years	2500 hours/year	50000 hours	0.9	1					0.95	0.86	1650 kWh	1.9	632.80 kg CO2e

C6PEY33K9XT	3000K	90	4092lm	38.6W	20 years	2500 hours/year	50000 hours	0.9		0.8				0.95	0.68	1320 kWh	1.5	506.24 kg CO2e
C6PEY33K9XT	3000K	90	4092lm	38.6W	20 years	2500 hours/year	50000 hours	0.9			0.9			0.95	0.77	1485 kWh	1.7	569.52 kg CO2e
C6PEY33K9XT	3000K	90	4092lm	38.6W	20 years	2500 hours/year	50000 hours	0.9				0.9		0.95	0.77	1485 kWh	1.7	569.52 kg CO2e
C6PEY33K9XT	3000K	90	4092lm	38.6W	20 years	2500 hours/year	50000 hours	0.9					0.95	0.95	0.81	1568 kWh	1.8	601.16 kg CO2e
C6PEY33K9XT	3000K	90	4092lm	38.6W	20 years	2500 hours/year	50000 hours		1					0.95	0.95	1834 kWh	2.1	703.11 kg CO2e
C6PEY33K9XT	3000K	90	4092lm	38.6W	20 years	2500 hours/year	50000 hours			0.8				0.95	0.76	1467 kWh	1.7	562.49 kg CO2e
C6PEY33K9XT	3000K	90	4092lm	38.6W	20 years	2500 hours/year	50000 hours				0.9			0.95	0.86	1650 kWh	1.9	632.80 kg CO2e
C6PEY33K9XT	3000K	90	4092lm	38.6W	20 years	2500 hours/year	50000 hours					0.9		0.95	0.86	1650 kWh	1.9	632.80 kg CO2e
C6PEY33K9XT	3000K	90	4092lm	38.6W	20 years	2500 hours/year	50000 hours						0.95	0.95	0.9	1742 kWh	2	667.96 kg CO2e
C6PEY33K8XT	3000K	80	4062lm	32.1W	20 years	2500 hours/year	50000 hours	0.9	1					0.95	0.86	1372 kWh	1.6	526.24 kg CO2e
C6PEY33K8XT	3000K	80	4062lm	32.1W	20 years	2500 hours/year	50000 hours	0.9		0.8				0.95	0.68	1098 kWh	1.3	420.99 kg CO2e
C6PEY33K8XT	3000K	80	4062lm	32.1W	20 years	2500 hours/year	50000 hours	0.9			0.9			0.95	0.77	1235 kWh	1.4	473.62 kg CO2e
C6PEY33K8XT	3000K	80	4062lm	32.1W	20 years	2500 hours/year	50000 hours	0.9				0.9		0.95	0.77	1235 kWh	1.4	473.62 kg CO2e
C6PEY33K8XT	3000K	80	4062lm	32.1W	20 years	2500 hours/year	50000 hours	0.9					0.95	0.95	0.81	1304 kWh	1.5	499.93 kg CO2e
C6PEY33K8XT	3000K	80	4062lm	32.1W	20 years	2500 hours/year	50000 hours		1					0.95	0.95	1525 kWh	1.8	584.71 kg CO2e
C6PEY33K8XT	3000K	80	4062lm	32.1W	20 years	2500 hours/year	50000 hours			0.8				0.95	0.76	1220 kWh	1.4	467.77 kg CO2e
C6PEY33K8XT	3000K	80	4062lm	32.1W	20 years	2500 hours/year	50000 hours				0.9			0.95	0.86	1372 kWh	1.6	526.24 kg CO2e
C6PEY33K8XT	3000K	80	4062lm	32.1W	20 years	2500 hours/year	50000 hours					0.9		0.95	0.86	1372 kWh	1.6	526.24 kg CO2e
C6PEY33K8XT	3000K	80	4062lm	32.1W	20 years	2500 hours/year	50000 hours						0.95	0.95	0.9	1449 kWh	1.7	555.48 kg CO2e
C6PEY24K9XT	4000K	90	3332lm	28.5W	20 years	2500 hours/year	50000 hours	0.9	1					0.95	0.86	1218 kWh	1.4	467.22 kg CO2e
C6PEY24K9XT	4000K	90	3332lm	28.5W	20 years	2500 hours/year	50000 hours	0.9		0.8				0.95	0.68	975 kWh	1.1	373.78 kg CO2e
C6PEY24K9XT	4000K	90	3332lm	28.5W	20 years	2500 hours/year	50000 hours	0.9			0.9			0.95	0.77	1097 kWh	1.3	420.50 kg CO2e
C6PEY24K9XT	4000K	90	3332lm	28.5W	20 years	2500 hours/year	50000 hours	0.9				0.9		0.95	0.77	1097 kWh	1.3	420.50 kg CO2e
C6PEY24K9XT	4000K	90	3332lm	28.5W	20 years	2500 hours/year	50000 hours	0.9					0.95	0.95	0.81	1157 kWh	1.3	443.86 kg CO2e
C6PEY24K9XT	4000K	90	3332lm	28.5W	20 years	2500 hours/year	50000 hours		1					0.95	0.95	1354 kWh	1.6	519.14 kg CO2e
C6PEY24K9XT	4000K	90	3332lm	28.5W	20 years	2500 hours/year	50000 hours			0.8				0.95	0.76	1083 kWh	1.3	415.31 kg CO2e
C6PEY24K9XT	4000K	90	3332lm	28.5W	20 years	2500 hours/year	50000 hours				0.9			0.95	0.86	1218 kWh	1.4	467.22 kg CO2e
C6PEY24K9XT	4000K	90	3332lm	28.5W	20 years	2500 hours/year	50000 hours					0.9		0.95	0.86	1218 kWh	1.4	467.22 kg CO2e
C6PEY24K9XT	4000K	90	3332lm	28.5W	20 years	2500 hours/year	50000 hours						0.95	0.95	0.9	1286 kWh	1.5	493.18 kg CO2e
C6PEY24K8XT	4000K	80	3316lm	25.3W	20 years	2500 hours/year	50000 hours	0.9	1					0.95	0.86	1082 kWh	1.3	414.76 kg CO2e
C6PEY24K8XT	4000K	80	3316lm	25.3W	20 years	2500 hours/year	50000 hours	0.9		0.8				0.95	0.68	865 kWh	1	331.81 kg CO2e
C6PEY24K8XT	4000K	80	3316lm	25.3W	20 years	2500 hours/year	50000 hours	0.9			0.9			0.95	0.77	973 kWh	1.1	373.29 kg CO2e
C6PEY24K8XT	4000K	80	3316lm	25.3W	20 years	2500 hours/year	50000 hours	0.9				0.9		0.95	0.77	973 kWh	1.1	373.29 kg CO2e
C6PEY24K8XT	4000K	80	3316lm	25.3W	20 years	2500 hours/year	50000 hours	0.9					0.95	0.95	0.81	1027 kWh	1.2	394.02 kg CO2e
C6PEY24K8XT	4000K	80	3316lm	25.3W	20 years	2500 hours/year	50000 hours		1					0.95	0.95	1202 kWh	1.4	460.85 kg CO2e
C6PEY24K8XT	4000K	80	3316lm	25.3W	20 years	2500 hours/year	50000 hours			0.8				0.95	0.76	961 kWh	1.1	368.68 kg CO2e
C6PEY24K8XT	4000K	80	3316lm	25.3W	20 years	2500 hours/year	50000 hours				0.9			0.95	0.86	1082 kWh	1.3	414.76 kg CO2e
C6PEY24K8XT	4000K	80	3316lm	25.3W	20 years	2500 hours/year	50000 hours					0.9		0.95	0.86	1082 kWh	1.3	414.76 kg CO2e
C6PEY24K8XT	4000K	80	3316lm	25.3W	20 years	2500 hours/year	50000 hours						0.95	0.95	0.9	1142 kWh	1.3	437.80 kg CO2e
C6PEY23K9XT	3000K	90	3323lm	30.6W	20 years	2500 hours/year	50000 hours	0.9	1					0.95	0.86	1308 kWh	1.5	501.65 kg CO2e
C6PEY23K9XT	3000K	90	3323lm	30.6W	20 years	2500 hours/year	50000 hours	0.9		0.8				0.95	0.68	1047 kWh	1.2	401.32 kg CO2e
C6PEY23K9XT	3000K	90	3323lm	30.6W	20 years	2500 hours/year	50000 hours	0.9			0.9			0.95	0.77	1177 kWh	1.4	451.48 kg CO2e
C6PEY23K9XT	3000K	90	3323lm	30.6W	20 years	2500 hours/year	50000 hours	0.9				0.9		0.95	0.77	1177 kWh	1.4	451.48 kg CO2e
C6PEY23K9XT	3000K	90	3323lm	30.6W	20 years	2500 hours/year	50000 hours	0.9					0.95	0.95	0.81	1243 kWh	1.4	476.57 kg CO2e

C6PEY23K9XT	3000K	90	3323lm	30.6W	20 years	2500 hours/year	50000 hours		1					0.95	0.95	1454 kWh	1.7	557.39 kg CO2e
C6PEY23K9XT	3000K	90	3323lm	30.6W	20 years	2500 hours/year	50000 hours			0.8				0.95	0.76	1163 kWh	1.3	445.91 kg CO2e
C6PEY23K9XT	3000K	90	3323lm	30.6W	20 years	2500 hours/year	50000 hours				0.9			0.95	0.86	1308 kWh	1.5	501.65 kg CO2e
C6PEY23K9XT	3000K	90	3323lm	30.6W	20 years	2500 hours/year	50000 hours					0.9		0.95	0.86	1308 kWh	1.5	501.65 kg CO2e
C6PEY23K9XT	3000K	90	3323lm	30.6W	20 years	2500 hours/year	50000 hours						0.95	0.95	0.9	1381 kWh	1.6	529.52 kg CO2e
C6PEY23K8XT	3000K	80	3302lm	25.6W	20 years	2500 hours/year	50000 hours	0.9	1					0.95	0.86	1094 kWh	1.3	419.68 kg CO2e
C6PEY23K8XT	3000K	80	3302lm	25.6W	20 years	2500 hours/year	50000 hours	0.9		0.8				0.95	0.68	876 kWh	1	335.74 kg CO2e
C6PEY23K8XT	3000K	80	3302lm	25.6W	20 years	2500 hours/year	50000 hours	0.9			0.9			0.95	0.77	985 kWh	1.1	377.71 kg CO2e
C6PEY23K8XT	3000K	80	3302lm	25.6W	20 years	2500 hours/year	50000 hours	0.9				0.9		0.95	0.77	985 kWh	1.1	377.71 kg CO2e
C6PEY23K8XT	3000K	80	3302lm	25.6W	20 years	2500 hours/year	50000 hours	0.9					0.95	0.95	0.81	1040 kWh	1.2	398.70 kg CO2e
C6PEY23K8XT	3000K	80	3302lm	25.6W	20 years	2500 hours/year	50000 hours		1					0.95	0.95	1216 kWh	1.4	466.31 kg CO2e
C6PEY23K8XT	3000K	80	3302lm	25.6W	20 years	2500 hours/year	50000 hours			0.8				0.95	0.76	973 kWh	1.1	373.05 kg CO2e
C6PEY23K8XT	3000K	80	3302lm	25.6W	20 years	2500 hours/year	50000 hours				0.9			0.95	0.86	1094 kWh	1.3	419.68 kg CO2e
C6PEY23K8XT	3000K	80	3302lm	25.6W	20 years	2500 hours/year	50000 hours					0.9		0.95	0.86	1094 kWh	1.3	419.68 kg CO2e
C6PEY23K8XT	3000K	80	3302lm	25.6W	20 years	2500 hours/year	50000 hours						0.95	0.95	0.9	1155 kWh	1.3	443.00 kg CO2e
C6PEY34K9ST	4000K	90	4135lm	35.7W	20 years	2500 hours/year	50000 hours	0.9	1					0.95	0.86	1526 kWh	1.8	585.26 kg CO2e
C6PEY34K9ST	4000K	90	4135lm	35.7W	20 years	2500 hours/year	50000 hours	0.9		0.8				0.95	0.68	1221 kWh	1.4	468.21 kg CO2e
C6PEY34K9ST	4000K	90	4135lm	35.7W	20 years	2500 hours/year	50000 hours	0.9			0.9			0.95	0.77	1374 kWh	1.6	526.73 kg CO2e
C6PEY34K9ST	4000K	90	4135lm	35.7W	20 years	2500 hours/year	50000 hours	0.9				0.9		0.95	0.77	1374 kWh	1.6	526.73 kg CO2e
C6PEY34K9ST	4000K	90	4135lm	35.7W	20 years	2500 hours/year	50000 hours	0.9					0.95	0.95	0.81	1450 kWh	1.7	555.99 kg CO2e
C6PEY34K9ST	4000K	90	4135lm	35.7W	20 years	2500 hours/year	50000 hours		1					0.95	0.95	1696 kWh	2	650.29 kg CO2e
C6PEY34K9ST	4000K	90	4135lm	35.7W	20 years	2500 hours/year	50000 hours			0.8				0.95	0.76	1357 kWh	1.6	520.23 kg CO2e
C6PEY34K9ST	4000K	90	4135lm	35.7W	20 years	2500 hours/year	50000 hours				0.9			0.95	0.86	1526 kWh	1.8	585.26 kg CO2e
C6PEY34K9ST	4000K	90	4135lm	35.7W	20 years	2500 hours/year	50000 hours					0.9		0.95	0.86	1526 kWh	1.8	585.26 kg CO2e
C6PEY34K9ST	4000K	90	4135lm	35.7W	20 years	2500 hours/year	50000 hours						0.95	0.95	0.9	1611 kWh	1.9	617.77 kg CO2e
C6PEY34K8ST	4000K	80	4127lm	32.6W	20 years	2500 hours/year	50000 hours	0.9	1					0.95	0.86	1394 kWh	1.6	534.44 kg CO2e
C6PEY34K8ST	4000K	80	4127lm	32.6W	20 years	2500 hours/year	50000 hours	0.9		0.8				0.95	0.68	1115 kWh	1.3	427.55 kg CO2e
C6PEY34K8ST	4000K	80	4127lm	32.6W	20 years	2500 hours/year	50000 hours	0.9			0.9			0.95	0.77	1254 kWh	1.4	480.99 kg CO2e
C6PEY34K8ST	4000K	80	4127lm	32.6W	20 years	2500 hours/year	50000 hours	0.9				0.9		0.95	0.77	1254 kWh	1.4	480.99 kg CO2e
C6PEY34K8ST	4000K	80	4127lm	32.6W	20 years	2500 hours/year	50000 hours	0.9					0.95	0.95	0.81	1324 kWh	1.5	507.72 kg CO2e
C6PEY34K8ST	4000K	80	4127lm	32.6W	20 years	2500 hours/year	50000 hours		1					0.95	0.95	1549 kWh	3.7	1218.89 kg CO2e
C6PEY34K8ST	4000K	80	4127lm	32.6W	20 years	2500 hours/year	50000 hours			0.8				0.95	0.76	1239 kWh	1.4	475.06 kg CO2e
C6PEY34K8ST	4000K	80	4127lm	32.6W	20 years	2500 hours/year	50000 hours				0.9			0.95	0.86	1394 kWh	1.6	534.44 kg CO2e
C6PEY34K8ST	4000K	80	4127lm	32.6W	20 years	2500 hours/year	50000 hours					0.9		0.95	0.86	1394 kWh	1.6	534.44 kg CO2e
C6PEY34K8ST	4000K	80	4127lm	32.6W	20 years	2500 hours/year	50000 hours						0.95	0.95	0.9	1471 kWh	1.7	564.13 kg CO2e
C6PEY33K9ST	3000K	90	4092lm	38.6W	20 years	2500 hours/year	50000 hours	0.9	1					0.95	0.86	1650 kWh	1.9	632.80 kg CO2e
C6PEY33K9ST	3000K	90	4092lm	38.6W	20 years	2500 hours/year	50000 hours	0.9		0.8				0.95	0.68	1320 kWh	1.5	506.24 kg CO2e
C6PEY33K9ST	3000K	90	4092lm	38.6W	20 years	2500 hours/year	50000 hours	0.9			0.9			0.95	0.77	1485 kWh	1.7	569.52 kg CO2e
C6PEY33K9ST	3000K	90	4092lm	38.6W	20 years	2500 hours/year	50000 hours	0.9				0.9		0.95	0.77	1485 kWh	1.7	569.52 kg CO2e
C6PEY33K9ST	3000K	90	4092lm	38.6W	20 years	2500 hours/year	50000 hours	0.9					0.95	0.81	1568 kWh	1.8	601.16 kg CO2e	
C6PEY33K9ST	3000K	90	4092lm	38.6W	20 years	2500 hours/year	50000 hours		1					0.95	0.95	1834 kWh	2.1	703.11 kg CO2e
C6PEY33K9ST	3000K	90	4092lm	38.6W	20 years	2500 hours/year	50000 hours			0.8				0.95	0.76	1467 kWh	1.7	562.49 kg CO2e
C6PEY33K9ST	3000K	90	4092lm	38.6W	20 years	2500 hours/year	50000 hours				0.9			0.95	0.86	1650 kWh	1.9	632.80 kg CO2e
C6PEY33K9ST	3000K	90	4092lm	38.6W	20 years	2500 hours/year	50000 hours					0.9		0.95	0.86	1650 kWh	1.9	632.80 kg CO2e

C6PEY33K9ST	3000K	90	4092lm	38.6W	20 years	2500 hours/year	50000 hours							0.95	0.95	0.9	1742 kWh	2	667.96 kg CO2e
C6PEY33K8ST	3000K	80	4062lm	32.1W	20 years	2500 hours/year	50000 hours	0.9	1						0.95	0.86	1372 kWh	1.6	526.24 kg CO2e
C6PEY33K8ST	3000K	80	4062lm	32.1W	20 years	2500 hours/year	50000 hours	0.9		0.8					0.95	0.68	1098 kWh	1.3	420.99 kg CO2e
C6PEY33K8ST	3000K	80	4062lm	32.1W	20 years	2500 hours/year	50000 hours	0.9			0.9				0.95	0.77	1235 kWh	1.4	473.62 kg CO2e
C6PEY33K8ST	3000K	80	4062lm	32.1W	20 years	2500 hours/year	50000 hours	0.9				0.9			0.95	0.77	1235 kWh	1.4	473.62 kg CO2e
C6PEY33K8ST	3000K	80	4062lm	32.1W	20 years	2500 hours/year	50000 hours	0.9						0.95	0.95	0.81	1304 kWh	1.5	499.93 kg CO2e
C6PEY33K8ST	3000K	80	4062lm	32.1W	20 years	2500 hours/year	50000 hours		1						0.95	0.95	1525 kWh	1.8	584.71 kg CO2e
C6PEY33K8ST	3000K	80	4062lm	32.1W	20 years	2500 hours/year	50000 hours			0.8					0.95	0.76	1220 kWh	1.4	467.77 kg CO2e
C6PEY33K8ST	3000K	80	4062lm	32.1W	20 years	2500 hours/year	50000 hours				0.9				0.95	0.86	1372 kWh	1.6	526.24 kg CO2e
C6PEY33K8ST	3000K	80	4062lm	32.1W	20 years	2500 hours/year	50000 hours					0.9			0.95	0.86	1372 kWh	1.6	526.24 kg CO2e
C6PEY33K8ST	3000K	80	4062lm	32.1W	20 years	2500 hours/year	50000 hours						0.95	0.95	0.9	1449 kWh	1.7	555.48 kg CO2e	
C6PEY24K9ST	4000K	90	3332lm	28.5W	20 years	2500 hours/year	50000 hours	0.9	1						0.95	0.86	1218 kWh	1.4	467.22 kg CO2e
C6PEY24K9ST	4000K	90	3332lm	28.5W	20 years	2500 hours/year	50000 hours	0.9		0.8					0.95	0.68	975 kWh	1.1	373.78 kg CO2e
C6PEY24K9ST	4000K	90	3332lm	28.5W	20 years	2500 hours/year	50000 hours	0.9			0.9				0.95	0.77	1097 kWh	1.3	420.50 kg CO2e
C6PEY24K9ST	4000K	90	3332lm	28.5W	20 years	2500 hours/year	50000 hours	0.9				0.9			0.95	0.77	1097 kWh	1.3	420.50 kg CO2e
C6PEY24K9ST	4000K	90	3332lm	28.5W	20 years	2500 hours/year	50000 hours	0.9					0.95	0.95	0.81	1157 kWh	1.3	443.86 kg CO2e	
C6PEY24K9ST	4000K	90	3332lm	28.5W	20 years	2500 hours/year	50000 hours		1						0.95	0.95	1354 kWh	1.6	519.14 kg CO2e
C6PEY24K9ST	4000K	90	3332lm	28.5W	20 years	2500 hours/year	50000 hours			0.8					0.95	0.76	1083 kWh	1.3	415.31 kg CO2e
C6PEY24K9ST	4000K	90	3332lm	28.5W	20 years	2500 hours/year	50000 hours				0.9				0.95	0.86	1218 kWh	1.4	467.22 kg CO2e
C6PEY24K9ST	4000K	90	3332lm	28.5W	20 years	2500 hours/year	50000 hours					0.9			0.95	0.86	1218 kWh	1.4	467.22 kg CO2e
C6PEY24K9ST	4000K	90	3332lm	28.5W	20 years	2500 hours/year	50000 hours						0.95	0.95	0.9	1286 kWh	1.5	493.18 kg CO2e	
C6PEY24K8ST	4000K	80	3316lm	25.3W	20 years	2500 hours/year	50000 hours	0.9	1						0.95	0.86	1082 kWh	1.3	414.76 kg CO2e
C6PEY24K8ST	4000K	80	3316lm	25.3W	20 years	2500 hours/year	50000 hours	0.9		0.8					0.95	0.68	865 kWh	1	331.81 kg CO2e
C6PEY24K8ST	4000K	80	3316lm	25.3W	20 years	2500 hours/year	50000 hours	0.9			0.9				0.95	0.77	973 kWh	1.1	373.29 kg CO2e
C6PEY24K8ST	4000K	80	3316lm	25.3W	20 years	2500 hours/year	50000 hours	0.9				0.9			0.95	0.77	973 kWh	1.1	373.29 kg CO2e
C6PEY24K8ST	4000K	80	3316lm	25.3W	20 years	2500 hours/year	50000 hours	0.9					0.95	0.95	0.81	1027 kWh	1.2	394.02 kg CO2e	
C6PEY24K8ST	4000K	80	3316lm	25.3W	20 years	2500 hours/year	50000 hours		1						0.95	0.95	1202 kWh	1.4	460.85 kg CO2e
C6PEY24K8ST	4000K	80	3316lm	25.3W	20 years	2500 hours/year	50000 hours			0.8					0.95	0.76	961 kWh	1.1	368.68 kg CO2e
C6PEY24K8ST	4000K	80	3316lm	25.3W	20 years	2500 hours/year	50000 hours				0.9				0.95	0.86	1082 kWh	1.3	414.76 kg CO2e
C6PEY24K8ST	4000K	80	3316lm	25.3W	20 years	2500 hours/year	50000 hours					0.9			0.95	0.86	1082 kWh	1.3	414.76 kg CO2e
C6PEY24K8ST	4000K	80	3316lm	25.3W	20 years	2500 hours/year	50000 hours						0.95	0.95	0.9	1142 kWh	1.3	437.80 kg CO2e	
C6PEY23K9ST	3000K	90	3323lm	30.6W	20 years	2500 hours/year	50000 hours	0.9	1						0.95	0.86	1308 kWh	1.5	501.65 kg CO2e
C6PEY23K9ST	3000K	90	3323lm	30.6W	20 years	2500 hours/year	50000 hours	0.9		0.8					0.95	0.68	1047 kWh	1.2	401.32 kg CO2e
C6PEY23K9ST	3000K	90	3323lm	30.6W	20 years	2500 hours/year	50000 hours	0.9			0.9				0.95	0.77	1177 kWh	1.4	451.48 kg CO2e
C6PEY23K9ST	3000K	90	3323lm	30.6W	20 years	2500 hours/year	50000 hours	0.9				0.9			0.95	0.77	1177 kWh	1.4	451.48 kg CO2e
C6PEY23K9ST	3000K	90	3323lm	30.6W	20 years	2500 hours/year	50000 hours	0.9					0.95	0.95	0.81	1243 kWh	1.4	476.57 kg CO2e	
C6PEY23K9ST	3000K	90	3323lm	30.6W	20 years	2500 hours/year	50000 hours		1						0.95	0.95	1454 kWh	1.7	557.39 kg CO2e
C6PEY23K9ST	3000K	90	3323lm	30.6W	20 years	2500 hours/year	50000 hours			0.8					0.95	0.76	1163 kWh	1.3	445.91 kg CO2e
C6PEY23K9ST	3000K	90	3323lm	30.6W	20 years	2500 hours/year	50000 hours				0.9				0.95	0.86	1308 kWh	1.5	501.65 kg CO2e
C6PEY23K9ST	3000K	90	3323lm	30.6W	20 years	2500 hours/year	50000 hours					0.9			0.95	0.86	1308 kWh	1.5	501.65 kg CO2e
C6PEY23K9ST	3000K	90	3323lm	30.6W	20 years	2500 hours/year	50000 hours						0.95	0.95	0.9	1381 kWh	1.6	529.52 kg CO2e	
C6PEY23K8ST	3000K	80	3302lm	25.6W	20 years	2500 hours/year	50000 hours	0.9	1						0.95	0.86	1094 kWh	1.3	419.68 kg CO2e
C6PEY23K8ST	3000K	80	3302lm	25.6W	20 years	2500 hours/year	50000 hours	0.9		0.8					0.95	0.68	876 kWh	1	335.74 kg CO2e
C6PEY23K8ST	3000K	80	3302lm	25.6W	20 years	2500 hours/year	50000 hours	0.9			0.9				0.95	0.77	985 kWh	1.1	377.71 kg CO2e

C6PEY23K8ST	3000K	80	3302lm	25.6W	20 years	2500 hours/year	50000 hours	0.9				0.9		0.95	0.77	985 kWh	1.1	377.71 kg CO2e
C6PEY23K8ST	3000K	80	3302lm	25.6W	20 years	2500 hours/year	50000 hours	0.9					0.95	0.95	0.81	1040 kWh	1.2	398.70 kg CO2e
C6PEY23K8ST	3000K	80	3302lm	25.6W	20 years	2500 hours/year	50000 hours		1					0.95	0.95	1216 kWh	1.4	466.31 kg CO2e
C6PEY23K8ST	3000K	80	3302lm	25.6W	20 years	2500 hours/year	50000 hours			0.8				0.95	0.76	973 kWh	1.1	373.05 kg CO2e
C6PEY23K8ST	3000K	80	3302lm	25.6W	20 years	2500 hours/year	50000 hours				0.9			0.95	0.86	1094 kWh	1.3	419.68 kg CO2e
C6PEY23K8ST	3000K	80	3302lm	25.6W	20 years	2500 hours/year	50000 hours					0.9		0.95	0.86	1094 kWh	1.3	419.68 kg CO2e
C6PEY23K8ST	3000K	80	3302lm	25.6W	20 years	2500 hours/year	50000 hours						0.95	0.95	0.9	1155 kWh	1.3	443.00 kg CO2e
C12PEY34K9	4000K	90	4140lm	34.7W	20 years	2500 hours/year	50000 hours	0.9	1					0.95	0.86	1483 kWh	1.7	568.86 kg CO2e
C12PEY34K9	4000K	90	4140lm	34.7W	20 years	2500 hours/year	50000 hours	0.9		0.8				0.95	0.68	1187 kWh	1.4	455.09 kg CO2e
C12PEY34K9	4000K	90	4140lm	34.7W	20 years	2500 hours/year	50000 hours	0.9			0.9			0.95	0.77	1335 kWh	1.5	511.98 kg CO2e
C12PEY34K9	4000K	90	4140lm	34.7W	20 years	2500 hours/year	50000 hours	0.9				0.9		0.95	0.77	1335 kWh	1.5	511.98 kg CO2e
C12PEY34K9	4000K	90	4140lm	34.7W	20 years	2500 hours/year	50000 hours	0.9					0.95	0.95	0.81	1409 kWh	1.6	540.42 kg CO2e
C12PEY34K9	4000K	90	4140lm	34.7W	20 years	2500 hours/year	50000 hours		1					0.95	0.95	1648 kWh	1.9	632.07 kg CO2e
C12PEY34K9	4000K	90	4140lm	34.7W	20 years	2500 hours/year	50000 hours			0.8				0.95	0.76	1319 kWh	1.5	505.66 kg CO2e
C12PEY34K9	4000K	90	4140lm	34.7W	20 years	2500 hours/year	50000 hours				0.9			0.95	0.86	1483 kWh	1.7	568.86 kg CO2e
C12PEY34K9	4000K	90	4140lm	34.7W	20 years	2500 hours/year	50000 hours					0.9		0.95	0.86	1483 kWh	1.7	568.86 kg CO2e
C12PEY34K9	4000K	90	4140lm	34.7W	20 years	2500 hours/year	50000 hours						0.95	0.95	0.9	1566 kWh	1.8	600.47 kg CO2e
C12PEY34K8	4000K	80	4132lm	30.8W	20 years	2500 hours/year	50000 hours	0.9	1					0.95	0.86	1317 kWh	1.5	504.93 kg CO2e
C12PEY34K8	4000K	80	4132lm	30.8W	20 years	2500 hours/year	50000 hours	0.9		0.8				0.95	0.68	1053 kWh	1.2	403.94 kg CO2e
C12PEY34K8	4000K	80	4132lm	30.8W	20 years	2500 hours/year	50000 hours	0.9			0.9			0.95	0.77	1185 kWh	1.4	454.44 kg CO2e
C12PEY34K8	4000K	80	4132lm	30.8W	20 years	2500 hours/year	50000 hours	0.9				0.9		0.95	0.77	1185 kWh	1.4	454.44 kg CO2e
C12PEY34K8	4000K	80	4132lm	30.8W	20 years	2500 hours/year	50000 hours	0.9					0.95	0.95	0.81	1251 kWh	1.4	479.68 kg CO2e
C12PEY34K8	4000K	80	4132lm	30.8W	20 years	2500 hours/year	50000 hours		1					0.95	0.95	1463 kWh	1.7	561.03 kg CO2e
C12PEY34K8	4000K	80	4132lm	30.8W	20 years	2500 hours/year	50000 hours			0.8				0.95	0.76	1170 kWh	1.4	448.83 kg CO2e
C12PEY34K8	4000K	80	4132lm	30.8W	20 years	2500 hours/year	50000 hours				0.9			0.95	0.86	1317 kWh	1.5	504.93 kg CO2e
C12PEY34K8	4000K	80	4132lm	30.8W	20 years	2500 hours/year	50000 hours					0.9		0.95	0.86	1317 kWh	1.5	504.93 kg CO2e
C12PEY34K8	4000K	80	4132lm	30.8W	20 years	2500 hours/year	50000 hours						0.95	0.95	0.9	1390 kWh	1.6	532.98 kg CO2e
C12PEY33K9	4000K	90	4099lm	36.8W	20 years	2500 hours/year	50000 hours	0.9	1					0.95	0.86	1573 kWh	1.8	603.29 kg CO2e
C12PEY33K9	4000K	90	4099lm	36.8W	20 years	2500 hours/year	50000 hours	0.9		0.8				0.95	0.68	1259 kWh	1.5	482.63 kg CO2e
C12PEY33K9	4000K	90	4099lm	36.8W	20 years	2500 hours/year	50000 hours	0.9			0.9			0.95	0.77	1416 kWh	1.6	542.96 kg CO2e
C12PEY33K9	4000K	90	4099lm	36.8W	20 years	2500 hours/year	50000 hours	0.9				0.9		0.95	0.77	1416 kWh	1.6	542.96 kg CO2e
C12PEY33K9	4000K	90	4099lm	36.8W	20 years	2500 hours/year	50000 hours	0.9					0.95	0.95	0.81	1495 kWh	1.7	573.13 kg CO2e
C12PEY33K9	4000K	90	4099lm	36.8W	20 years	2500 hours/year	50000 hours		1					0.95	0.95	1748 kWh	2	670.32 kg CO2e
C12PEY33K9	4000K	90	4099lm	36.8W	20 years	2500 hours/year	50000 hours			0.8				0.95	0.76	1398 kWh	1.6	536.26 kg CO2e
C12PEY33K9	4000K	90	4099lm	36.8W	20 years	2500 hours/year	50000 hours				0.9			0.95	0.86	1573 kWh	1.8	603.29 kg CO2e
C12PEY33K9	4000K	90	4099lm	36.8W	20 years	2500 hours/year	50000 hours					0.9		0.95	0.86	1573 kWh	1.8	603.29 kg CO2e
C12PEY33K9	4000K	90	4099lm	36.8W	20 years	2500 hours/year	50000 hours						0.95	0.95	0.9	1661 kWh	1.9	636.81 kg CO2e
C12PEY33K8	4000K	80	4121lm	31.4W	20 years	2500 hours/year	50000 hours	0.9	1					0.95	0.86	1342 kWh	1.6	514.76 kg CO2e
C12PEY33K8	4000K	80	4121lm	31.4W	20 years	2500 hours/year	50000 hours	0.9		0.8				0.95	0.68	1074 kWh	1.2	411.81 kg CO2e
C12PEY33K8	4000K	80	4121lm	31.4W	20 years	2500 hours/year	50000 hours	0.9			0.9			0.95	0.77	1208 kWh	1.4	463.29 kg CO2e
C12PEY33K8	4000K	80	4121lm	31.4W	20 years	2500 hours/year	50000 hours	0.9				0.9		0.95	0.77	1208 kWh	1.4	463.29 kg CO2e
C12PEY33K8	4000K	80	4121lm	31.4W	20 years	2500 hours/year	50000 hours	0.9					0.95	0.95	0.81	1275 kWh	1.5	489.03 kg CO2e
C12PEY33K8	4000K	80	4121lm	31.4W	20 years	2500 hours/year	50000 hours		1					0.95	0.95	1492 kWh	1.7	571.96 kg CO2e
C12PEY33K8	4000K	80	4121lm	31.4W	20 years	2500 hours/year	50000 hours			0.8				0.95	0.76	1193 kWh	1.4	457.57 kg CO2e

C12PEY33K8	4000K	80	4121lm	31.4W	20 years	2500 hours/year	50000 hours					0.9			0.95	0.86	1342 kWh	1.6	514.76 kg CO2e
C12PEY33K8	4000K	80	4121lm	31.4W	20 years	2500 hours/year	50000 hours						0.9		0.95	0.86	1342 kWh	1.6	514.76 kg CO2e
C12PEY33K8	4000K	80	4121lm	31.4W	20 years	2500 hours/year	50000 hours							0.95	0.95	0.9	1417 kWh	1.6	543.36 kg CO2e
C12PEY24K9	4000K	90	3296lm	27.1W	20 years	2500 hours/year	50000 hours	0.9	1						0.95	0.86	1159 kWh	1.3	444.27 kg CO2e
C12PEY24K9	4000K	90	3296lm	27.1W	20 years	2500 hours/year	50000 hours	0.9			0.8				0.95	0.68	927 kWh	1.1	355.42 kg CO2e
C12PEY24K9	4000K	90	3296lm	27.1W	20 years	2500 hours/year	50000 hours	0.9				0.9			0.95	0.77	1043 kWh	1.2	399.84 kg CO2e
C12PEY24K9	4000K	90	3296lm	27.1W	20 years	2500 hours/year	50000 hours	0.9					0.9		0.95	0.77	1043 kWh	1.2	399.84 kg CO2e
C12PEY24K9	4000K	90	3296lm	27.1W	20 years	2500 hours/year	50000 hours	0.9						0.95	0.95	0.81	1101 kWh	1.3	422.06 kg CO2e
C12PEY24K9	4000K	90	3296lm	27.1W	20 years	2500 hours/year	50000 hours		1						0.95	0.95	1287 kWh	1.5	493.63 kg CO2e
C12PEY24K9	4000K	90	3296lm	27.1W	20 years	2500 hours/year	50000 hours				0.8				0.95	0.76	1030 kWh	1.2	394.91 kg CO2e
C12PEY24K9	4000K	90	3296lm	27.1W	20 years	2500 hours/year	50000 hours					0.9			0.95	0.86	1159 kWh	1.3	444.27 kg CO2e
C12PEY24K9	4000K	90	3296lm	27.1W	20 years	2500 hours/year	50000 hours						0.9		0.95	0.86	1159 kWh	1.3	444.27 kg CO2e
C12PEY24K9	4000K	90	3296lm	27.1W	20 years	2500 hours/year	50000 hours							0.95	0.95	0.9	1223 kWh	1.4	468.95 kg CO2e
C12PEY24K8	4000K	80	3356lm	24.6W	20 years	2500 hours/year	50000 hours	0.9	1						0.95	0.86	1052 kWh	1.2	403.29 kg CO2e
C12PEY24K8	4000K	80	3356lm	24.6W	20 years	2500 hours/year	#####	0.9			0.8				0.95	0.68	841 kWh	1	322.63 kg CO2e
C12PEY24K8	4000K	80	3356lm	24.6W	20 years	2500 hours/year	50000 hours	0.9				0.9			0.95	0.77	946 kWh	1.1	362.96 kg CO2e
C12PEY24K8	4000K	80	3356lm	24.6W	20 years	2500 hours/year	50000 hours	0.9					0.9		0.95	0.77	946 kWh	1.1	362.96 kg CO2e
C12PEY24K8	4000K	80	3356lm	24.6W	20 years	2500 hours/year	50000 hours	0.9						0.95	0.95	0.81	999 kWh	1.2	383.12 kg CO2e
C12PEY24K8	4000K	80	3356lm	24.6W	20 years	2500 hours/year	50000 hours		1						0.95	0.95	1169 kWh	1.4	448.10 kg CO2e
C12PEY24K8	4000K	80	3356lm	24.6W	20 years	2500 hours/year	50000 hours				0.8				0.95	0.76	935 kWh	1.1	358.48 kg CO2e
C12PEY24K8	4000K	80	3356lm	24.6W	20 years	2500 hours/year	50000 hours					0.9			0.95	0.86	1052 kWh	1.2	403.29 kg CO2e
C12PEY24K8	4000K	80	3356lm	24.6W	20 years	2500 hours/year	50000 hours							0.9	0.95	0.86	1052 kWh	1.2	403.29 kg CO2e
C12PEY24K8	4000K	80	3356lm	24.6W	20 years	2500 hours/year	50000 hours							0.95	0.95	0.9	1110 kWh	1.3	425.69 kg CO2e
C12PEY23K9	4000K	90	3313lm	29.1W	20 years	2500 hours/year	50000 hours	0.9	1						0.95	0.86	1244 kWh	1.4	477.06 kg CO2e
C12PEY23K9	4000K	90	3313lm	29.1W	20 years	2500 hours/year	50000 hours	0.9			0.8				0.95	0.68	995 kWh	1.2	381.65 kg CO2e
C12PEY23K9	4000K	90	3313lm	29.1W	20 years	2500 hours/year	50000 hours	0.9				0.9			0.95	0.77	1120 kWh	1.3	429.35 kg CO2e
C12PEY23K9	4000K	90	3313lm	29.1W	20 years	2500 hours/year	50000 hours	0.9					0.9		0.95	0.77	1120 kWh	1.3	429.35 kg CO2e
C12PEY23K9	4000K	90	3313lm	29.1W	20 years	2500 hours/year	50000 hours	0.9						0.95	0.95	0.81	1182 kWh	1.4	453.21 kg CO2e
C12PEY23K9	4000K	90	3313lm	29.1W	20 years	2500 hours/year	50000 hours		1						0.95	0.95	1382 kWh	1.6	530.07 kg CO2e
C12PEY23K9	4000K	90	3313lm	29.1W	20 years	2500 hours/year	50000 hours				0.8				0.95	0.76	1106 kWh	1.3	424.05 kg CO2e
C12PEY23K9	4000K	90	3313lm	29.1W	20 years	2500 hours/year	50000 hours					0.9			0.95	0.86	1244 kWh	1.4	477.06 kg CO2e
C12PEY23K9	4000K	90	3313lm	29.1W	20 years	2500 hours/year	50000 hours						0.9		0.95	0.86	1244 kWh	1.4	477.06 kg CO2e
C12PEY23K9	4000K	90	3313lm	29.1W	20 years	2500 hours/year	50000 hours							0.95	0.95	0.9	1313 kWh	1.5	503.56 kg CO2e
C12PEY23K8	4000K	80	3343lm	25.0W	20 years	2500 hours/year	50000 hours	0.9	1						0.95	0.86	1069 kWh	2.5	841.26 kg CO2e
C12PEY23K8	4000K	80	3343lm	25.0W	20 years	2500 hours/year	50000 hours	0.9			0.8				0.95	0.68	855 kWh	2	673.01 kg CO2e
C12PEY23K8	4000K	80	3343lm	25.0W	20 years	2500 hours/year	50000 hours	0.9				0.9			0.95	0.77	962 kWh	1.1	368.86 kg CO2e
C12PEY23K8	4000K	80	3343lm	25.0W	20 years	2500 hours/year	50000 hours	0.9					0.9		0.95	0.77	962 kWh	1.1	368.86 kg CO2e
C12PEY23K8	4000K	80	3343lm	25.0W	20 years	2500 hours/year	50000 hours	0.9						0.95	0.95	0.81	1015 kWh	1.2	389.35 kg CO2e
C12PEY23K8	4000K	80	3343lm	25.0W	20 years	2500 hours/year	50000 hours		1						0.95	0.95	1188 kWh	2.8	934.73 kg CO2e
C12PEY23K8	4000K	80	3343lm	25.0W	20 years	2500 hours/year	50000 hours				0.8				0.95	0.76	950 kWh	1.1	364.31 kg CO2e
C12PEY23K8	4000K	80	3343lm	25.0W	20 years	2500 hours/year	50000 hours					0.9			0.95	0.86	1069 kWh	1.2	409.84 kg CO2e
C12PEY23K8	4000K	80	3343lm	25.0W	20 years	2500 hours/year	50000 hours						0.9		0.95	0.86	1069 kWh	1.2	409.84 kg CO2e
C12PEY23K8	4000K	80	3343lm	25.0W	20 years	2500 hours/year	50000 hours							0.95	0.95	0.9	1128 kWh	1.3	432.61 kg CO2e

TABLE 1.2

This table refers to non-linearly scaling options within range. Reported A1-A3 GWP was calculated separately. Product specific energy consumption differences values are stated in table 1.1

Product				Dimensions				A1	A2	A3	A1-A3	
Ceiling Type	Part Code	Colour temperature	CRI	Driver Type	Length	Width	Height	Weight	GWP – total			
Exposed Tee	C6PEY24K8XT	4000K	Ra80	DALI LED Driver	584mm	584mm	69mm	4.04kg	22.40 kg CO2e	0.17 kg CO2e	3.85 kg CO2e	26.50 kg CO2e
	C6PEY34K8XT	4000K	Ra80									
	C6PEY23K8XT	3000K	Ra80									
	C6PEY33K8XT	3000K	Ra80									
	C6PEY24K9XT	4000K	Ra90									
	C6PEY34K9XT	4000K	Ra90									
	C6PEY23K9XT	3000K	Ra90									
	C6PEY33K9XT	3000K	Ra90									
Spring Tee	C6PEY24K8ST	4000K	Ra80	DALI LED Driver	599mm	599mm	83mm	4.44kg	23.59 kg CO2e	0.18 kg CO2e	3.86 kg CO2e	27.63 kg CO2e
	C6PEY34K8ST	4000K	Ra80									
	C6PEY23K8ST	3000K	Ra80									
	C6PEY33K8ST	3000K	Ra80									
	C6PEY24K9ST	4000K	Ra90									
	C6PEY34K9ST	4000K	Ra90									
	C6PEY23K9ST	3000K	Ra90									
	C6PEY33K9ST	3000K	Ra90									
SAS 330	C12PEY24K8	4000K	Ra80	DALI LED Driver	1194mm	297mm	68mm	5.89kg	37.30 kg CO2e	0.28 kg CO2e	5.46 kg CO2e	43.03 kg CO2e
	C12PEY34K8	4000K	Ra80									
	C12PEY23K8	3000K	Ra80									
	C12PEY33K8	3000K	Ra80									
	C12PEY24K9	4000K	Ra90									
	C12PEY34K9	4000K	Ra90									
	C12PEY23K9	3000K	Ra90									
	C12PEY33K9	3000K	Ra90									

TABLE 1.3

PEP ecopassport program (PSR-0014-ed1.0-EN-2018 07 18) requires unified functional unit for all lighting fittings published with their program. (“Lighting that delivers an outgoing artificial luminous flux of 1,000 lumens during a reference lifetime of 35,000 hours)

To achieve results compatibility while using PEP ecopassport or comparing product published by them, calculations of environmental impacts of the manufacturing, distribution, installation, use and end-of-life stages needs to be carried as follows for each life cycle stages (PSR-0014-ed1.0-EN-2018 07 18):

Environmental impact of PEP (for 1,000 lumens over 35,000 hours) = Environmental impact of the reference product x Scaling factor

Where

Scaling Factor = (1,000 / Outgoing luminous flux of the reference product in lumens) x (35,000 / Assigned product lifetime of the reference product in hours)

Reference product					Ecopassport functional unit				Energy use		Scaling Factor
Part Number	Colour temperature	CRI	Reference Product Lumens	Product efficacy	Luminous Flux	reduced Wattage	% of actual luminaire output	Total working hours	Controls Factor	Energy Usage (1,000lm 35,000h)	Scaling factor
C6PEY34K9XT/C6PEY34K9ST	4000K	90	4135lm	115.83 lm/W	1000lm	8.6W	24%	35000 hours	0.68	205.48 kWh	0.17
C6PEY34K8XT/C6PEY34K8ST	4000K	80	4127lm	126.60 lm/W	1000lm	7.9W	24%	35000 hours	0.68	188.00 kWh	0.17
C6PEY33K9XT/C6PEY33K9ST	3000K	90	4092lm	106.01 lm/W	1000lm	9.4W	24%	35000 hours	0.68	224.51 kWh	0.17
C6PEY33K8XT/C6PEY33K8ST	3000K	80	4062lm	126.54 lm/W	1000lm	7.9W	25%	35000 hours	0.68	188.08 kWh	0.17
C6PEY24K9XT/C6PEY24K9ST	4000K	90	3332lm	116.91 lm/W	1000lm	8.6W	30%	35000 hours	0.68	203.57 kWh	0.21
C6PEY24K8XT/C6PEY24K8ST	4000K	80	3316lm	131.07 lm/W	1000lm	7.6W	30%	35000 hours	0.68	181.59 kWh	0.21
C6PEY23K9XT/C6PEY23K9ST	3000K	90	3323lm	108.59 lm/W	1000lm	9.2W	30%	35000 hours	0.68	219.16 kWh	0.21
C6PEY23K8XT/C6PEY23K8ST	3000K	80	3302lm	128.98 lm/W	1000lm	7.8W	30%	35000 hours	0.68	184.52 kWh	0.21
C12PEY34K9	4000K	90	4140lm	119.31 lm/W	1000lm	8.4W	24%	35000 hours	0.68	199.48 kWh	0.17
C12PEY34K8	4000K	80	4132lm	134.16 lm/W	1000lm	7.5W	24%	35000 hours	0.68	177.41 kWh	0.17
C12PEY33K9	4000K	90	4099lm	111.39 lm/W	1000lm	9.0W	24%	35000 hours	0.68	213.67 kWh	0.17
C12PEY33K8	4000K	80	4121lm	131.24 lm/W	1000lm	7.6W	24%	35000 hours	0.68	181.34 kWh	0.17
C12PEY24K9	4000K	90	3296lm	121.62 lm/W	1000lm	8.2W	30%	35000 hours	0.68	195.69 kWh	0.21
C12PEY24K8	4000K	80	3356lm	136.42 lm/W	1000lm	7.3W	30%	35000 hours	0.68	174.46 kWh	0.21
C12PEY23K9	4000K	90	3313lm	113.85 lm/W	1000lm	8.8W	30%	35000 hours	0.68	209.05 kWh	0.21
C12PEY23K8	4000K	80	3343lm	133.72 lm/W	1000lm	7.5W	30%	35000 hours	0.68	177.98 kWh	0.21