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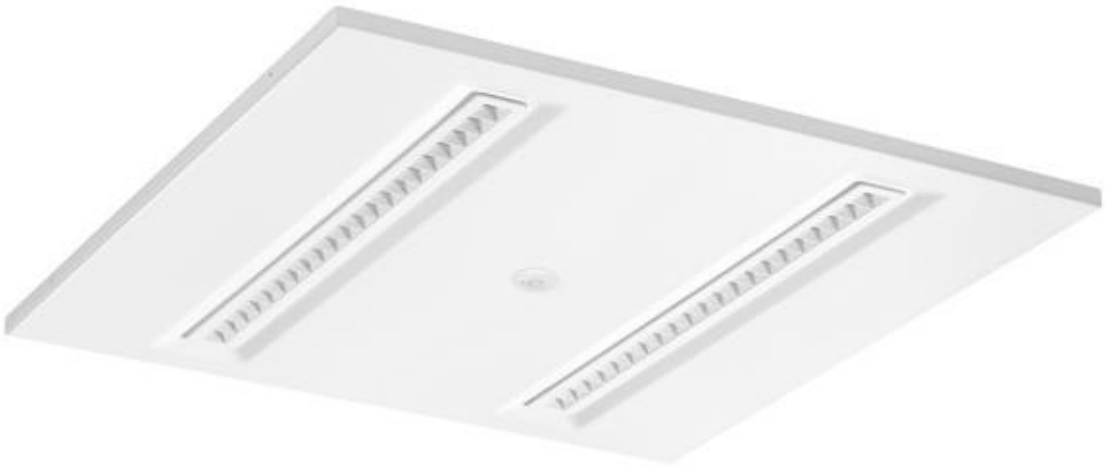
Environmental Product Declaration

Independent verification of the declaration and data in compliance with ISO 14025: 2006



SYLVANIA Opticlip Family

Registration number	SYLV-00003-V01.01-EN	Drafting rules	PEP-PCR–ED4-EN-2021 09 06
Verifier accreditation number	VH44	Supplemented by	PSR-0014-ed2.0-EN-2023 07 13
Date of issue	12.2024	Information and reference documents	www.pep-ecopassport.org
EPD prepared by	Feilo Sylvania International Group Kft.	Validity period	5 years
Independent verification of the declaration and data in compliance with ISO 14025: 2006			
Internal		External	X
The PCR review was conducted by a panel of experts chaired by Julie Orgelet (DDemain)			
PEPs are compliant with XP C08-100-1:2016 and EN 50693:2019 or NF E38-500:2022			
The components of the present PEP may not be compared with components from any other program.			
Document complies with ISO 14025 : 2006 « Environmental labels and declarations. Type III environmental declarations»			

1. General information

1.1 Product information

The SYLVANIA Opticlip family is a high efficiency and low glare luminaire with replaceable light engines set flat on the surface of the fixture, connected with a plug & play cable to the driver and ready for office and education applications. Ceiling recessed LED luminaire with white coloure plastic optic and direct light distribution. The SYLVANIA Opticlip family have a lifespan of 100.000 hrs (made by L70B50) and a 5 year warranty.
The Sylvania Opticlip family is available in:

- Non dimmable
- DALI (DA)
- SSA
- SSC

The Sylvania Opticlip family includes Standard, High Efficiency, UGR<17, IP40/20, CRI>80, DALI, SylSmart Connected and SylSmart Standalone enabled luminaires in different sizes of:
600x600mm, 625x625mm, 1200x300mm and 1250x310mm.
The SSC – SylSmart Standalone – is a wireless, plug and play lighting control solution, which delivers maximum control and minimum installation for smaller applications. SylSmart Connected system, the SSA, provides a ready-to-go, open standard, luminaire integrated control system for floor-wide and building-wide use. Both SylSmart versions enabled greater energy savings.

Applicable ETIM classification rating for the Sylvania Opticlip family

- EC002892

Additional – not standard – accessories are ceiling mounted, suspended, or recessed in plasterboard by clips for usage in different applications.

The Sylvania Opticlip family is clustered by the following main technical features:

- Non dimmable: Without dimming function, only power on and off.
- DALI (DA): Work with DALI lighting management system.
- SSA: Work with PIR sensor which can be connected to Sylvania wireless lighting management system Sylsmart Connect (Silvair).
- SSC: Work with Sylvania wireless lighting management system Sylsmart standalone (Casambi).

The technological key data of the Sylvania Opticlip reference product "0044003 - SYLVANIA OPTICLIP 600 4000K C8 WH SSA02 WHITE "are listed below:

Table 1: Key technological data of reference product

Information	Unit	Data
Product code	-	0044003
Light source	-	Pcb_Ln_49.2*3.9_4080
Power supply	-	OTI DX 50/220...240/1A4 NFC
Colour temperature	Kelvin	4.000
Protection index for water and dust (IP)	-	40 / 20
Impact resistance index (IK)	-	07
Nominal operating voltage	Volt	220 - 240
Declared lifetime of the luminaire (L70B50)	Hours	100.000
Declaration lifetime of the light source	Hours	100.000
Useful output flux	Lumen	3.300
Total power consumption	Watt	27
Luminous efficiency	Lumen / Watt	122
Length	mm	595

Information	Unit	Data
Width/Diameter	mm	595
Height	mm	44
Reference use scenario	-	Office & Education

In the reference scenario, the product has 2,500 annual operating hours, resulting in a lifetime of 40 years.

1.2 Overview

The general information used for the EPD are listed below:

Table 2: Basic EPD information

Information	
Functional unit	Provide lighting that delivers an outgoing artificial luminous flux of 1,000 lumens during a reference lifetime of 35,000 hours
Reference flow / declared unit*	0.1061 pieces of product
Life cycle stages cover (according to EN15804+A2)	Cradle-to-grave and Module D
Product category according to PSR	Luminaires
Product family name (if family EPD)	Sylvania Opticlip
All products of the product family (if family EPD)	Table 19 - Table 22
Extrapolation rules (if family EPD)	Table 23 - Table 26

* The reference flow has a luminous flux of 3.300 lumen and a reference lifetime of 100.000 hours (2500 hours annually for 40 years). The reference flow is calculated as:

(1,000/outgoing luminous flux of the analyzed product in lumens) x (35,000/declared product lifetime of the analyzed product in hours)

Consequently, the reference flow of the following product corresponds to:

(1 000/3 300) x (35 000/100 000) = 0.1061

2 Constituent materials

2.1 Overview

Table 3 shows the overview of the product composition of the reference product; in particular the weight per product and -per functional unit, plus the overall share.

Table 3: Product composition

Information	Weight [kg] / product	Weight [kg] / functional unit	Share [in %]
Total weight	3,798	0,4028	100
Product	2,981	0,3162	78,49
Packaging	0,817	0,0867	21,51
Additional equipment	0	0	0

Note: The weight per product and – per packaging in this table differs slightly from the total weight of the product due to rounding inaccuracies

2.2 Product

The material composition for the reference product – per se – is summarized in the following table:

Table 4: Material composition - Product

Information	Weight [kg] / product	Weight [kg] / functional unit	Share [in %]
Total weight	2,981	0,3162	100
Metals	2,328	0,2469	78,08
Plastics	0,002	0,0002	0,067
Electronics (incl. wires)	0,6475	0,0687	21,72
Carton / Paper	0,004	0,0004	0,134

Note: The total weight in this table differs slightly from the total weight of the product due to rounding inaccuracies.

2.3 Packaging

The material composition for the packaging of the reference product is summarized in the following table:

Table 5: Material composition - packaging

Information	Weight [kg] / product	Weight [kg] / functional unit	Share [in %]
Total weight	0,817	0,0867	100
Paper/cardboard	0,764	0,081	93,513
Plastics	0,035	0,0037	4,284
Wood	0,018	0,0019	2,202

Note: The total weight in this table differs slightly from the total weight of the product due to rounding inaccuracies.

3 Information on life cycle stages

3.1 Manufacturing (A1-A3)

Most of the product components are produced by the suppliers of Feilo Sylvania GmbH. A major share of the electronic parts are sourced from China followed by Bulgaria (Driver).
At the site of Feilo Sylvania in Saint-Etienne (France), the metallic part is manufactured, painted and then, all parts are assembled, labelled, and tested, before the product is packed for transportation to the customers.
Feilo Sylvania in Saint-Etienne is also certified to ISO 9001:2015 and 14001:2015.
Metal, plastic, carton/paper scraps of the production site is recycled, whereas other waste streams (wood, polymer components and some electronic parts) are considered as waste for incineration with energy recovery. The energy model used in manufacturing is based on Sphera's Managed LCA Content V.10:
FR: Electricity grid mix Sphera (database 2023.2)

3.2 Distribution (A4)

The main market of the product is Europe. For this reason, an intracontinental transport following PEP-PCR–ed4-EN-2021 09 06 is considered 3 500 km by truck (diesel driven, EURO 0-6, >27t payload).
The background assumptions for the transportation are listed below.

Table 6: Background information distribution

Information	Unit	Truck	Ship
Fuel type	-	Diesel	
Fuel consumption	l/(kg*km)	1.99E-05	
Total distance	km	3 500	
Capacity utilisation (including empty runs)	%	85	

3.3 Installation (A5)

The product can easily be installed with hooks and tool free. No energy or material input is required.
Packaging waste is recovered refer to chapter 3.5.3.1 of PSR-0014-ed2.0-EN-2023 07 13.

3.4 Use stage (B1-B7)

During the use stage of the product, the product only consumes electricity (B6). The main market of the product is Europe. Consequently, an average European electricity grid mix (database from Sphera) has been used for the calculations.
According to PSR-0014-ed2.0-EN-2023 07 13, the theoretical energy saving coefficients for the 4 series of SYLVANIA Opticlip family are:

- Non dimmable: 1,0
- DALI (DA): 0,5
- SSA: 0,5
- SSC: 0,5

The SYLVANIA Opticlip reference product 0044003 is grouped under SSA series and is capable to be connected to Sylvania wireless lighting management system SylSmart Connect. Therefore, the theoretical energy saving coefficient of the reference product is 0,5.
The declared power consumption of the reference product is 27 Watts and its assigned lifetime is 100.000 hours (L70/B50).

Combining all these information leads to a total power draw of 1350 kWh

All other modules of the life cycle stage have no environmental impact, since the product has no direct emissions (B1), no maintenance (B2), and no replacement (B4), no standard repairs (B3), or refurbishment activities (B5). The luminaire does not consume water during its use (B7).

3.5 End of life (C1-C4)

The product falls under the "Waste from Electrical and Electronic Equipment" (WEEE) directive 2012/19/EU subcategory 4. Primary data regarding the recycling quote of the product have been used. The share of the different end-of-life pathways are shown below and represent a European average.

- Incineration with energy recovery: 20.80 %
- Landfilling: 16.62 %
- Recycling: 62.57 %

3.6 Benefits and loads beyond the system boundaries stage (D)

Incineration with energy recovery and recycling of the product, packaging, and manufacturing scrap generate environmental benefits by avoiding the production of primary materials or energy. The amount and type of waste streams are listed in Table 7.

Table 7: Material flows for benefits and loads beyond the system boundaries.

Information	Unit	Value
Total weight going into re-use	kg/functional unit	0
Total weight going into recycling	kg/functional unit	0.2852
- Share from product	%	69.2
- Share from manufacturing scrap	%	24.0
- Share from upstream packaging & manufacturing scrap	%	6.7
Total weight going into incineration with energy recovery	kg/functional unit	0.0763
- Share from product	%	86.1
- Share from packaging	%	11.4
- Share from upstream packaging & manufacturing scrap	%	2.5

4 Environmental impacts

4.1 Introduction

The following table summarizes the key information for the calculation of the environmental impacts:

Table 8: Basic information LCA model

Information	Value
Used LCA software	GaBi 10
Used LCI database	LCA Managed Content Professional 2023.2 + Extension 2023.2
PCR version	PSR-0014-ed2.0-EN-2023 07 13
Functional unit	Provide lighting that delivers an outgoing artificial luminous flux of 1,000 lumens during a reference lifetime of 35,000 hours

4.2 Results per functional unit

The following results of the environmental declaration have been developed by considering an outgoing artificial luminous flux of 1,000 lumens over a reference lifetime of 35,000 hours. The results refer to the core environmental impact indicators and indicators describing resource use, waste categories, and output flows according to EN 15804:2012+A2:2019.

Table 9: Results core environmental impact indicators per functional unit (0.4028 kg product incl. packaging)

	Total (Excl.D)	Raw materials & parts		Manufacturing	Distribution	Installation	Use			End of life				Benefits and loads beyond the system boundaries
		A1	A2	A3	A4	A5	B1-B5	B6	B7	C1	C2	C3	C4	D
GWP - total [kg CO2 eq.]	4,80E+01	1,53E+00	1,23E-02	2,43E-02	8,94E-02	6,91E-02	0,00E+00	4,66E+01	0,00E+00	0,00E+00	2,00E-02	1,27E-01	2,53E-03	-4,29E-01
GWP - fossil [kg CO2 eq.]	4,77E+01	1,68E+00	1,21E-02	2,41E-02	8,46E-02	3,90E-02	0,00E+00	4,62E+01	0,00E+00	0,00E+00	1,90E-02	1,26E-01	2,52E-03	-5,24E-01
GWP - biogenic [kg CO2 eq.]	3,80E-01	-1,54E-01	2,25E-04	2,51E-04	3,98E-03	3,00E-02	0,00E+00	4,02E-01	0,00E+00	0,00E+00	8,92E-04	7,27E-04	4,97E-06	9,61E-02
GWP - luluc [kg CO2 eq.]	7,03E-03	1,14E-03	4,28E-05	3,32E-06	7,81E-04	1,17E-04	0,00E+00	5,02E-03	0,00E+00	0,00E+00	1,75E-04	1,31E-05	2,52E-06	-2,72E-04
ODP [kg CFC-11 eq.]	8,60E-10	6,06E-12	1,11E-15	1,01E-12	1,10E-14	7,44E-14	0,00E+00	8,52E-10	0,00E+00	0,00E+00	2,46E-15	1,46E-12	4,17E-15	-8,26E-13
AP [Mole of H+ eq.]	1,06E-01	8,45E-03	1,50E-04	5,81E-05	9,83E-05	7,06E-05	0,00E+00	9,87E-02	0,00E+00	0,00E+00	2,20E-05	2,28E-04	8,05E-06	-1,30E-03
EP - freshwater [kg P eq.]	1,81E-04	7,86E-06	1,86E-08	1,30E-07	3,08E-07	1,11E-06	0,00E+00	1,72E-04	0,00E+00	0,00E+00	6,91E-08	3,30E-07	4,38E-08	-1,56E-06
EP - marine [kg N eq.]	2,49E-02	1,43E-03	6,31E-05	1,82E-05	3,29E-05	3,23E-05	0,00E+00	2,36E-02	0,00E+00	0,00E+00	7,38E-06	6,65E-05	2,01E-06	-3,45E-04
EP - terrestrial [Mole of N eq.]	2,61E-01	1,52E-02	6,93E-04	1,77E-04	3,88E-04	2,97E-04	0,00E+00	2,47E-01	0,00E+00	0,00E+00	8,70E-05	7,21E-04	2,21E-05	-3,64E-03
POCP [kg NMVOC eq.]	6,69E-02	4,41E-03	1,72E-04	4,43E-05	8,56E-05	6,88E-05	0,00E+00	6,30E-02	0,00E+00	0,00E+00	1,92E-05	2,35E-04	6,30E-06	-1,13E-03
ADPE [kg Sb eq.]	2,18E-04	2,11E-04	3,74E-10	7,25E-09	5,59E-09	1,60E-08	0,00E+00	7,14E-06	0,00E+00	0,00E+00	1,25E-09	1,41E-08	6,90E-11	-2,98E-08
ADPF [MJ]	9,95E+02	2,23E+01	1,54E-01	2,71E+00	1,15E+00	5,21E-01	0,00E+00	9,72E+02	0,00E+00	0,00E+00	2,58E-01	1,03E+00	3,77E-02	-4,85E+00
WDP [m³ world equiv.]	1,06E+01	2,70E-01	6,81E-05	9,28E-03	1,02E-03	2,63E-03	0,00E+00	1,03E+01	0,00E+00	0,00E+00	2,28E-04	1,13E-02	-3,44E-05	-1,25E-02

Table 10: Results indicators describing resource use, waste categories, and output flows per functional unit (0.4028 kg product incl. packaging)

	Total (Excl.D)	Rawmaterials & parts		Manufacturing	Distribution	Installation	Use			End of life				Benefits and loads beyond the system boundaries
		A1	A2	A3	A4	A5	B1-B5	B6	B7	C1	C2	C3	C4	D
PERE [MJ]	5,88E+02	5,19E+00	4,97E-03	6,69E-01	8,36E-02	1,39E-01	0,00E+00	5,81E+02	0,00E+00	0,00E+00	1,87E-02	7,13E-01	3,39E-03	-2,38E+00
PERM [MJ]	1,50E+00	1,50E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT [MJ]	5,89E+02	6,69E+00	4,97E-03	6,69E-01	8,36E-02	1,39E-01	0,00E+00	5,81E+02	0,00E+00	0,00E+00	1,87E-02	7,13E-01	3,39E-03	-2,38E+00
PENRE [MJ]	1,00E+03	2,15E+01	1,54E-01	2,71E+00	1,15E+00	5,21E-01	0,00E+00	9,72E+02	0,00E+00	0,00E+00	2,59E-01	1,03E+00	3,78E-02	-3,98E+00
PENRM [MJ]	1,01E+00	1,01E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,07E-01
PENRT [MJ]	1,00E+03	2,25E+01	1,54E-01	2,71E+00	1,15E+00	5,21E-01	0,00E+00	9,72E+02	0,00E+00	0,00E+00	2,59E-01	1,03E+00	3,78E-02	-4,88E+00
SM [kg]	3,18E-02	3,18E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,18E-01
RSF [MJ]	7,93E-02	0,00E+00	3,37E-03	0,00E+00	6,17E-02	4,01E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,38E-02	0,00E+00	0,00E+00	0,00E+00
NRSF [MJ]	1,33E+00	0,00E+00	1,36E-01	0,00E+00	9,68E-01	7,27E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,17E-01	0,00E+00	0,00E+00	0,00E+00
FW [m3]	4,82E-01	1,09E-02	5,53E-06	1,11E-03	9,15E-05	5,79E-04	0,00E+00	4,69E-01	0,00E+00	0,00E+00	2,05E-05	5,90E-04	4,21E-07	-9,30E-04
HWD [kg]	8,70E-08	1,45E-07	4,82E-13	-1,07E-10	3,57E-12	1,81E-08	0,00E+00	-7,61E-08	0,00E+00	0,00E+00	8,00E-13	-1,20E-10	3,12E-12	-1,37E-08
NHWD [kg]	8,49E-01	5,79E-02	1,79E-05	8,17E-04	1,76E-04	8,57E-03	0,00E+00	7,12E-01	0,00E+00	0,00E+00	3,94E-05	1,68E-02	5,26E-02	-8,35E-03
RWD [kg]	1,56E-01	5,76E-04	2,25E-07	8,48E-04	2,16E-06	1,26E-05	0,00E+00	1,55E-01	0,00E+00	0,00E+00	4,84E-07	7,53E-05	4,39E-07	-6,20E-05
CRU [kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR [kg]	2,85E-01	1,20E-02	0,00E+00	7,13E-03	0,00E+00	6,85E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,97E-01	0,00E+00	0,00E+00
MER [kg]	7,63E-02	0,00E+00	0,00E+00	1,90E-03	0,00E+00	8,72E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,57E-02	0,00E+00	0,00E+00
EEE [MJ]	1,26E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,02E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,06E-01	0,00E+00	-2,68E-03
EET [MJ]	2,47E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,17E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,06E-01	0,00E+00	-6,20E-03
Biog. C in product [kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Biog. C in packaging [kg]	0,00E+00	-3,58E-02	0,00E+00	0,00E+00	0,00E+00	3,58E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Table 11: Additional environmental impact indicators per functional unit (0.4028 kg product incl. packaging)

	Total (Excl.D)	Raw materials & parts		Manufacturing	Distribution	Installation	Use			End of life				Benefits and loads beyond the system boundaries
		A1	A2	A3	A4	A5	B1-B5	B6	B7	C1	C2	C3	C4	D
PM [Disease in- idences]	9,34E-07	9,49E-08	3,87E-09	4,94E-10	7,16E-10	6,28E-10	0,00E+00	8,30E-07	0,00E+00	0,00E+00	1,61E-10	3,15E-09	8,62E-11	-1,83E-08
IRP [kBq. U235 eq.]	2,60E+01	6,50E-02	3,29E-05	2,17E-01	3,22E-04	2,08E-03	0,00E+00	2,57E+01	0,00E+00	0,00E+00	7,21E-05	7,97E-03	6,50E-05	-7,32E-03
ETP-fw [CTUh]	2,84E+02	1,17E+01	1,09E-01	1,74E-01	8,22E-01	7,45E-02	0,00E+00	2,70E+02	0,00E+00	0,00E+00	1,84E-01	3,36E-01	1,30E-02	-1,04E+00
HTP-c [CTUh]	1,70E-08	2,64E-09	2,08E-12	1,67E-11	1,67E-11	7,58E-12	0,00E+00	1,43E-08	0,00E+00	0,00E+00	3,74E-12	3,49E-11	1,36E-12	-6,59E-10
HTP-nc [CTUh]	2,52E-07	2,02E-08	7,80E-11	1,05E-10	7,43E-10	3,84E-10	0,00E+00	2,28E-07	0,00E+00	0,00E+00	1,67E-10	2,15E-09	1,27E-10	-1,90E-09
SQP [dimensionsless]	4,09E+02	2,52E+01	2,66E-02	2,74E-01	4,80E-01	7,35E-01	0,00E+00	3,81E+02	0,00E+00	0,00E+00	1,08E-01	5,23E-01	3,50E-03	-1,29E+01

4.3 Results per unit of product

The following results of the environmental declaration have been developed by considering the entire life cycle of one product with the technical properties described in Table 1. The results refer to the core environmental impact indicators and indicators describing resource use, waste categories, and output flows according to EN 15804:2012+A2:2019.

Table 12: Results core environmental impact indicators per unit of product

	Total (Excl.D)	Raw materials & parts		Manufacturing	Distribution	Installation	Use			End of life				Benefits and loads beyond the system boundaries
		A1	A2	A3	A4	A5	B1 - B5	B6	B7	C1	C2	C3	C4	D
GWP - total [kg CO2 eq.]	4,53E+02	1,44E+01	1,16E-01	2,29E-01	8,43E-01	6,52E-01	0,00E+00	4,39E+02	0,00E+00	0,00E+00	1,89E-01	1,20E+00	2,39E-02	-4,04E+00
GWP - fossil [kg CO2 eq.]	4,49E+02	1,59E+01	1,14E-01	2,27E-01	7,98E-01	3,68E-01	0,00E+00	4,36E+02	0,00E+00	0,00E+00	1,79E-01	1,19E+00	2,38E-02	-4,94E+00
GWP - biogenic [kg CO2 eq.]	3,58E+00	-1,45E+00	2,12E-03	2,36E-03	3,75E-02	2,83E-01	0,00E+00	3,79E+00	0,00E+00	0,00E+00	8,41E-03	6,85E-03	4,68E-05	9,06E-01
GWP - luluc [kg CO2 eq.]	6,62E-02	1,08E-02	4,04E-04	3,13E-05	7,36E-03	1,11E-03	0,00E+00	4,73E-02	0,00E+00	0,00E+00	1,65E-03	1,24E-04	2,38E-05	-2,56E-03
ODP [kg CFC-11 eq.]	8,11E-09	5,72E-11	1,05E-14	9,49E-12	1,03E-13	7,02E-13	0,00E+00	8,04E-09	0,00E+00	0,00E+00	2,32E-14	1,38E-11	3,93E-14	-7,79E-12
AP [Mole of H+ eq.]	1,00E+00	7,97E-02	1,42E-03	5,48E-04	9,27E-04	6,65E-04	0,00E+00	9,30E-01	0,00E+00	0,00E+00	2,08E-04	2,15E-03	7,59E-05	-1,23E-02
EP - freshwater [kg P eq.]	1,70E-03	7,41E-05	1,75E-07	1,22E-06	2,91E-06	1,04E-05	0,00E+00	1,62E-03	0,00E+00	0,00E+00	6,52E-07	3,11E-06	4,13E-07	-1,47E-05
EP - marine [kg N eq.]	2,35E-01	1,35E-02	5,95E-04	1,71E-04	3,10E-04	3,04E-04	0,00E+00	2,23E-01	0,00E+00	0,00E+00	6,96E-05	6,27E-04	1,89E-05	-3,25E-03
EP - terrestrial [Mole of N eq.]	2,46E+00	1,43E-01	6,53E-03	1,67E-03	3,66E-03	2,80E-03	0,00E+00	2,33E+00	0,00E+00	0,00E+00	8,20E-04	6,79E-03	2,08E-04	-3,44E-02
POCP [kg NMVOC eq.]	6,31E-01	4,16E-02	1,62E-03	4,18E-04	8,07E-04	6,49E-04	0,00E+00	5,94E-01	0,00E+00	0,00E+00	1,81E-04	2,22E-03	5,94E-05	-1,06E-02
ADPE [kg Sb eq.]	2,06E-03	1,99E-03	3,52E-09	6,84E-08	5,27E-08	1,51E-07	0,00E+00	6,74E-05	0,00E+00	0,00E+00	1,18E-08	1,33E-07	6,50E-10	-2,81E-07
ADPF [MJ]	9,38E+03	2,10E+02	1,45E+00	2,55E+01	1,08E+01	4,91E+00	0,00E+00	9,16E+03	0,00E+00	0,00E+00	2,43E+00	9,73E+00	3,56E-01	-4,57E+01
WDP [m^3 world equiv.]	9,97E+01	2,54E+00	6,42E-04	8,75E-02	9,60E-03	2,48E-02	0,00E+00	9,71E+01	0,00E+00	0,00E+00	2,15E-03	1,06E-01	-3,24E-04	-1,18E-01

Table 13: Results indicators describing resource use, waste categories, and output flows per unit of product.

	Total (Excl.D)	Raw materials & parts		Manufacturing	Distribution	Installation	Use			End of life				Benefits and loads beyond the system boundaries
		A1	A2	A3	A4	A5	B1 - B5	B6	B7	C1	C2	C3	C4	D
PERE [MJ]	5,54 E+03	4,89 E+01	4,69 E-02	6,31 E+00	7,88 E-01	1,31 E+00	0,00 E+00	5,48 E+03	0,00 E+00	0,00 E+00	1,77 E-01	6,72 E+00	3,20 E-02	-2,24 E+01
PERM [MJ]	1,41 E+01	1,41 E+01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
PERT [MJ]	5,56 E+03	6,31 E+01	4,69 E-02	6,31 E+00	7,88 E-01	1,31 E+00	0,00 E+00	5,48 E+03	0,00 E+00	0,00 E+00	1,77 E-01	6,72 E+00	3,20 E-02	-2,24 E+01
PENRE [MJ]	9,42 E+03	2,02 E+02	1,45 E+00	2,55 E+01	1,09 E+01	4,92 E+00	0,00 E+00	9,17 E+03	0,00 E+00	0,00 E+00	2,44 E+00	9,73 E+00	3,56 E-01	-3,75 E+01
PENRM [MJ]	9,50 E+00	9,50 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	-8,56 E+00
PENRT [MJ]	9,43 E+03	2,12 E+02	1,45 E+00	2,55 E+01	1,09 E+01	4,92 E+00	0,00 E+00	9,17 E+03	0,00 E+00	0,00 E+00	2,44 E+00	9,73 E+00	3,56 E-01	-4,61 E+01
SM [kg]	3,00 E-01	3,00 E-01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	-2,05 E+00
RSF [MJ]	7,47 E-01	0,00 E+00	3,18 E-02	0,00 E+00	5,81 E-01	3,78 E-03	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	1,30 E-01	0,00 E+00	0,00 E+00	0,00 E+00
NRSF [MJ]	1,25 E+01	0,00 E+00	1,28 E+00	0,00 E+00	9,12 E+00	6,85 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	2,05 E+00	0,00 E+00	0,00 E+00	0,00 E+00
FW [m3]	4,55 E+00	1,02 E-01	5,22 E-05	1,05 E-02	8,63 E-04	5,46 E-03	0,00 E+00	4,42 E+00	0,00 E+00	0,00 E+00	1,94 E-04	5,57 E-03	3,96 E-06	-8,77 E-03
HWD [kg]	8,21 E-07	1,37 E-06	4,55 E-12	-1,01 E-09	3,37 E-11	1,71 E-07	0,00 E+00	-7,17 E-07	0,00 E+00	0,00 E+00	7,55 E-12	-1,13 E-09	2,94 E-11	-1,29 E-07

NHWD [kg]	8,00 E+00	5,46 E-01	1,69 E-04	7,70 E-03	1,66 E-03	8,08 E-02	0,00 E+00	6,71 E+00	0,00 E+00	0,00 E+00	3,72 E-04	1,58 E-01	4,96 E-01	-7,88 E-02
RWD [kg]	1,47 E+00	5,43 E-03	2,12 E-06	8,00 E-03	2,03 E-05	1,19 E-04	0,00 E+00	1,46 E+00	0,00 E+00	0,00 E+00	4,56 E-06	7,10 E-04	4,14 E-06	-5,85 E-04
CRU [kg]	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
MFR [kg]	2,69 E+00	1,13 E-01	0,00 E+00	6,72 E-02	0,00 E+00	6,46 E-01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	1,86 E+00	0,00 E+00	0,00 E+00
MER [kg]	7,20 E-01	0,00 E+00	0,00 E+00	1,80 E-02	0,00 E+00	8,22 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	6,20 E-01	0,00 E+00	0,00 E+00
EEE [MJ]	1,19 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	1,90 E-01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	1,00 E+00	0,00 E+00	-2,52 E-02
EET [MJ]	2,33 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	3,93 E-01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	1,94 E+00	0,00 E+00	-5,85 E-02
Biog. C in product [kg]	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
Biog. C in packaging [kg]	0,00 E+00	-3,38 E-01	0,00 E+00	0,00 E+00	0,00 E+00	3,38 E-01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00

Table 14: Additional environmental impact indicators per unit of product

	Total (ExcLD)	Raw materials & parts		Manufacturing	Distribution	Installation	Use			End of life				Benefits and loads beyond the system boundaries
		A1	A2	A3	A4	A5	B1 - B5	B6	B7	C1	C2	C3	C4	D
PM [Disease in- idences]	8,81 E-06	8,95 E-07	3,65 E-08	4,66 E-09	6,75 E-09	5,92 E-09	0,00 E+00	7,83 E-06	0,00 E+00	0,00 E+00	1,51 E-09	2,97 E-08	8,12 E-10	-1,73 E-07
IRP [kBq. U235 eq.]	2,45 E+02	6,13 E-01	3,10 E-04	2,04 E+00	3,03 E-03	1,96 E-02	0,00 E+00	2,43 E+02	0,00 E+00	0,00 E+00	6,80 E-04	7,51 E-02	6,13 E-04	-6,90 E-02
ETP-fw [CTUh]	2,67 E+03	1,10 E+02	1,03 E+00	1,64 E+00	7,75 E+00	7,03 E-01	0,00 E+00	2,55 E+03	0,00 E+00	0,00 E+00	1,74 E+00	3,17 E+00	1,23 E-01	-9,84 E+00
HTP-c [CTUh]	1,61 E-07	2,49 E-08	1,96 E-11	1,57 E-10	1,57 E-10	7,14 E-11	0,00 E+00	1,35 E-07	0,00 E+00	0,00 E+00	3,53 E-11	3,29 E-10	1,28 E-11	-6,21 E-09
HTP-nc [CTUh]	2,38 E-06	1,91 E-07	7,35 E-10	9,92 E-10	7,00 E-09	3,62 E-09	0,00 E+00	2,15 E-06	0,00 E+00	0,00 E+00	1,57 E-09	2,03 E-08	1,20 E-09	-1,79 E-08
SQP [dimensionsless]	3,85 E+03	2,38 E+02	2,50 E-01	2,58 E+00	4,52 E+00	6,93 E+00	0,00 E+00	3,60 E+03	0,00 E+00	0,00 E+00	1,01 E+00	4,93 E+00	3,30 E-02	-1,22 E+02

4.4 Data comparison

The environmental profile especially for use stage B6 is very sensitive to the region of input electricity which relies on in which country the luminaires are used. Table 16 (calculated for FU) and Table 17 (calculated per product unit) give a comparison for Global Warming Potential GWP total [kg CO2 eq.] of reference product for use stage B6 with electricity used from different countries of Europe. Table 15 shows the scaling factor for GWP total of energy grid mixes for the different countries.

For example:
For the reference model 0044003 multiple GWP total B6 for EU (1.42E+01/functional unit) with Scaling factor for B6 for Belgium (0.599), The GWP total result for B6 for Belgium (2.75E+01) per functional unit can be worked out.
For other concerned models, first step, need to work out the GWP total of B6 for EU per functional unit or unit of product, based on the extrapolation rules provided in chapter 5 of this report, then by the same way provided above, the GWP total of B6 for different countries can be worked out.

Table 15: Scaling factor of use stage for GWP total of energy grid mixes for different countries

Electricity grid	Scaling Factor use stage	Electricity grid	Scaling Factor use stage
EU	1.000	NETHERLANDS	1.403
AUSTRIA	0.821	NORWAY	0.126
BELGIUM	0.599	POLAND	2.771
DENMARK	0.686	PORTUGUAL	1.122
FINLAND	0.606	ROMANIA	1.489
FRANCE	0.250	SPAN	0.972
GERMANY	1.445	SWEDEN	0.139
HUNGARY	1.131	SWITZERLAND	0.390
IRELAND	1.339	UK	0.872
ITALY	1.268		

Table 16: GWP total [kg CO2 eq.] results for B6 for different country per functional unit (0.4028 kg product incl. packaging) only for reference product 0044003

Electricity grid	GWP - total [kg CO2 eq.] B6
EU	1,42E+01
AUSTRIA	1,17E+01
BELGIUM	8,53E+00
DENMARK	9,77E+00
FINLAND	8,63E+00
FRANCE	3,56E+00
GERMANY	2,06E+01
HUNGARY	1,61E+01
IRELAND	1,91E+01
ITALY	1,80E+01
NETHERLANDS	2,00E+01
NORWAY	1,80E+00
POLAND	3,94E+01
POTUGAL	1,60E+01
ROMANIA	2,12E+01
SPAIN	1,38E+01
SWEDEN	1,98E+00
SWITZERLAND	5,55E+00
UK	1,24E+01

Note: The result in this table would be slightly different due to rounding inaccuracies.

Table 17: GWP total [kg CO2 eq.] results for B6 for different country per unit of product for reference product 0044003

Electricity grid	GWP - total [kg CO2 eq.] B6
EU	8,39E+01
AUSTRIA	6,89E+01
BELGIUM	5,02E+01
DENMARK	5,76E+01
FINLAND	5,08E+01
FRANCE	2,10E+01
GERMANY	1,21E+02
HUNGARY	9,49E+01
IRELAND	1,12E+02
ITALY	1,06E+02
NETHERLANDS	1,18E+02
NORWAY	1,06E+01
POLAND	2,32E+02
POTUGAL	9,41E+01
ROMANIA	1,25E+02
SPAIN	8,15E+01
SWEDEN	1,17E+01
SWITZERLAND	3,27E+01
UK	7,32E+01

Note: The result in this table would be slightly different due to rounding inaccuracies.

4.5 Data quality

The underlying LCA model has been developed in Sphera's LCA software LCA for Experts V.10 and with datasets from Sphera's Managed LCA Content. The overall DQR for the representativeness has been calculated as average of the individual ratings according to the PCR respectively the Product Environmental Footprint Guide, version 6.3. Consequently, the overall representativeness is assessed as good (DQR = 2.13). The individual rating for technological, time and geographical representativeness is assessed as good (DQR = 2.43, 1.71 and 2.24).

5 Extrapolation Rules

The extrapolation coefficients included in the PEP Eco-passport have been developed according to the valid PCR & PSR. Table 18 shows the key properties of the reference product, function as extrapolation basis.

Table 18: Reference values for the extrapolations.

Parameter	Unit	Reference value
Weight of structural/ mechanical parts	kg	2.334
Weight of power equipment	kg	0.352
Weight of light source	kg	0.278
Weight of light management system	kg	0.018
Weight of product (excl. packaging)	kg	2.981
Weight of packaging	kg	0.817
Weight of product (incl. packaging)	kg	3.798
Typical power consumption	W	27
Lumen output	lm	3,300
Energy saving coefficient	-	0.5

The extrapolation at the level of the functional unit needs to be done according to the following formula:

$$Extrapolation\ coefficient\ at\ the\ product\ level\ x\ \left(\frac{Lighting\ output\ of\ reference\ product\ (lumen)}{Lighting\ output\ of\ product\ concerned\ (lumen)}\right)$$

Lumen output of each product variant and other important properties are listed in Table 19 - Table 22 below.

Table 19: Information for product family: Non dimmable

Product code	Product name	Power (W)	Lighting output (lm)	Luminaire structure weight (kg)	Product packaging weight (kg)	Control gear weight (kg)	Light source weight (kg)	Light management weight (kg)	Total weight (kg)	Energy saving coefficient
0043000	OptiClip 600 4000K C8 HO WH CC White	33	4150	2,3336	0,8165	0,192	0,278	0	3,62	1
0043002	OptiClip 1200 4000K C8 2L HO WH CC White	34	4500	2,3336	0,8165	0,192	0,278	0	3,62	1
0043004	OptiClip 600 3000K C8 HO WH CC White	33	3925	2,3336	0,8165	0,192	0,278	0	3,62	1
0043006	OptiClip 1200 3000K C8 2L HO WH CC White	34	4250	2,3336	0,8165	0,192	0,278	0	3,62	1
0043008	OptiClip 625 4000K C8 HO WH CC White	33	4150	2,3336	0,8165	0,192	0,278	0	3,62	1
0043010	OptiClip 1250 4000K C8 2L HO WH CC White	34	4500	2,3336	0,8165	0,192	0,278	0	3,62	1
0044000	OptiClip 600 4000K C8 WH CC White	26	3300	2,3336	0,8165	0,192	0,278	0	3,62	1
0044004	OptiClip 1200 4000K C8 WH CC White	24	3100	2,3336	0,8165	0,192	0,278	0	3,62	1
0044008	OptiClip 600 3000K C8 WH CC White	26	3100	2,3336	0,8165	0,192	0,278	0	3,62	1
0044012	OptiClip 1200 3000K C8 WH CC White	26	3100	2,3336	0,8165	0,192	0,278	0	3,62	1
0044016	OptiClip 600 4000K C9 WH CC White	29	3250	2,3336	0,8165	0,192	0,278	0	3,62	1
0044020	OptiClip 1200 4000K C9 WH CC White	29	3250	2,3336	0,8165	0,192	0,278	0	3,62	1
0044024	OptiClip 625 4000K C8 WH CC White	26	3300	2,3336	0,8165	0,192	0,278	0	3,62	1
0044028	OptiClip 1250 4000K C8 WH CC White	24	3100	2,3336	0,8165	0,192	0,278	0	3,62	1

Table 20: Information for product family: DALI (DA)

Product code	Product name	Power (W)	Lighting output (lm)	Luminaire structure weight (kg)	Product packaging weight (kg)	Control gear weight (kg)	Light source weight (kg)	Light management weight (kg)	Total weight (kg)	Energy saving coefficient
0043001	OptiClip 600 4000K C8 HO WH DALI White	33	4150	2,3336	0,8165	0,232	0,278	0	3,66	0,5
0043003	OptiClip 1200 4000K C8 2L HO WH DALI White	34	4500	2,3336	0,8165	0,232	0,278	0	3,66	0,5
0043005	OptiClip 600 3000K C8 HO WH DALI White	33	3925	2,3336	0,8165	0,232	0,278	0	3,66	0,5
0043007	OptiClip 1200 3000K C8 2L HO WH DALI White	34	4250	2,3336	0,8165	0,232	0,278	0	3,66	0,5
0043009	OptiClip 625 4000K C8 HO WH DALI White	33	4150	2,3336	0,8165	0,232	0,278	0	3,66	0,5
0043011	OptiClip 1250 4000K C8 2L HO WH DALI White	34	4500	2,3336	0,8165	0,232	0,278	0	3,66	0,5
0044001	OptiClip 600 4000K C8 WH DALI White	26	3300	2,3336	0,8165	0,232	0,278	0	3,66	0,5
0044005	OptiClip 1200 4000K C8 WH DALI White	24	3100	2,3336	0,8165	0,232	0,278	0	3,66	0,5
0044009	OptiClip 600 3000K C8 WH DALI White	26	3100	2,3336	0,8165	0,232	0,278	0	3,66	0,5
0044013	OptiClip 1200 3000K C8 WH DALI White	26	3100	2,3336	0,8165	0,232	0,278	0	3,66	0,5
0044017	OptiClip 600 4000K C9 WH DALI White	29	3250	2,3336	0,8165	0,232	0,278	0	3,66	0,5
0044021	OptiClip 1200 4000K C9 WH DALI White	29	3250	2,3336	0,8165	0,232	0,278	0	3,66	0,5
0044025	OptiClip 625 4000K C8 WH DALI White	26	3300	2,3336	0,8165	0,232	0,278	0	3,66	0,5
0044029	OptiClip 1250 4000K C8 WH DALI White	24	3100	2,3336	0,8165	0,232	0,278	0	3,66	0,5

Table 21: Information for product family: SSA

Product code	Product name	Power (W)	Lighting output (lm)	Luminaire structure weight (kg)	Product packaging weight (kg)	Control gear weight (kg)	Light source weight (kg)	Light management weight (kg)	Total weight (kg)	Energy saving coefficient
44003 (Reference)	OptiClip 600 4000K C8 WH SSA02 White	27	3300	2,3336	0,8165	0,352	0,278	0,018	3,80	0,5
0044007	OptiClip 1200 4000K C8 WH SSA02 White	25	3100	2,3336	0,8165	0,352	0,278	0,018	3,80	0,5
0044011	OptiClip 600 3000K C8 WH SSA02 White	27	3100	2,3336	0,8165	0,352	0,278	0,018	3,80	0,5
0044015	OptiClip 1200 3000K C8 WH SSA02 White	27	3100	2,3336	0,8165	0,352	0,278	0,018	3,80	0,5
0044019	OptiClip 600 4000K C9 WH SSA02 White	30	3250	2,3336	0,8165	0,352	0,278	0,018	3,80	0,5
0044023	OptiClip 1200 4000K C9 WH SSA02 White	30	3250	2,3336	0,8165	0,352	0,278	0,018	3,80	0,5
0044027	OptiClip 625 4000K C8 WH SSA02 White	27	3300	2,3336	0,8165	0,352	0,278	0,018	3,80	0,5
0044031	OptiClip 1250 4000K C8 WH SSA02 White	25	3100	2,3336	0,8165	0,352	0,278	0,018	3,80	0,5

Table 22: Information for product family: SSC

Product code	Product name	Power (W)	Lighting output (lm)	Luminaire structure weight (kg)	Product packaging weight (kg)	Control gear weight (kg)	Light source weight (kg)	Light management weight (kg)	Total weight (kg)	Energy saving coefficient
0044002	OptiClip 600 4000K C8 WH SSC White	26	3300	2,3336	0,8165	0,265	0,278	0,000	3,69	0,5
0044006	OptiClip 1200 4000K C8 WH SSC White	24	3100	2,3336	0,8165	0,265	0,278	0,000	3,69	0,5
0044010	OptiClip 600 3000K C8 WH SSC White	26	3100	2,3336	0,8165	0,265	0,278	0,000	3,69	0,5
0044014	OptiClip 1200 3000K C8 WH SSC White	26	3100	2,3336	0,8165	0,265	0,278	0,000	3,69	0,5
0044018	OptiClip 600 4000K C9 WH SSC White	29	3250	2,3336	0,8165	0,265	0,278	0,000	3,69	0,5
0044022	OptiClip 1200 4000K C9 WH SSC White	29	3250	2,371	0,8165	0,265	0,278	0,000	3,73	0,5
0044026	OptiClip 625 4000K C8 WH SSC White	26	3300	2,331	0,8165	0,265	0,278	0,000	3,69	0,5
0044030	OptiClip 1250 4000K C8 WH SSC White	24	3100	2,371	0,8165	0,265	0,278	0,000	3,73	0,5

The required extrapolation coefficients at the product level are listed in the following Table 23 - Table 26

Table 23: Extrapolation coefficients at product level for: Non dimmable

Product code	Product name	Power (W)	Manufacturing stage (A1-A3)	Distribution stage (A4)	Installation stage (A5)	Use stage (B6)	EOL stage (C1 to C4)	Benefits stage (D)
0043000	OptiClip 600 4000K C8 HO WH CC White	33	0,95	0,95	0,99	2,44	0,94	0,95
0043002	OptiClip 1200 4000K C8 2L HO WH CC White	34	0,95	0,95	0,99	2,52	0,94	0,95
0043004	OptiClip 600 3000K C8 HO WH CC White	33	0,95	0,95	0,99	2,44	0,94	0,95
0043006	OptiClip 1200 3000K C8 2L HO WH CC White	34	0,95	0,95	0,99	2,52	0,94	0,95
0043008	OptiClip 625 4000K C8 HO WH CC White	33	0,95	0,95	0,99	2,44	0,94	0,95
0043010	OptiClip 1250 4000K C8 2L HO WH CC White	34	0,95	0,95	0,99	2,52	0,94	0,95
0044000	OptiClip 600 4000K C8 WH CC White	26	0,95	0,95	0,99	1,93	0,94	0,95
0044004	OptiClip 1200 4000K C8 WH CC White	24	0,95	0,95	0,99	1,78	0,94	0,95
0044008	OptiClip 600 3000K C8 WH CC White	26	0,95	0,95	0,99	1,93	0,94	0,95
0044012	OptiClip 1200 3000K C8 WH CC White	26	0,95	0,95	0,99	1,93	0,94	0,95
0044016	OptiClip 600 4000K C9 WH CC White	29	0,95	0,95	0,99	2,15	0,94	0,95
0044020	OptiClip 1200 4000K C9 WH CC White	29	0,95	0,95	0,99	2,15	0,94	0,95
0044024	OptiClip 625 4000K C8 WH CC White	26	0,95	0,95	0,99	1,93	0,94	0,95
0044028	OptiClip 1250 4000K C8 WH CC White	24	0,95	0,95	0,99	1,78	0,94	0,95

Table 24: Extrapolation coefficients at product level for: DALI (DA)

Product code	Product name	Power (W)	Manufacturing stage (A1-A3)	Distribution stage (A4)	Installation stage (A5)	Use stage (B6)	EOL stage (C1 to C4)	Benefits stage (D)
0043001	OptiClip 600 4000K C8 HO WH DALI White	33	0,96	0,96	0,99	1,22	0,95	0,96
0043003	OptiClip 1200 4000K C8 2L HO WH DALI White	34	0,96	0,96	0,99	1,26	0,95	0,96
0043005	OptiClip 600 3000K C8 HO WH DALI White	33	0,96	0,96	0,99	1,22	0,95	0,96
0043007	OptiClip 1200 3000K C8 2L HO WH DALI White	34	0,96	0,96	0,99	1,26	0,95	0,96
0043009	OptiClip 625 4000K C8 HO WH DALI White	33	0,96	0,96	0,99	1,22	0,95	0,96
0043011	OptiClip 1250 4000K C8 2L HO WH DALI White	34	0,96	0,96	0,99	1,26	0,95	0,96
0044001	OptiClip 600 4000K C8 WH DALI White	26	0,96	0,96	0,99	0,96	0,95	0,96
0044005	OptiClip 1200 4000K C8 WH DALI White	24	0,96	0,96	0,99	0,89	0,95	0,96
0044009	OptiClip 600 3000K C8 WH DALI White	26	0,96	0,96	0,99	0,96	0,95	0,96
0044013	OptiClip 1200 3000K C8 WH DALI White	26	0,96	0,96	0,99	0,96	0,95	0,96
0044017	OptiClip 600 4000K C9 WH DALI White	29	0,96	0,96	0,99	1,07	0,95	0,96
0044021	OptiClip 1200 4000K C9 WH DALI White	29	0,96	0,96	0,99	1,07	0,95	0,96
0044025	OptiClip 625 4000K C8 WH DALI White	26	0,96	0,96	0,99	0,96	0,95	0,96
0044029	OptiClip 1250 4000K C8 WH DALI White	24	0,96	0,96	0,99	0,89	0,95	0,96

Table 25: Extrapolation coefficients at product level for: SSA

Product code	Product name	Power (W)	Manufacturing stage (A1-A3)	Distribution stage (A4)	Installation stage (A5)	Use stage (B6)	EOL stage (C1 to C4)	Benefits stage (D)
44003 (Reference)	OptiClip 600 4000K C8 WH SSA02 White	27	1,00	1,00	1,00	1,00	1,00	1,00
0044007	OptiClip 1200 4000K C8 WH SSA02 White	25	1,00	1,00	1,00	0,93	1,00	1,00
0044011	OptiClip 600 3000K C8 WH SSA02 White	27	1,00	1,00	1,00	1,00	1,00	1,00
0044015	OptiClip 1200 3000K C8 WH SSA02 White	27	1,00	1,00	1,00	1,00	1,00	1,00
0044019	OptiClip 600 4000K C9 WH SSA02 White	30	1,00	1,00	1,00	1,11	1,00	1,00
0044023	OptiClip 1200 4000K C9 WH SSA02 White	30	1,00	1,00	1,00	1,11	1,00	1,00
0044027	OptiClip 625 4000K C8 WH SSA02 White	27	1,00	1,00	1,00	1,00	1,00	1,00
0044031	OptiClip 1250 4000K C8 WH SSA02 White	25	1,00	1,00	1,00	0,93	1,00	1,00

Table 26: Extrapolation coefficients at product level for SSC

Product code	Product name	Power (W)	Manufacturing stage (A1-A3)	Distribution stage (A4)	Installation stage (A5)	Use stage (B6)	EOL stage (C1 to C4)	Benefits stage (D)
0044002	OptiClip 600 4000K C8 WH SSC White	26	0,97	0,97	1,00	0,96	0,96	0,97
0044006	OptiClip 1200 4000K C8 WH SSC White	24	0,97	0,97	1,00	0,89	0,96	0,97
0044010	OptiClip 600 3000K C8 WH SSC White	26	0,97	0,97	1,00	0,96	0,96	0,97
0044014	OptiClip 1200 3000K C8 WH SSC White	26	0,97	0,97	1,00	0,96	0,96	0,97
0044018	OptiClip 600 4000K C9 WH SSC White	29	0,97	0,97	1,00	1,07	0,96	0,97
0044022	OptiClip 1200 4000K C9 WH SSC White	29	0,98	0,98	1,00	1,07	0,98	0,98
0044026	OptiClip 625 4000K C8 WH SSC White	26	0,97	0,97	1,00	0,96	0,96	0,97
0044030	OptiClip 1250 4000K C8 WH SSC White	24	0,98	0,98	1,00	0,89	0,98	0,98

DALI (DA)：Work with DALI lighting management system.

SSA：Work with PIR sensor which can be connected to Sylvania wireless lighting management system Sylsmart Connect (Silvair).

SSC: Work with Sylvania wireless lighting management system Sylsmart standalone (Casambi).