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Product Environmental Profile

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

SYLVANIA Solstice family

Registration number	SYLV-00010-V01.01-EN	Drafting rules	PCR–ed4-EN-2021 09 06
Verifier accreditation number	VH44	Supplement-ed by	PSR-0014-ed2.0-EN-2023 07 13
Date of issue	02-2026	Information and reference documents	www.pep-ecopassport.org
PEP prepared by	Feilo Sylvania International Group Kft.	Validity peri-od	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

Solstice is a comprehensive downlight family, specially developed for the architectural specification market. The floating reflector and the unique style of the range can provide a signature look to any lighting design project in the retail, office, education or hospitality segments. The Solstice product family has an ecofriendly design, made with high-quality aluminium materials, which can be recycled almost 100% at the end of the product's lifecycle. It is also easy to disassemble the product for any future upgrade or change of parts – thanks to the snap fit design and no added glue. The product family uses the latest high-efficiency LED chips, which guarantee superior quality and reliability. Solstice offers a wide range of lumen options, starting at 1000 lm and reaching 6050 lm. Due to the deep reflector design, Solstice has low glare light of UGR<19 for lumens lower than 2400 lm with wide light distribution and beam angle of approximately 70 degrees. Solstice provides comfortable light with luminance level at 65 degrees below 300 cd/m² for luminous flux less than 2400 lm and below 1000 cd/m² for luminous flux less than 6050 lm. The product is available in 3 body sizes – 150 mm, 200 mm and 250 mm and two different shapes - round and square. The range comes in two different bezel colours (black and white) and four reflector colours (silver, white, black and gold). The Solstice family here is available as a recessed luminaire and all versions of Solstice can be controlled with either DALI (push-dim) or with SylSmart drivers.

Applicable product standards:

- EN 60598-2-2 – 2012
- EN 62471 – 2008
- EN 62493 – 2015
- EN 55015 – 2013
- EN 50581 – 2012
- EN 61547 – 2009
- EN 61000-3-3 – 2013

The function of SYLVANIA Solstice family with its different series are descripted below:

- DALI (DA): Work with DALI lighting management system.
- LUMI DALI (DA): Work with DALI lighting management system and the LUMI complete and balanced spectral distribution with all colours of light while eliminating the blue peak.
- DALI (DA) DBLE WLL WSHR: This Item is a **Double Wall Washer**, that evenly floods vertical surfaces from top to bottom with light in both directions (over a wide area) and working with DALI lighting management system.
- SSA01D: Sylsmart connected system (Silvair) with Bluetooth driver, which can be connected to Sylvania wireless lighting management via Bluetooth.

- SSC01D: Sylsmart connected system (Casambi) with Bluetooth driver, which can be connected to Sylvania wireless lighting management via Bluetooth.
- LUMI HCL TW SSC01D: Sylsmart connected system (Casambi), which can tune the Kelvin-Index from 2700K – 6500K (**T**uneable **W**hite) with a **H**uman **C**entric **L**ighting-software.

The SYLVANIA Solstice reference product:

2070131 – Solstice 150 1200lm 930 DALI

belongs to DALI(DA) series, which can be connected to DALI lighting control system.

Its key technological data are listed below:

Table 1: Key technological data for reference product

Information	Unit	
Product code	-	2070131
Light source	-	LED module
Power supply	-	External
Colour temperature	K	3000
Protection index for water and dust (IP)	-	40/20
Impact resistance index (IK)	-	02
Nominal operating voltage	V	220-240V
Declared lifetime of the luminaire (L70B50)	h	120000
Declaration lifetime of the light source	h	120000
Useful output flux	lm	1200
Total power consumption	W	10
Luminous efficiency	lm/W	120
Built-in diameter	mm	150
Nominal Product Diameter	mm	165
Height	mm	100
Reference use scenario	-	Retail, Office, Education and Hospitality

SYLVANIA Solstice family are declared with below lifetime:

- L70B50 120000 h
- L80B20 120000 h
- L90B10 108000 h

L70B50 with 120000 h is used for LCA analysis.

For the retail use scenario, 5000 annual operating hours are used and result in a lifetime of 24 years.

1.2 Overview

The general information used for the PEP are listed in Table 2 below:

Table 2: Basic PEP information

Information	
Functional unit	Provide lighting that delivers an outgoing artificial luminous flux of 1000 lumen during a reference lifetime of 35000 hours
Reference flow / declared unit*	0,2431 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	Sylvania Solstice
All products of the product family	Table 19- Table 21
Extrapolation rules	Table 22 - Table 24

* The reference flow is calculated as: (1000 lumen/outgoing luminous flux of the analyzed product in lumen) x (35000 hours/declared product lifetime of the analyzed product in hours)

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

(1000/1200) x (35000/120000) = 0,2431 products/functional unit

2 Constituent materials

2.1 Overview

Table 3: Product composition

Information	Weight/product [kg]	Weight/functional unit [kg]	Share [%]
Total weight	1,456	3,54E-01	100,0
Product	1,004	2,44E-01	69,0
Packaging	0,452	1,10E-01	31,0

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

2.2 Product

Table 4: Material composition - product

Information	Weight/product [kg]	Weight/functional unit [kg]	Share [%]
Total weight	1,004	2,44E-01	100,0
Metals	0,676	1,64E-01	67,34
- Steel	0,0382	9,28E-03	3,80
- Aluminium	0,638	1,55E-01	63,54
Plastics	0,137	3,32E-02	13,62
- Polyethylene (PE)	0,106	2,59E-02	10,61
- Polypropylene (PP)	0,030	7,39E-03	3,01
Electronics	0,191	4,64E-02	19,04

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

2.3 Packaging

Table 5 Material composition - packaging

Information	Weight/product [kg]	Weight/functional unit [kg]	Share [%]
Total weight	0,452	1,10E-01	100,0
Paper/cardboard	0,425	1,03E-01	93,9
Plastics	0,013	3,23E-03	2,9
Wood	0,014	3,44E-03	3,1

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 electronic-, luminaire- and lighting components are from China. The remaining parts for packaging, labelling and some small electronic items are from Europe. The products are assembled, labelled and tested in Germanys factory (location: Erlangen) under the quality control of Feilo Sylvania Germany GmbH. The manufacturer is certified to ISO 9001:2015 / 14001:2015.

Metal scrap, plastic, waste carton/paper of the production side are mostly recycled, whereas electronic scrap is 100% incinerated with energy recovery and the waste wood is mostly considered as incinerated and landfilled.

The energy model used in manufacturing is based on Sphera's Managed LCA Content V.10:

DE: Electricity grid mix Sphera

Primary data on the transport distances and means of transport of tier I suppliers have been collected and considered in the following model:

- 550 km by truck (diesel driven, EURO 0-6, >27 t payload, 85% utilization) (means: For all parts),
- 19500 km by ship (heavy fuel oil driven, container ship, 5000 to 200000 dwt payload capacity, deep sea), from harbour of supplier to harbour of destination.
- 1,2 km by train (...see in GaBi; only for EU-parts).

3.2 Distribution (A4)

The main market for the product is Europe and factory is in Germany. For this reason, an intercontinental and intracontinental transport, following PEP-PCR–ed4-EN-2021 09 06, is considered in the following model:

- 1750 km by truck (diesel driven, EURO 0-6, >27t payload); the range is composed as follows: 750 km from manufacturing to logistic platform and 1000 km as an average value from logistic platform to customer.

The background assumptions for transportation are listed below.

Table 6: Background information distribution

Information	Unit	Truck
Fuel type	-	Diesel
Fuel consumption	l/(kg . km)	2,00E-05
Total distance	km	1,750
Capacity utilisation (including empty runs)	%	85

3.3 Installation (A5)

The SYLVANIA Solstice product family are delivered to customer with all parts needed for their installation. After connecting the power wires with the driver, all SYLVANIA Solstice types can be inserted into

the ready-made space in the ceiling or into the recessed ceiling. No energy or material input is required. Packaging waste is treated with reference to chapter 3.5.3.1 of PSR-0014-ed 2.0-2023 07 13.

3.4 Use stage (B1-B7)

During the use stage of the product, the product only consumes electricity (B6). The main market for the product is Europe. Consequently, an average European electricity grid mix (database from Sphera) has been used for the calculation.

According to PSR-0014-ED2.0-EN- 2023 07 13, the theoretical energy saving coefficients for the 6 series of SYLVANIA Solstice family are:

- DALI(DA) : 0,5
- LUMI DALI (DA): 0,5
- DALI (DA) DBLE WLL WSHR: 0,5
- SSA01D: 0,5
- SSC01D: 0,5
- LUMI HCL TW SSC01D: 0,5

The SYLVANIA Solstice reference product 2070131 is grouped under DALI series, which can be connected to DALI lighting management system. Therefore, the theoretical energy saving coefficient of the reference product is: 0,5.

The declared power consumption of the reference product is 10 Watt, and its declared lifetime is 120000 hours (L70B50).

Combining all this information leads to a total power consumption of 600 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), repair (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. EOL model is created referring to chapter 2.5.6 End of life treatment scenarios of PCR-ed4-EN-2021 09 06.

The share of the different end of life pathways are shown below. For the energy consumed in material separation, an average European grid mix has been used.

- Incineration with energy recovery: 22,8%
- Landfilling: 29,7%
- Recycling: 47,5%

3.6 Benefits and loads beyond the system boundaries (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 **Fehler! Verweisquelle konnte nicht gefunden werden.**

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

Information	Unit	Value
Total weight going into reuse	kg/functional unit	0,000
Total weight going into recycling	kg/functional unit	0,2181
- Share from product	%	53,2
- Share from packaging	%	40,4
- Share from upstream packaging & manufacturing scrap	%	6,4
Total weight going into incineration with energy recovery	kg/functional unit	0,0701
- Share from product	%	79,4
- Share from packaging	%	16,5
- Share from upstream packaging & manufacturing scrap	%	4,1

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	LCA for Experts 10
Used LCI database	LCA Managed Content Professional 2025.1
PCR version	PEP-PCR-ED4-EN-2021 09 06
PSR version	PEP-PSR-0014-ED2.0-EN-2023 07 13
Functional unit	Provide lighting that delivers an outgoing artificial luminous flux of 1000 lumen during a reference lifetime of 35000 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 1000 lumen over a reference lifetime of 35000 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 (0,354 kg product incl. packaging)

	Total (Excl.D)	Manufacturing				Distribution	Installation	Use				End of life					Benefits and loads beyond the system boundaries
		A1	A2	A3	Tot. A1-A3	A4	A5	B1-B5	B6	B7	Tot. B1-B7	C1	C2	C3	C4	Tot. C1-C4	D
GWP - total [kg CO2 eq.]	5,23E+01	5,17E+00	6,44E-02	5,01E-02	5,29E+00	5,28E-02	9,27E-02	0,00E+00	4,67E+01	0,00E+00	4,67E+01	0,00E+00	1,65E-02	1,34E-01	1,76E-03	1,52E-01	-9,73E-01
GWP - fossil [kg CO2 eq.]	5,18E+01	5,34E+00	6,38E-02	4,49E-02	5,45E+00	5,05E-02	5,44E-02	0,00E+00	4,61E+01	0,00E+00	4,61E+01	0,00E+00	1,57E-02	1,34E-01	1,75E-03	1,51E-01	-1,09E+00
GWP - biogenic [kg CO2 eq.]	3,36E-01	-1,83E-01	5,13E-04	5,19E-03	-1,78E-01	1,78E-03	3,81E-02	0,00E+00	4,74E-01	0,00E+00	4,74E-01	0,00E+00	5,56E-04	4,48E-05	4,93E-06	6,06E-04	1,18E-01
GWP - luluc [kg CO2 eq.]	1,66E-01	1,25E-02	1,36E-04	3,68E-05	1,27E-02	5,18E-04	1,85E-04	0,00E+00	1,52E-01	0,00E+00	1,52E-01	0,00E+00	1,62E-04	5,88E-05	5,22E-06	2,26E-04	-2,67E-03
ODP [kg CFC-11 eq.]	1,09E-09	3,50E-11	7,03E-15	1,24E-12	3,63E-11	8,36E-15	1,41E-13	0,00E+00	1,05E-09	0,00E+00	1,05E-09	0,00E+00	2,61E-15	8,09E-14	5,81E-15	8,93E-14	-1,55E-11
AP [Mole of H+ eq.]	1,38E-01	3,57E-02	9,53E-04	7,85E-05	3,68E-02	6,89E-05	1,35E-04	0,00E+00	1,01E-01	0,00E+00	1,01E-01	0,00E+00	2,15E-05	2,08E-04	1,07E-05	2,41E-04	-4,15E-03
EP - freshwater [kg P eq.]	1,15E-04	1,47E-05	4,82E-08	1,46E-07	1,49E-05	1,36E-07	1,17E-06	0,00E+00	9,85E-05	0,00E+00	9,85E-05	0,00E+00	4,24E-08	5,90E-08	4,06E-07	5,08E-07	-2,14E-06
EP - marine [kg N eq.]	2,98E-02	4,95E-03	4,02E-04	2,44E-05	5,38E-03	2,78E-05	7,18E-05	0,00E+00	2,42E-02	0,00E+00	2,42E-02	0,00E+00	8,66E-06	8,62E-05	2,50E-06	9,73E-05	-9,93E-04
EP - terrestrial [Mole of N eq.]	3,31E-01	5,36E-02	4,39E-03	2,69E-04	5,83E-02	2,87E-04	6,09E-04	0,00E+00	2,71E-01	0,00E+00	2,71E-01	0,00E+00	8,96E-05	9,69E-04	2,73E-05	1,09E-03	-1,08E-02
POCP [kg NMVOC eq.]	7,69E-02	1,53E-02	1,10E-03	5,61E-05	1,64E-02	6,23E-05	1,12E-04	0,00E+00	6,00E-02	0,00E+00	6,00E-02	0,00E+00	1,94E-05	2,38E-04	7,81E-06	2,65E-04	-2,84E-03
ADPE [kg Sb eq.]	3,34E-04	3,25E-04	2,14E-09	9,33E-09	3,25E-04	3,35E-09	3,53E-08	0,00E+00	9,58E-06	0,00E+00	9,58E-06	0,00E+00	1,05E-09	5,79E-09	1,19E-10	6,96E-09	-1,71E-07
ADPF [MJ]	1,01E+03	6,44E+01	7,61E-01	6,06E-01	6,58E+01	6,45E-01	6,96E-01	0,00E+00	9,40E+02	0,00E+00	9,40E+02	0,00E+00	2,01E-01	8,54E-01	2,88E-02	1,08E+00	-1,39E+01
WDP [m³ world equiv.]	1,27E+01	1,14E+00	1,55E-04	1,16E-03	1,14E+00	2,30E-04	7,42E-03	0,00E+00	1,15E+01	0,00E+00	1,15E+01	0,00E+00	7,19E-05	1,28E-02	2,10E-04	1,31E-02	-1,05E-01

Note: All the values have been shortened to 2 decimal places, resulting in a very small rounding difference - compared to the original total value - which stands in the row "Total (Excl. D)"

Table 10: Results indicators describing resource use, waste categories, and output flows per functional unit (0,354 kg product incl. Packaging)

	Total (Excl.D)	Manufacturing				Distribution	Installation	Use				End of life					Benefits and loads beyond the system boundaries
		A1	A2	A3	Tot. A1-A3	A4	A5	B1-B5	B6	B7	Tot. B1-B7	C1	C2	C3	C4	Tot. C1-C4	D
PERE [MJ]	6,62E+02	1,81E+01	1,56E-02	5,48E-01	1,87E+01	4,86E-02	2,08E-01	0,00E+00	6,42E+02	0,00E+00	6,42E+02	0,00E+00	1,52E-02	9,96E-02	4,75E-03	1,20E-01	-1,05E+01
PERM [MJ]	1,60E+00	1,60E+00	0,00E+00	0,00E+00	1,60E+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]	6,63E+02	1,97E+01	1,56E-02	5,48E-01	2,03E+01	4,86E-02	2,08E-01	0,00E+00	6,42E+02	0,00E+00	6,42E+02	0,00E+00	1,52E-02	9,96E-02	4,75E-03	1,20E-01	-1,05E+01
PENRE [MJ]	1,01E+03	6,28E+01	7,61E-01	6,06E-01	6,42E+01	6,45E-01	6,96E-01	0,00E+00	9,40E+02	0,00E+00	9,40E+02	0,00E+00	2,01E-01	8,54E-01	2,88E-02	1,08E+00	-1,28E+01
PENRM [MJ]	1,60E+00	1,60E+00	0,00E+00	0,00E+00	1,60E+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	-1,07E+00
PENRT [MJ]	1,01E+03	6,44E+01	7,61E-01	6,06E-01	6,58E+01	6,45E-01	6,96E-01	0,00E+00	9,40E+02	0,00E+00	9,40E+02	0,00E+00	2,01E-01	8,54E-01	2,88E-02	1,08E+00	-1,39E+01
SM [kg]	3,39E-02	3,39E-02	0,00E+00	0,00E+00	3,39E-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	-1,11E-01
RSF [MJ]	5,42E-02	0,00E+00	8,87E-03	0,00E+00	8,87E-03	3,42E-02	4,81E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,07E-02	0,00E+00	0,00E+00	1,07E-02	0,00E+00
NRSF [MJ]	1,39E+00	0,00E+00	6,73E-01	0,00E+00	6,73E-01	5,37E-01	7,54E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,68E-01	0,00E+00	0,00E+00	1,68E-01	0,00E+00
FW [m3]	5,40E-01	4,00E-02	9,90E-06	1,95E-04	4,02E-02	2,40E-05	4,74E-04	0,00E+00	4,99E-01	0,00E+00	4,99E-01	0,00E+00	7,50E-06	3,52E-04	6,16E-06	3,66E-04	-5,00E-03
HWD [kg]	1,30E-06	6,07E-08	2,74E-11	1,18E-09	6,19E-08	2,59E-11	1,16E-08	0,00E+00	1,23E-06	0,00E+00	1,23E-06	0,00E+00	8,08E-12	2,05E-09	6,32E-12	2,07E-09	-2,60E-08
NHWD [kg]	1,56E+00	7,13E-01	7,14E-05	2,62E-03	7,16E-01	9,01E-05	1,10E-02	0,00E+00	7,28E-01	0,00E+00	7,28E-01	0,00E+00	2,81E-05	3,40E-02	7,24E-02	1,06E-01	-3,13E-01
RWD [kg]	1,50E-01	1,74E-03	1,03E-06	5,49E-05	1,80E-03	1,22E-06	1,91E-05	0,00E+00	1,48E-01	0,00E+00	1,48E-01	0,00E+00	3,80E-07	2,98E-05	4,06E-07	3,06E-05	-7,33E-04
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	0,00E+00	0,00E+00	0,00E+00
MFR [kg]	2,18E-01	7,34E-03	0,00E+00	6,66E-03	1,40E-02	0,00E+00	8,81E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,16E-01	0,00E+00	1,16E-01	0,00E+00
MER [kg]	7,01E-02	0,00E+00	0,00E+00	2,86E-03	2,86E-03	0,00E+00	1,16E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,57E-02	0,00E+00	5,57E-02	0,00E+00
EEE [MJ]	1,76E-01	4,06E-03	0,00E+00	0,00E+00	4,06E-03	0,00E+00	3,16E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,40E-01	0,00E+00	1,40E-01	-2,98E-03
EET [MJ]	3,65E-01	9,40E-03	0,00E+00	0,00E+00	9,40E-03	0,00E+00	5,12E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,05E-01	0,00E+00	3,05E-01	-6,90E-03
Biog. C in product [kg C]	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	0,00E+00	0,00E+00	0,00E+00
Biog.-C in packaging [kg C]	0,00E+00	-4,59E-02	0,00E+00	0,00E+00	-4,59E-02	0,00E+00	4,59E-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

Note: All the values have been shortened to 2 decimal places, resulting in a very small rounding difference - compared to the original total value - which stands in the row "Total (Excl. D)"

Table 11: Additional environmental impact indicators per functional unit (0,354 kg product incl. packaging)

	Total (Excl.D)	Manufacturing				Distribution	Installation	Use				End of life					Benefits and loads beyond the system boundaries
		A1	A2	A3	Tot. A1-A3	A4	A5	B1-B5	B6	B7	Tot. B1-B7	C1	C2	C3	C4	Tot. C1-C7	D
PM [Disease incidences]	1,27E-06	4,11E-07	2,49E-08	6,16E-10	4,36E-07	6,51E-10	9,98E-10	0,00E+00	8,34E-07	0,00E+00	8,34E-07	0,00E+00	2,03E-10	1,75E-09	1,18E-10	2,07E-09	-6,53E-08
IRP [kBq. U235 eq.]	2,47E+01	1,93E-01	1,43E-04	5,51E-03	1,99E-01	1,75E-04	3,13E-03	0,00E+00	2,45E+01	0,00E+00	2,45E+01	0,00E+00	5,46E-05	4,53E-03	5,46E-05	4,64E-03	-7,64E-02
ETP-fw [CTUe]	1,86E+02	2,49E+01	6,51E-01	1,69E-01	2,58E+01	8,39E-01	2,10E-01	0,00E+00	1,59E+02	0,00E+00	1,59E+02	0,00E+00	2,62E-01	1,22E-01	4,03E-02	4,24E-01	-4,25E+00
HTP-c [CTUh]	1,80E-08	3,02E-09	9,57E-12	1,20E-11	3,04E-09	1,13E-11	9,56E-12	0,00E+00	1,50E-08	0,00E+00	1,50E-08	0,00E+00	3,53E-12	8,02E-12	5,95E-13	1,22E-11	-7,07E-10
HTP-nc [CTUh]	3,54E-07	3,72E-08	2,74E-10	3,24E-10	3,78E-08	6,33E-10	7,80E-10	0,00E+00	3,15E-07	0,00E+00	3,15E-07	0,00E+00	1,97E-10	3,26E-10	1,31E-11	5,36E-10	-6,57E-09
SQP [dimensionless]	4,14E+02	3,62E+01	7,57E-02	3,48E-01	3,66E+01	2,85E-01	8,01E-01	0,00E+00	3,76E+02	0,00E+00	3,76E+02	0,00E+00	8,90E-02	1,07E-01	4,66E-03	2,01E-01	-1,52E+01

Note: All the values have been shortened to 2 decimal places, resulting in a very small rounding difference - compared to the original total value - which stands in the row "Total (Excl. D)"

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 of core environmental impact indicators per unit of product

	Total (Excl.D)	Manufacturing				Distribution	Installation	Use				End of life					Benefits and loads beyond the system boundaries
		A1	A2	A3	Tot. A1-A3	A4	A5	B1-B5	B6	B7	Tot. B1-B7	C1	C2	C3	C4	Tot. C1-C7	D
GWP - total [kg CO2 eq.]	2,15E+02	2,13E+01	2,65E-01	2,06E-01	2,18E+01	2,17E-01	3,81E-01	0,00E+00	1,92E+02	0,00E+00	1,92E+02	0,00E+00	6,77E-02	5,51E-01	7,26E-03	6,26E-01	-4,00E+00
GWP - fossil [kg CO2 eq.]	2,13E+02	2,20E+01	2,62E-01	1,85E-01	2,24E+01	2,08E-01	2,24E-01	0,00E+00	1,89E+02	0,00E+00	1,89E+02	0,00E+00	6,48E-02	5,51E-01	7,22E-03	6,23E-01	-4,48E+00
GWP - biogenic [kg CO2 eq.]	1,38E+00	-7,54E-01	2,11E-03	2,14E-02	-7,31E-01	7,33E-03	1,57E-01	0,00E+00	1,95E+00	0,00E+00	1,95E+00	0,00E+00	2,29E-03	1,84E-04	2,03E-05	2,49E-03	4,87E-01
GWP - luluc [kg CO2 eq.]	6,82E-01	5,14E-02	5,60E-04	1,52E-04	5,21E-02	2,13E-03	7,61E-04	0,00E+00	6,26E-01	0,00E+00	6,26E-01	0,00E+00	6,66E-04	2,42E-04	2,15E-05	9,29E-04	-1,10E-02
ODP [kg CFC-11 eq.]	4,47E-09	1,44E-10	2,89E-14	5,10E-12	1,49E-10	3,44E-14	5,82E-13	0,00E+00	4,32E-09	0,00E+00	4,32E-09	0,00E+00	1,07E-14	3,33E-13	2,39E-14	3,67E-13	-6,40E-11
AP [Mole of H+ eq.]	5,68E-01	1,47E-01	3,92E-03	3,23E-04	1,51E-01	2,84E-04	5,57E-04	0,00E+00	4,15E-01	0,00E+00	4,15E-01	0,00E+00	8,85E-05	8,58E-04	4,42E-05	9,90E-04	-1,71E-02
EP - freshwater [kg P eq.]	4,74E-04	6,05E-05	1,98E-07	6,02E-07	6,13E-05	5,59E-07	4,79E-06	0,00E+00	4,05E-04	0,00E+00	4,05E-04	0,00E+00	1,74E-07	2,43E-07	1,67E-06	2,09E-06	-8,79E-06
EP - marine [kg N eq.]	1,22E-01	2,04E-02	1,65E-03	1,00E-04	2,21E-02	1,14E-04	2,95E-04	0,00E+00	9,96E-02	0,00E+00	9,96E-02	0,00E+00	3,56E-05	3,54E-04	1,03E-05	4,00E-04	-4,09E-03
EP - terrestrial [Mole of N eq.]	1,36E+00	2,21E-01	1,81E-02	1,11E-03	2,40E-01	1,18E-03	2,51E-03	0,00E+00	1,12E+00	0,00E+00	1,12E+00	0,00E+00	3,69E-04	3,99E-03	1,12E-04	4,47E-03	-4,43E-02
POCP [kg NMVOC eq.]	3,17E-01	6,29E-02	4,52E-03	2,31E-04	6,77E-02	2,56E-04	4,62E-04	0,00E+00	2,47E-01	0,00E+00	2,47E-01	0,00E+00	8,00E-05	9,79E-04	3,21E-05	1,09E-03	-1,17E-02
ADPE [kg Sb eq.]	1,38E-03	1,34E-03	8,81E-09	3,84E-08	1,34E-03	1,38E-08	1,45E-07	0,00E+00	3,94E-05	0,00E+00	3,94E-05	0,00E+00	4,30E-09	2,38E-08	4,90E-10	2,86E-08	-7,02E-07
ADPF [MJ]	4,15E+03	2,65E+02	3,13E+00	2,49E+00	2,71E+02	2,66E+00	2,86E+00	0,00E+00	3,87E+03	0,00E+00	3,87E+03	0,00E+00	8,29E-01	3,51E+00	1,19E-01	4,46E+00	-5,71E+01
WDP [m³ world equiv.]	5,23E+01	4,68E+00	6,37E-04	4,78E-03	4,69E+00	9,48E-04	3,05E-02	0,00E+00	4,75E+01	0,00E+00	4,75E+01	0,00E+00	2,96E-04	5,28E-02	8,62E-04	5,40E-02	-4,32E-01

Note: All the values have been shortened to 2 decimal places, resulting in a very small rounding difference - compared to the original total value - which stands in the row "Total (Excl. D)"

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

	Total (Excl.D)	Manufacturing				Distribution	Installation	Use				End of life					Benefits and loads beyond the system boundaries
		A1	A2	A3	Tot. A1-A3	A4	A5	B1-B5	B6	B7	Tot. B1-B7	C1	C2	C3	C4	Tot. C1-C4	D
PERE [MJ]	2,72E+03	7,45E+01	6,42E-02	2,25E+00	7,68E+01	2,00E-01	8,55E-01	0,00E+00	2,64E+03	0,00E+00	2,64E+03	0,00E+00	6,25E-02	4,10E-01	1,95E-02	4,92E-01	-4,31E+01
PERM [MJ]	6,59E+00	6,59E+00	0,00E+00	0,00E+00	6,59E+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]	2,73E+03	8,11E+01	6,42E-02	2,25E+00	8,34E+01	2,00E-01	8,55E-01	0,00E+00	2,64E+03	0,00E+00	2,64E+03	0,00E+00	6,25E-02	4,10E-01	1,95E-02	4,92E-01	-4,31E+01
PENRE [MJ]	4,14E+03	2,59E+02	3,13E+00	2,49E+00	2,64E+02	2,66E+00	2,86E+00	0,00E+00	3,87E+03	0,00E+00	3,87E+03	0,00E+00	8,29E-01	3,51E+00	1,19E-01	4,46E+00	-5,27E+01
PENRM [MJ]	6,60E+00	6,60E+00	0,00E+00	0,00E+00	6,60E+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	-4,40E+00
PENRT [MJ]	4,15E+03	2,65E+02	3,13E+00	2,49E+00	2,71E+02	2,66E+00	2,86E+00	0,00E+00	3,87E+03	0,00E+00	3,87E+03	0,00E+00	8,29E-01	3,51E+00	1,19E-01	4,46E+00	-5,71E+01
SM [kg]	1,40E-01	1,40E-01	0,00E+00	0,00E+00	1,40E-01	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	-4,58E-01
RSF [MJ]	2,23E-01	0,00E+00	3,65E-02	0,00E+00	3,65E-02	1,41E-01	1,98E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,39E-02	0,00E+00	0,00E+00	4,39E-02	0,00E+00
NRSF [MJ]	5,70E+00	0,00E+00	2,77E+00	0,00E+00	2,77E+00	2,21E+00	3,10E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,89E-01	0,00E+00	0,00E+00	6,89E-01	0,00E+00
FW [m3]	2,22E+00	1,65E-01	4,08E-05	8,02E-04	1,65E-01	9,89E-05	1,95E-03	0,00E+00	2,05E+00	0,00E+00	2,05E+00	0,00E+00	3,09E-05	1,45E-03	2,54E-05	1,51E-03	-2,06E-02
HWD [kg]	5,36E-06	2,50E-07	1,13E-10	4,85E-09	2,55E-07	1,07E-10	4,78E-08	0,00E+00	5,05E-06	0,00E+00	5,05E-06	0,00E+00	3,32E-11	8,44E-09	2,60E-11	8,50E-09	-1,07E-07
NHWD [kg]	6,42E+00	2,93E+00	2,94E-04	1,08E-02	2,95E+00	3,71E-04	4,53E-02	0,00E+00	3,00E+00	0,00E+00	3,00E+00	0,00E+00	1,16E-04	1,40E-01	2,98E-01	4,38E-01	-1,29E+00
RWD [kg]	6,18E-01	7,16E-03	4,23E-06	2,26E-04	7,39E-03	5,01E-06	7,87E-05	0,00E+00	6,10E-01	0,00E+00	6,10E-01	0,00E+00	1,56E-06	1,23E-04	1,67E-06	1,26E-04	-3,02E-03
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	0,00E+00	0,00E+00	0,00E+00
MFR [kg]	8,97E-01	3,02E-02	0,00E+00	2,74E-02	5,76E-02	0,00E+00	3,63E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,77E-01	0,00E+00	4,77E-01	0,00E+00
MER [kg]	2,88E-01	0,00E+00	0,00E+00	1,18E-02	1,18E-02	0,00E+00	4,75E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,29E-01	0,00E+00	2,29E-01	0,00E+00
EEE [MJ]	7,23E-01	1,67E-02	0,00E+00	0,00E+00	1,67E-02	0,00E+00	1,30E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,77E-01	0,00E+00	5,77E-01	-1,23E-02
EET [MJ]	1,50E+00	3,87E-02	0,00E+00	0,00E+00	3,87E-02	0,00E+00	2,11E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,25E+00	0,00E+00	1,25E+00	-2,84E-02
Biog. C in product [kg C]	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	0,00E+00	0,00E+00	0,00E+00
Biog. C in packaging [kg C]	0,00E+00	-1,89E-01	0,00E+00	0,00E+00	-1,89E-01	0,00E+00	1,89E-01	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

Note: All the values have been shortened to 2 decimal places, resulting in a very small rounding difference - compared to the original total value - which stands in the row "Total (Excl. D)"

Table 14: Additional environmental impact indicators per unit of product

	Total (Excl.D)	Manufacturing				Distribution	Installation	Use				End of life					Benefits and loads beyond the system boundaries
		A1	A2	A3	Tot. A1-A3	A4	A5	B1-B5	B6	B7	Tot. B1-B7	C1	C2	C3	C4	Tot. C1-C7	D
PM [Disease incidences]	5,24E-06	1,69E-06	1,03E-07	2,53E-09	1,80E-06	2,68E-09	4,10E-09	0,00E+00	3,43E-06	0,00E+00	3,43E-06	0,00E+00	8,35E-10	7,20E-09	4,86E-10	8,52E-09	-2,69E-07
IRP [kBq. U235 eq.]	1,02E+02	7,96E-01	5,90E-04	2,27E-02	8,19E-01	7,20E-04	1,29E-02	0,00E+00	1,01E+02	0,00E+00	1,01E+02	0,00E+00	2,25E-04	1,86E-02	2,24E-04	1,91E-02	-3,14E-01
ETP-fw [CTUe]	7,65E+02	1,03E+02	2,68E+00	6,95E-01	1,06E+02	3,45E+00	8,66E-01	0,00E+00	6,53E+02	0,00E+00	6,53E+02	0,00E+00	1,08E+00	5,02E-01	1,66E-01	1,74E+00	-1,75E+01
HTP-c [CTUh]	7,42E-08	1,24E-08	3,94E-11	4,93E-11	1,25E-08	4,66E-11	3,93E-11	0,00E+00	6,15E-08	0,00E+00	6,15E-08	0,00E+00	1,45E-11	3,30E-11	2,45E-12	5,00E-11	-2,91E-09
HTP-nc [CTUh]	1,46E-06	1,53E-07	1,13E-09	1,33E-09	1,55E-07	2,60E-09	3,21E-09	0,00E+00	1,30E-06	0,00E+00	1,30E-06	0,00E+00	8,13E-10	1,34E-09	5,37E-11	2,21E-09	-2,70E-08
SQP [dimensionsless]	1,70E+03	1,49E+02	3,11E-01	1,43E+00	1,51E+02	1,17E+00	3,30E+00	0,00E+00	1,55E+03	0,00E+00	1,55E+03	0,00E+00	3,66E-01	4,40E-01	1,92E-02	8,25E-01	-6,27E+01

Note: All the values have been shortened to 2 decimal places, resulting in a very small rounding difference - compared to the original total value - which stands in the row "Total (Excl. D)"

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 (per FU) and Table 17 (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: Scaling factor of use stage B6 for GWP total of energy grid mixes for different countries) shows the scaling factor for GWP total of energy grid mixes for different countries.

For example:

For the reference product 2070131, Multiple GWP total B6 for EU (4,67E+01/functional unit) with Scaling factor for B6 for Belgium (0,507), The GWP total result for B6 for Belgium (2,37E+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 B6 for GWP total of energy grid mixes for different countries

Electricity grid	Scaling Factor for use stage
EU	1,000
AUSTRIA	0,784
BELGIUM	0,507
DENMARK	0,584
FINLAND	0,507
FRANCE	0,250
GERMANY	1,442
HUNGARY	1,016
IRELAND	1,255
ITALY	1,245
NETHERLANDS	1,141
NORWAY	0,147
POLAND	2,668
PORTUGUAL	0,786
ROMANIA	1,165
SPAN	0,740
SWEDEN	0,153
SWITZERLAND	0,430
UK	0,813

Table 16: GWP total [kg CO2 eq.] results for use stage B6 for different country per functional unit (0,354 kg product incl. packaging)

Electricity grid	GWP - total [kg CO2 eq.] B6
EU	4,67E+01
AUSTRIA	3,66E+01
BELGIUM	2,37E+01
DENMARK	2,73E+01
FINLAND	2,37E+01
FRANCE	1,17E+01
GERMANY	6,73E+01
HUNGARY	4,74E+01
IRELAND	5,86E+01
ITALY	5,81E+01
NETHERLANDS	5,32E+01
NORWAY	6,86E+00
POLAND	1,25E+02
POTUGAL	3,67E+01
ROMANIA	5,44E+01
SPAIN	3,45E+01
SWEDEN	7,16E+00
SWITZERLAND	2,01E+01
UK	3,80E+01

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

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

Electricity grid	GWP - total [kg CO2 eq.] B6
EU	1,92E+02
AUSTRIA	1,51E+02
BELGIUM	9,73E+01
DENMARK	1,12E+02
FINLAND	9,75E+01
FRANCE	4,81E+01
GERMANY	2,77E+02
HUNGARY	1,95E+02
IRELAND	2,41E+02
ITALY	2,39E+02
NETHERLANDS	2,19E+02
NORWAY	2,82E+01
POLAND	5,12E+02
POTUGAL	1,51E+02
ROMANIA	2,24E+02
SPAIN	1,42E+02
SWEDEN	2,94E+01
SWITZERLAND	8,26E+01
UK	1,56E+02

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 the Sphera LCA software LCA for Experts V.10 and with datasets from the Sphera 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 to very good (DQR = 1,73).

The individual rating for technological, time and geographical representativeness is assessed as good, excellent and good (DQR = 2,03; 1,00 and 2,15).

5 Extrapolation rules

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

Table 18: Reference values for the extrapolations.

Parameter	Unit	Reference value
Weight of structural/ mechanical parts	kg	0,813
Weight of power equipment	kg	0,152
Weight of light source	kg	0,039
Weight of light management system	kg	0,000
Weight of product (excl. packaging)	kg	1,004
Weight of packaging	kg	0,452
Weight of product (incl. packaging)	kg	1,456
Typical power consumption	W	10
Lumen output	lm	1200
Energy saving	-	0,5

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

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

Lighting output of each product variant and other important properties are listed in the tables below.

Table 19: Information for product family: SSA

Product code	Product name	Power (W)	Lighting output (lm)	Lumi-naire structure weight (kg)	Product packag-ing weight (kg)	Power equip-ment weight (kg)	Light source weight (kg)	Light manage-ment weight (kg)	Total weight (kg)	Energy saving coeffi-cient
2070158	SOLST 200 2300LM 930 SSA01D	17	2300	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070159	SOLST 200 2400LM 940 SSA01D	17	2400	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070295	SOLSTICE 250 2300LM 930 SSA01D	17	2300	1,8666	0,5469	0,2050	0,0806	0,0000	2,6991	0,5000
2070296	SOLSTICE 250 2400LM 940 SSA01D	17	2400	1,8666	0,5469	0,2050	0,0806	0,0000	2,6991	0,5000

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

Product code	Product name	Power (W)	Lighting output (lm)	Lumi-naire structure weight (kg)	Product packag-ing weight (kg)	Power equip-ment weight (kg)	Light source weight (kg)	Light manage-ment weight (kg)	Total weight (kg)	Energy saving coeffi-cient
2070131	SOLST 150 1200LM 930 DALI	10	1200	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070132	SOLST 150 1300LM 940 DALI	10	1300	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070133	SOLST 150 1900LM 930 DALI	15	1900	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070134	SOLST 150 2000LM 940 DALI	15	2000	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070135	SOLST 150 1000LM 930 DALI BB	15	1000	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070136	SOLST 150 1050LM 940 DALI BB	15	1050	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070137	SOLST 150 1800LM 930 DALI WW	15	1800	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070138	SOLST 150 1850LM 940 DALI WW	15	1850	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070141	SOLST 150 1450LM LUMI 930 DALI	17	1450	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070142	SOLST 150 1550LM LUMI 940 DALI	17	1550	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070146	SOLST 200 2300LM 930 DALI	17	2300	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070149	SOLST 200 2400LM 940 DALI	17	2400	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070150	SOLST 200 4200LM 930 DALI	31	4200	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070151	SOLST 200 4350LM 940 DALI	31	4350	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070152	SOLST 200 1500LM 930 DALI BB	17	1500	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070153	SOLST 200 1600LM 940 DALI BB	17	1600	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070154	SOLST 200 2300LM 930 DALI WW	17	2300	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070155	SOLST 200 2400LM 940 DALI WW	17	2400	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070160	SOLST 200 1800LM LUMI 930 DALI	18	1800	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070161	SOLST 200 1900LM LUMI 940 DALI	18	1900	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070165	SOLST 200 5900LM 930 DALI	46	5900	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070166	SOLST 200 6050LM 940 DALI	46	6050	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070167	SOLST 200 2300LM 930 DALI SQUARE	17	2300	1,4840	0,4350	0,2083	0,0802	0,0000	2,2075	0,5000
2070168	SOLST 200 2400LM 940 DALI SQUARE	17	2400	1,4840	0,4350	0,2083	0,0802	0,0000	2,2075	0,5000
2070171	SOLST 150 IP65 1700LM 930 DALI	15	1700	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070172	SOLST 150 IP65 1900LM 940 DALI	15	1900	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070173	SOLST 200 IP65 2100LM 930 DALI	17	2100	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070174	SOLST 200 IP65 2200LM 940 DALI	17	2200	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070175	SOLST 150 1500LM 930 DALI DBLE WLL WSHR	15	1500	0,8509	0,4136	0,2011	0,0300	0,0000	1,4956	0,5000
2070176	SOLST 150 1600LM 940 DALI DBLE WLL WSHR	15	1600	0,8509	0,4136	0,2011	0,0300	0,0000	1,4956	0,5000
2070221	SOLST 250 2300LM 930 DALI	17	2300	1,8666	0,5469	0,2050	0,0806	0,0000	2,6991	0,5000
2070222	SOLST 250 2400LM 940 DALI	17	2400	1,8666	0,5469	0,2050	0,0806	0,0000	2,6991	0,5000
2070227	SOLST 150 1250LM 930 DALI GB	15	1250	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000

Product code	Product name	Power (W)	Lighting output (lm)	Lumi-naire structure weight (kg)	Product packag-ing weight (kg)	Power equip-ment weight (kg)	Light source weight (kg)	Light manage-ment weight (kg)	Total weight (kg)	Energy saving coeffi-cient
2070228	SOLST 150 1300LM 940 DALI GB	15	1300	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070229	SOLST 200 1700LM 930 DALI GB	17	1700	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070230	SOLST 200 1800LM 940 DALI GB	17	1800	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070231	SOLST 150 1900LM 930 DALI SB	15	1900	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070232	SOLST 150 2000LM 940 DALI SB	15	2000	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070233	SOLST 200 2300LM 930 DALI SB	17	2300	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070234	SOLST 200 2400LM 940 DALI SB	17	2400	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070414	SOLSTICE 150 1800LM 930 DALI SEMIMATTW	15	1550	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070415	SOLSTICE 150 1900LM 940 DALI SEMIMATTW	15	1600	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070416	SOLSTICE 200 2200LM 930 DALI SEMIMATTW	17	2000	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070417	SOLSTICE 200 2300LM 940 DALI SEMIMATTW	17	2100	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070418	SOLST 150 3000LM 930 DALI	24	3000	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070419	SOLST 150 3100LM 940 DALI	24	3100	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000

Table 21: Information for product family: SSC

Product code	Product name	Power (W)	Lighting output (lm)	Lumi-naire structure weight (kg)	Product packag-ing weight (kg)	Power equip-ment weight (kg)	Light source weight (kg)	Light manage-ment weight (kg)	Total weight (kg)	Energy saving coeffi-cient
2070139	SOLST 150 1900LM 930 SSC01D	15	1900	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070140	SOLST 150 2000LM 940 SSC01D	15	2000	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070143	SOLST 150 1450LM LUMI 930 SSC01D	17	1450	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070144	SOLST 150 1550LM LUMI 940 SSC01D	17	1550	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070145	SOLST 150 LUMI HCL TW SSC01D	22,5	1650	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070156	SOLST 200 2300LM 930 SSC01D	17	2300	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070157	SOLST 200 2400LM 940 SSC01D	17	2400	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070162	SOLST 200 1800LM LUMI 930 SSC01D	18	1800	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070163	SOLST 200 1900LM LUMI 940 SSC01D	18	1900	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070164	SOLST 200 LUMI HCL TW SSC01D	22	2050	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070235	SOLST 150 1250LM 930 SSC01D GB	15	1250	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070236	SOLST 150 1300LM 940 SSC01D GB	15	1300	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070237	SOLST 200 1700LM 930 SSC01D GB	17	1700	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070238	SOLST 200 1800LM 940 SSC01D GB	17	1800	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070239	SOLST 150 1900LM 930 SSC01D SB	15	1900	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070240	SOLST 150 2000LM 940 SSC01D SB	15	2000	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070241	SOLST 200 2300LM 930 SSC01D SB	17	2300	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000

Product code	Product name	Power (W)	Lighting output (lm)	Lumi-naire structure weight (kg)	Product packag-ing weight (kg)	Power equip-ment weight (kg)	Light source weight (kg)	Light manage-ment weight (kg)	Total weight (kg)	Energy saving coeffi-cient
2070242	SOLST 200 2400LM 940 SSC01D SB	17	2400	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070390	SOLST 150 1000LM 930 SSC01D BB	15	1000	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070391	SOLST 150 1050LM 940 SSC01D BB	15	1050	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070392	SOLST 200 1500LM 930 SSC01D BB	17	1500	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070393	SOLST 200 1600LM 940 SSC01D BB	17	1600	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070394	SOLST 150 1800LM 930 SSC01D WW	15	1800	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070395	SOLST 150 1850LM 940 SSC01D WW	15	1850	0,8130	0,4522	0,1523	0,0389	0,0000	1,4564	0,5000
2070396	SOLST 200 2300LM 930 SSC01D WW	17	2300	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000
2070397	SOLST 200 2400LM 940 SSC01D WW	17	2400	1,1252	0,4281	0,2050	0,0806	0,0000	1,8388	0,5000

The required extrapolation coefficients at the product level are listed in the following tables.

Table 22: Extrapolation coefficients at product level for SSA

Product code	Product name	Pow-er (W)	Lighting output (lm)	Manufactur-ing stage (A1-A3)	Distribu-tion stage (A4)	Installa-tion stage (A5)	Use stage (B6)	EOL stage (C1 to C4)	Benefits stage (D)
2070158	SOLST 200 2300LM 930 SSA01D	17	2300	1,3081	1,2626	0,9467	1,7000	1,4049	1,3081
2070159	SOLST 200 2400LM 940 SSA01D	17	2400	1,3081	1,2626	0,9467	1,7000	1,4049	1,3081
2070295	SOLSTICE 250 2300LM 930 SSA01D	17	2300	1,9970	1,8533	1,2094	1,7000	2,1433	1,9970
2070296	SOLSTICE 250 2400LM 940 SSA01D	17	2400	1,9970	1,8533	1,2094	1,7000	2,1433	1,9970

Table 23: Extrapolation coefficients at product level for DALI (DA)

Product code	Product name	Pow-er (W)	Lighting output (lm)	Manufactur-ing stage (A1-A3)	Distribu-tion stage (A4)	Installa-tion stage (A5)	Use stage (B6)	EOL stage (C1 to C4)	Benefits stage (D)
2070131	SOLST 150 1200LM 930 DALI	10	1200	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000
2070132	SOLST 150 1300LM 940 DALI	10	1300	1,0000	1,0000	1,0000	1,0000	0,0000	1,0000
2070133	SOLST 150 1900LM 930 DALI	15	1900	1,0000	1,0000	1,0000	1,0000	0,0000	1,0000
2070134	SOLST 150 2000LM 940 DALI	15	2000	1,0000	1,0000	1,0000	1,0000	0,0000	1,0000
2070135	SOLST 150 1000LM 930 DALI BB	15	1000	1,0000	1,0000	1,0000	1,0000	0,0000	1,0000
2070136	SOLST 150 1050LM 940 DALI BB	15	1050	1,0000	1,0000	1,0000	1,0000	0,0000	1,0000
2070137	SOLST 150 1800LM 930 DALI WW	15	1800	1,0000	1,0000	1,0000	1,0000	0,0000	1,0000
2070138	SOLST 150 1850LM 940 DALI WW	15	1850	1,0000	1,0000	1,0000	1,0000	0,0000	1,0000
2070141	SOLST 150 1450LM LUMI 930 DALI	17	1450	1,0000	1,0000	1,0000	1,0000	0,0000	1,0000
2070142	SOLST 150 1550LM LUMI 940 DALI	17	1550	1,0000	1,0000	1,0000	1,0000	0,0000	1,0000
2070146	SOLST 200 2300LM 930 DALI	17	2300	1,3840	0,9467	1,3460	2,0720	0,0000	1,3081
2070149	SOLST 200 2400LM 940 DALI	17	2400	1,3840	0,9467	1,3460	2,0720	0,0000	1,3081
2070150	SOLST 200 4200LM 930 DALI	31	4200	1,3840	0,9467	1,3460	2,0720	0,0000	1,3081
2070151	SOLST 200 4350LM 940 DALI	31	4350	1,3840	0,9467	1,3460	2,0720	0,0000	1,3081
2070152	SOLST 200 1500LM 930 DALI BB	17	1500	1,3840	0,9467	1,3460	2,0720	0,0000	1,3081
2070153	SOLST 200 1600LM 940 DALI BB	17	1600	1,3840	0,9467	1,3460	2,0720	0,0000	1,3081
2070154	SOLST 200 2300LM 930 DALI WW	17	2300	1,3840	0,9467	1,3460	2,0720	0,0000	1,3081
2070155	SOLST 200 2400LM 940 DALI WW	17	2400	1,3840	0,9467	1,3460	2,0720	0,0000	1,3081
2070160	SOLST 200 1800LM LUMI 930 DALI	18	1800	1,3840	0,9467	1,3460	2,0720	0,0000	1,3081
2070161	SOLST 200 1900LM LUMI 940 DALI	18	1900	1,3840	0,9467	1,3460	2,0720	0,0000	1,3081
2070165	SOLST 200 5900LM 930 DALI	46	5900	1,3840	0,9467	1,3460	2,0720	0,0000	1,3081
2070166	SOLST 200 6050LM 940 DALI	46	6050	1,3840	0,9467	1,3460	2,0720	0,0000	1,3081
2070167	SOLST 200 2300LM 930 DALI SQUARE	17	2300	1,8254	0,9621	1,3677	2,0617	0,0000	1,6206
2070168	SOLST 200 2400LM 940 DALI SQUARE	17	2400	1,8254	0,9621	1,3677	2,0617	0,0000	1,6206
2070171	SOLST 150 IP65 1700LM 930 DALI	15	1700	1,0000	1,0000	1,0000	1,0000	0,0000	1,0000
2070172	SOLST 150 IP65 1900LM 940 DALI	15	1900	1,0000	1,0000	1,0000	1,0000	0,0000	1,0000
2070173	SOLST 200 IP65 2100LM 930 DALI	17	2100	1,3840	0,9467	1,3460	2,0720	0,0000	1,3081
2070174	SOLST 200 IP65 2200LM 940 DALI	17	2200	1,3840	0,9467	1,3460	2,0720	0,0000	1,3081
2070175	SOLST 150 1500LM 930 DALI DBLE WLL WSHR	15	1500	0,8509	0,4136	0,2011	0,0300	0,0000	1,4956
2070176	SOLST 150 1600LM 940 DALI DBLE WLL WSHR	15	1600	0,8509	0,4136	0,2011	0,0300	0,0000	1,4956
2070221	SOLST 250 2300LM 930 DALI	17	2300	2,2961	1,2094	1,3460	2,0720	0,0000	1,9970
2070222	SOLST 250 2400LM 940 DALI	17	2400	2,2961	1,2094	1,3460	2,0720	0,0000	1,9970
2070227	SOLST 150 1250LM 930 DALI GB	15	1250	1,0000	1,0000	1,0000	1,0000	0,0000	1,0000
2070228	SOLST 150 1300LM 940 DALI GB	15	1300	1,0000	1,0000	1,0000	1,0000	0,0000	1,0000

Product code	Product name	Pow-er (W)	Lighting output (lm)	Manufactur-ing stage (A1-A3)	Distribu-tion stage (A4)	Installa-tion stage (A5)	Use stage (B6)	EOL stage (C1 to C4)	Benefits stage (D)
2070229	SOLST 200 1700LM 930 DALI GB	17	1700	1,3840	0,9467	1,3460	2,0720	0,0000	1,3081
2070230	SOLST 200 1800LM 940 DALI GB	17	1800	1,3840	0,9467	1,3460	2,0720	0,0000	1,3081
2070231	SOLST 150 1900LM 930 DALI SB	15	1900	1,0000	1,0000	1,0000	1,0000	0,0000	1,0000
2070232	SOLST 150 2000LM 940 DALI SB	15	2000	1,0000	1,0000	1,0000	1,0000	0,0000	1,0000
2070233	SOLST 200 2300LM 930 DALI SB	17	2300	1,3840	0,9467	1,3460	2,0720	0,0000	1,3081
2070234	SOLST 200 2400LM 940 DALI SB	17	2400	1,3840	0,9467	1,3460	2,0720	0,0000	1,3081
2070414	SOLSTICE 150 1800LM 930 DALI SEMIMATTW	15	1550	1,0000	1,0000	1,0000	1,0000	0,0000	1,0000
2070415	SOLSTICE 150 1900LM 940 DALI SEMIMATTW	15	1600	1,0000	1,0000	1,0000	1,0000	0,0000	1,0000
2070416	SOLSTICE 200 2200LM 930 DALI SEMIMATTW	17	2000	1,3840	0,9467	1,3460	2,0720	0,0000	1,3081
2070417	SOLSTICE 200 2300LM 940 DALI SEMIMATTW	17	2100	1,3840	0,9467	1,3460	2,0720	0,0000	1,3081
2070418	SOLST 150 3000LM 930 DALI	24	3000	1,0000	1,0000	1,0000	1,0000	0,0000	1,0000
2070419	SOLST 150 3100LM 940 DALI	24	3100	1,0000	1,0000	1,0000	1,0000	0,0000	1,0000

Table 24: Extrapolation coefficients at product level for SSC

Product code	Product name	Pow-er (W)	Lighting output (lm)	Manufactur-ing stage (A1-A3)	Distribu-tion stage (A4)	Installa-tion stage (A5)	Use stage (B6)	EOL stage (C1 to C4)	Benefits stage (D)
2070139	SOLST 150 1900LM 930 SSC01D	15	1900	1,0000	1,0000	1,0000	1,5000	1,0000	1,0000
2070140	SOLST 150 2000LM 940 SSC01D	15	2000	1,0000	1,0000	1,0000	1,5000	1,0000	1,0000
2070143	SOLST 150 1450LM LUMI 930 SSC01D	17	1450	1,0000	1,0000	1,0000	1,7000	1,0000	1,0000
2070144	SOLST 150 1550LM LUMI 940 SSC01D	17	1550	1,0000	1,0000	1,0000	1,7000	1,0000	1,0000
2070145	SOLST 150 LUMI HCL TW SSC01D	22,5	1650	1,0000	1,0000	1,0000	2,2500	1,0000	1,0000
2070156	SOLST 200 2300LM 930 SSC01D	17	2300	1,3081	1,2626	0,9467	1,7000	1,4049	1,3081
2070157	SOLST 200 2400LM 940 SSC01D	17	2400	1,3081	1,2626	0,9467	1,7000	1,4049	1,3081
2070162	SOLST 200 1800LM LUMI 930 SSC01D	18	1800	1,3081	1,2626	0,9467	1,8000	1,4049	1,3081
2070163	SOLST 200 1900LM LUMI 940 SSC01D	18	1900	1,3081	1,2626	0,9467	1,8000	1,4049	1,3081
2070164	SOLST 200 LUMI HCL TW SSC01D	22	2050	1,3081	1,2626	0,9467	2,2000	1,4049	1,3081
2070235	SOLST 150 1250LM 930 SSC01D GB	15	1250	1,0000	1,0000	1,0000	1,5000	1,0000	1,0000
2070236	SOLST 150 1300LM 940 SSC01D GB	15	1300	1,0000	1,0000	1,0000	1,5000	1,0000	1,0000
2070237	SOLST 200 1700LM 930 SSC01D GB	17	1700	1,3081	1,2626	0,9467	1,7000	1,4049	1,3081
2070238	SOLST 200 1800LM 940 SSC01D GB	17	1800	1,3081	1,2626	0,9467	1,7000	1,4049	1,3081
2070239	SOLST 150 1900LM 930 SSC01D SB	15	1900	1,0000	1,0000	1,0000	1,5000	1,0000	1,0000
2070240	SOLST 150 2000LM 940 SSC01D SB	15	2000	1,0000	1,0000	1,0000	1,5000	1,0000	1,0000
2070241	SOLST 200 2300LM 930 SSC01D SB	17	2300	1,3081	1,2626	0,9467	1,7000	1,4049	1,3081

Product code	Product name	Pow-er (W)	Lighting output (lm)	Manufactur-ing stage (A1-A3)	Distribu-tion stage (A4)	Installa-tion stage (A5)	Use stage (B6)	EOL stage (C1 to C4)	Benefits stage (D)
2070242	SOLST 200 2400LM 940 SSC01D SB	17	2400	1,3081	1,2626	0,9467	1,7000	1,4049	1,3081
2070390	SOLST 150 1000LM 930 SSC01D BB	15	1000	1,0000	1,0000	1,0000	1,5000	1,0000	1,0000
2070391	SOLST 150 1050LM 940 SSC01D BB	15	1050	1,0000	1,0000	1,0000	1,5000	1,0000	1,0000
2070392	SOLST 200 1500LM 930 SSC01D BB	17	1500	1,3081	1,2626	0,9467	1,7000	1,4049	1,3081
2070393	SOLST 200 1600LM 940 SSC01D BB	17	1600	1,3081	1,2626	0,9467	1,7000	1,4049	1,3081
2070394	SOLST 150 1800LM 930 SSC01D WW	15	1800	1,0000	1,0000	1,0000	1,5000	1,0000	1,0000
2070395	SOLST 150 1850LM 940 SSC01D WW	15	1850	1,0000	1,0000	1,0000	1,5000	1,0000	1,0000
2070396	SOLST 200 2300LM 930 SSC01D WW	17	2300	1,3081	1,2626	0,9467	1,7000	1,4049	1,3081
2070397	SOLST 200 2400LM 940 SSC01D WW	17	2400	1,3081	1,2626	0,9467	1,7000	1,4049	1,3081

DALI(DA) Digital Addressable Lighting Interface

SSA SylSmart connected standalone (Silvair)

SSC SylSmart connected standalone (Casambi)