



**ENVIRONMENTAL
PRODUCT DECLARATION**



PRODUCT ENVIRONMENTAL PROFILE – E-LINE NEXT

Reference product: 7651 HE+LW 80-840ETDD L150 01

Registration number	TRLX-00006-V01.01-EN	Drafting rules	PCR-ed4-EN-2021 09 06
		Supplemented by	PSR-0014-ed2.0-EN2023 07 13
Verifier accreditation number	VH45	Information and reference documents	www.pep-ecopassport.org
Date of issue	24.07.2024	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 or EN 50693:2019			
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"			



Company information:

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1. GENERAL INFORMATION

1.1 Product information

LED gear tray for continuous line system E-Line 7651 Fix. Version for use in applications in which continuous lines must comply with the especially high requirements for temperature resistance, luminaire efficiency and service life. Gear trays with lengths of 1475 mm are suitable for setting up new systems as well as for refurbishment applications in existing systems with E-Line T5N/LED continuous line systems. Compliant to DIN 10500. The luminaires are suitable for applications in HACCP, IFS and/or BRC Global Standard Foodcertified companies in the food and beverage industries. For combining with E-Line Fix 0765... trunking. Compatible with E-Line T5N/LED 07650... support profiles. Gear tray in combination with accessory 07650Fi...IP64 (trunking, cover, end cap) suitable for applications requiring higher protection ratings (IP64) as well as for use in locations exposed to fire hazards according to DIN EN 60598-2-24 (D identification). Mounting to trunking with tool-free stainless steel snap fasteners. Correct mounting of the gear tray with the trunking is confirmed by a snap-in noise. The transparent mounting elements made of UV-stabilised PC can be removed after successful installation, thus ensuring theft and disassembly protection. Due to the design, the harmonious appearance of the lighting system is also guaranteed when various optical systems are combined within a continuous line system. Light distribution characteristic: wide, Beam spread C0: 89°, Beam spread C90: 88°, Main beam angle: +/- 20°. The optical system consists of a PMMA lens optic with three matched, photometrically effective sections and thus ensures uniform light distribution and homogeneous illumination. The flat surface makes cleaning the luminaire easier. Particularly suitable for wide-area illumination. The light distribution characteristic of the gear tray is determined by the lens concept and requires no further components. Recommended installation height: 4 - 8 m. With two LED modules (2 x 96 LED). Light generation is free of infrared (IR) and ultraviolet (UV) components. The luminaire luminous flux of the gear tray is electronically parameterised in the production process according to customer requirements. Parameterised luminaire luminous flux of the gear tray: 8.400 lm, connected load 47 Watt, luminous efficiency of luminaire 179 lm/W. General Colour rendering index (CRI) > 80, correlated colour temperature (CCT) 4000 K. Colour locus tolerance (initial MacAdam) ≤ 3 SDCM. Mean rated service life L80 (tq 50 °C) = 100.000 h. Gear tray of sheet steel, coated white. Length of the gear tray 1.474 mm. Permissible ambient temperature (ta) 50 °C. protection rating (DIN EN 60529): IP20 Safety class (EN 61140): I. impact resistance level in accordance with IEC 62262: IK03, testing temperature of wire glow test in accordance with IEC 60695-2-11: 650 °C. Self-actuating electrical connection via plug contacts with phase selection. Phase selection is without use of tools. With mechanical misassembly protection. With electronic transformer, digitally dimmable (DALI). Control gear unit according to DALI-2 standard (EN 62386). The luminaire can be equipped with the Monitoring Ready (MOR) functionality on request. The luminaire complies with fundamental requirements of applicable EU regulations and product safety legislation and bears the CE symbol. A special online tool is available for the simple and fast planning and configuration process of the application. The resource-optimised packaging concept of the continuous-row components simplifies installation and protects the environment. The luminaire is also ENEC-certified by an independent testing authority. With TRILUX after-sales promise: the luminaire is available for 10 years and spare parts (LED module, control gear unit and optical system) are available for 15 years from date of invoice. The right to make reasonable modifications in the interests of progress is reserved.

1. GENERAL INFORMATION

Table 1: Key technological data

Information	Unit	
Light source	-	Integrated LED module
Power supply	-	Integrated power supply
Color temperature	K	4000
Protection index for water and dust (IP)	-	IP20
Impact resistance index (IK)	-	IK03
Nominal operating voltage	V	220-240
Declared lifetime of the luminaire	Hours	100.000
Declaration lifetime of the light source	Hours	100.000
Outgoing luminous flux/Useful output flux	Lumen	8.400
Electrical input power	W	47
Luminous efficiency	Lumen/W	179
Dimension	mm	1.474 x 62 x 50
Reference use scenario	-	Industry
Lifetime in years according to reference use scenario	yr	25

1.2 Goal and Scope

Following information have been used to generate the PEP:

Table 2: Goal and Scope

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*	0.0416 pieces of product
Life cycle stages covered	Cradle-to-grave and Module D
Product category according to PSR	Luminaires
Product family name	E-LINE NEXT
All products of the product family (* "X" refer to placeholders for different product codes)	<ul style="list-style-type: none"> • 7651 HE+ LW 80-840 ETDD L150 01 (reference product) • 7651 xx xxx HE xx (-xx) xx-xxx ET xxx L75 xx xx • 7651 xx xxx HE xx (-xx) xx-xxx ETDD xxx L75 xx xx • 7651 xx xxx HE xx (-xx) xx-xxx ET xxx L150 xx xx • 7651 xx xxx HE xx (-xx) xx-xxx ETDD xxx L150 xx xx • 7651 xx xxx HE+ xx (-xx) xx-xxx ET xxx L150 xx xx • 7651 xx xxx HE+ xx (-xx) xx-xxx ETDD xxx L150 xx xx • 7651 xx xxx HE xx (-xx) xx-xxx ET xxx L225 xx xx • 7651 xx xxx HE xx (-xx) xx-xxx ETDD xxx L225 xx xx • 7651 xx xxx HE+ xx (-xx) xx-xxx ET xxx L225 xx xx • 7651 xx xxx HE+ xx (-xx) xx-xxx ETDD xxx L225 xx xx
Extrapolation rules (if family PEP)	The tables in the last section provide information about the used extrapolation rules and the resulting extrapolation factors according to the applied PSR.

* The reference flow is calculated as: $(1,000/\text{outgoing luminous flux of the analyzed product in lumens}) \times (35,000/\text{declared product lifetime of the analyzed product in hours})$

Consequently, the reference flow of the following product correspond to: $(1,000/8,400) \times (35,000/100,000) = 0.0416$

2. CONSTITUENT MATERIALS

2.1 Overview

The product composition is shown in the following table.

Table 3: Product composition

	Weight [in kg]	Share [in %]
Total weight	3.900	100
Product	3.350	86
Packaging	0.550	14
Additional equipment	0	0

2.2 Product

The material composition of the product is shown in the following table.

Table 4: Material composition - product

	Weight [in kg]	Share [in %]
Total weight	3.350	100
Metals	2.326	69
• Steel	2.326	69
Plastics	0.407	13
• Polymethyl methacrylate (PMMA)	0.338	10
• Polyamide (PA)	0.062	2
• Other	0.007	<1
Electronics (incl. wires)	0.617	18

2.3 Packaging

The product composition is shown in the following table.

Table 5: Material composition – packaging

	Weight [in kg]	Share [in %]
Total weight	0.550	100
Paper/cardboard	0.528	96
Plastics	0.022	4

3. INFORMATION ON LIFE CYCLE STAGES



3.1 Manufacturing stage (A1-A3)

The product components are manufactured or assembled by TRILUX GmbH & Co. KG in Arnsberg (Germany). The production sites in Arnsberg, Alhama de Aragón and Zaragoza (both Spain) have certified environmental management systems in accordance with ISO 14001. The Arnsberg site also has a certified energy management system according with ISO 50001. TRILUX products are manufactured in compliance with RoHS 2011/65/EU and REACH 1907/2006 declarations.

The energy model used in manufacturing is based on Sphera's Managed LCA Content and refers to the German average electricity grid mix.



3.2 Distribution stage (A4)

The main market of the product is Europe and there is no specific data available. For this reason, an intracontinental transport (3,500 km by truck (diesel driven, EURO 0-6, >27t payload) to the place of use following PEP-PCR-ed4-EN-2021 09 06 is considered.



3.3 Installation stage (A5)

The product can easily be installed without any special tool. No energy or material input is required. Packaging waste is treated according to the scenario given in PEP-PSR-0014-ed2-EN-2023 07 13.



3.4 Use stage (B1-B7)

The product has no direct emissions (B1). No maintenance (B2), repair (B3), replacement (B4), or refurbishment (B5) is required. The use of the product does consume electricity (B6), but no water (B7).

The operational electricity consumption over the entire lifetime of the product is 2,350 kWh. It has been calculated according to PSR edition 2. The used energy model refers to an average European electricity grid mix from Sphera's Managed LCA Content.



3.5 End-of-life stage (C1-C4)

The product falls under the Waste from Electrical and Electronic Equipment (WEEE) directive 2012/19/EU. Therefore, a collection rate of 100% and a typical end-of-life scenario for electronic products is assumed. All (mechanical and electronic) metals are recycled. Plastic & renewable materials are incinerated with energy recovery. Batteries & glass are landfilled.

For the transport to end-of-life treatment 1,000 km by truck according to PEP PCR is considered.

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

The recycling of the product (incl. packaging) and incineration with energy recovery generates environmental benefits and loads beyond the system boundaries (D). The calculation of this module is in line with the formulas described in PEP-PCR-ed4-EN-2021 09 06. The amount of the material flows used for the calculation are listed in the table below.

3. INFORMATION ON LIFE CYCLE STAGES

Table 7: Material flows for benefits and loads beyond the system boundaries per functional unit

	Weight [in kg]
Total weight going into reuse	0
Total weight of product going into recycling	1.08E-01
Total weight of product going into incineration with energy recovery	3.13E-02
Total weight of packaging going into recycling	2.35E-02
Total weight of packaging going into incineration with energy recovery	7.76E-03

4. ENVIRONMENTAL INFORMATION

The environmental information included in this study cover all stages of the life cycle („cradle-to-grave“). The life cycle is divided into manufacturing stage (A1-A3), distribution stage (A4), installation stage (A5), use stage (B1-B7, but only applicable modules are shown), End-of-life stage (C1-C4) and benefits and loads beyond the system boundaries (D). The results refer to the core environmental impact indicators and mandatory indicators describing resource use, waste categories, and output flows according to PEP-PCR-ed4,- EN-2021 09 06 and EN 15804+A2:2019.

The results have been calculated using the LCA Software “LCA for Experts 10” and the LCI database “Sphera Managed LCA Content”.

4.1 Results per functional unit

The following results of the environmental declaration have been developed, considering an outgoing artificial luminous flux of 1,000 lumens over a reference lifetime of 35,000 hours.

Acronyms: GWP-total=Global Warming Potential total; GWP-biogenic=Global Warming Potential biogenic; GWP-fossil=Global Warming Potential fossil; GWP-luluc=Global Warming Potential land use and land use change; ODP=Ozone Depletion; AP=Acidification; E=Eutrophication; POCP=Photochemical ozone formation; ADPE=Depletion of abiotic resources-minerals and metals; ADPF=Depletion of abiotic resources-fossil fuels; WDP=Water re-source deprivation; PERE=Renewable primary energy (without raw material); PERM=Renewable primary energy (raw material); PERT=Total use of renewable primary energy; PENRE=Non-renewable primary energy (without raw material); PENRM=Non-renewable primary energy (raw material); PENRT=Total use of non-renewable primary energy; SM=Use of secondary materials; RSF=Use of renewable secondary fuels; NRSF=Use of non-renewable secondary fuels; FW=Net use of fresh water; HWD=Hazardous waste disposed; NHWD=Non-hazardous waste disposed; RWD=Radioactive waste disposed; CRU=Components for reuse; MFR=Materials for recycling; MER=Materials for energy recovery; EEE=Exported electricity; EET=Exported thermal energy; Biog. C in product=Biogenic carbon content of the product; Biog. C in packaging=Biogenic carbon content of the associated packaging

4. ENVIRONMENTAL INFORMATION

Table 8: Results core environmental impact indicators per functional unit (0.162 kg product incl. packaging)

Impact category	Unit	Total (excl. D)	Manufacturing			Distribution	Installation
			A1	A2	A3	A4	A5
GWP - total	kg CO ₂ eq.	3.17E+01	7.24E-01	1.69E-02	1.61E-01	4.28E-02	1.90E-02
GWP - fossil	kg CO ₂ eq.	3.14E+01	7.28E-01	1.61E-02	1.52E-01	4.20E-02	1.22E-02
GWP - biogenic	kg CO ₂ eq.	2.77E-01	-5.07E-03	6.73E-04	8.84E-03	7.45E-04	6.71E-03
GWP - luluc	kg CO ₂ eq.	4.37E-03	5.70E-04	9.65E-05	1.59E-04	1.04E-04	4.50E-05
ODP	kg CFC-11 eq.	5.66E-10	2.67E-12	1.75E-15	1.75E-12	3.57E-15	2.03E-14
AP	Mole of H+ eq.	6.91E-02	2.96E-03	1.52E-04	2.18E-04	7.31E-04	2.08E-05
EP - freshwater	kg P eq.	1.19E-04	3.75E-06	3.94E-08	1.32E-06	4.78E-08	3.06E-07
EP - marine	kg N eq.	1.65E-02	4.75E-04	5.48E-05	8.83E-05	2.62E-04	9.38E-06
EP - terrestrial	Mole of N eq.	1.72E-01	5.01E-03	6.03E-04	8.94E-04	2.87E-03	8.79E-05
POCP	kg NMVOC eq.	4.42E-02	1.51E-03	1.48E-04	2.40E-04	7.20E-04	1.99E-05
ADPE	kg Sb eq.	6.19E-05	5.72E-05	7.43E-10	2.44E-08	1.02E-09	4.43E-09
ADPF	MJ	6.53E+02	9.39E+00	2.13E-01	2.32E+00	5.30E-01	1.60E-01
WDP	m ³ world equiv.	6.94E+00	1.40E-01	1.35E-04	5.40E-03	1.86E-04	7.29E-04

Impact category	Unit	Use	End of life				Benefits and loads beyond the system boundaries stage
			B2	B6	C2	C3	C4
GWP - total	kg CO ₂ eq.	0.00E+00	3.07E+01	1.02E-02	5.59E-02	0.00E+00	-2.50E-01
GWP - fossil	kg CO ₂ eq.	0.00E+00	3.04E+01	9.45E-03	5.58E-02	0.00E+00	-2.77E-01
GWP - biogenic	kg CO ₂ eq.	0.00E+00	2.65E-01	6.15E-04	3.03E-05	0.00E+00	2.67E-02
GWP - luluc	kg CO ₂ eq.	0.00E+00	3.31E-03	8.87E-05	1.41E-06	0.00E+00	-3.07E-04
ODP	kg CFC-11 eq.	0.00E+00	5.62E-10	1.25E-15	7.35E-14	0.00E+00	1.97E-13
AP	Mole of H+ eq.	0.00E+00	6.50E-02	1.54E-05	2.05E-05	0.00E+00	-1.33E-03
EP - freshwater	kg P eq.	0.00E+00	1.14E-04	3.50E-08	1.67E-08	0.00E+00	-5.73E-07
EP - marine	kg N eq.	0.00E+00	1.56E-02	5.93E-06	6.46E-06	0.00E+00	-1.93E-04
EP - terrestrial	Mole of N eq.	0.00E+00	1.62E-01	6.81E-05	8.91E-05	0.00E+00	-2.05E-03
POCP	kg NMVOC eq.	0.00E+00	4.15E-02	1.36E-05	1.71E-05	0.00E+00	-6.18E-04
ADPE	kg Sb eq.	0.00E+00	4.71E-06	6.35E-10	5.68E-10	0.00E+00	-5.01E-05
ADPF	MJ	0.00E+00	6.40E+02	1.30E-01	8.90E-02	0.00E+00	-2.56E+00
WDP	m ³ world equiv.	0.00E+00	6.78E+00	1.16E-04	6.90E-03	0.00E+00	-4.03E-02

4. ENVIRONMENTAL INFORMATION

Table 9: Results indicators describing resource use, waste categories, and output flows per functional unit (0.162 kg product incl. packaging)

Impact category	Unit	Total (excl. D)	Manufacturing			Distribution	Installation
			A1	A2	A3	A4	A5
PERE	MJ	3.85E+02	1.72E+00	1.06E-02	7.06E-01	1.27E-02	7.18E-02
PERM	MJ	4.15E-01	1.06E-01	0.00E+00	3.42E-01	0.00E+00	-3.27E-02
PERT	MJ	3.86E+02	1.82E+00	1.06E-02	1.05E+00	1.27E-02	3.91E-02
PENRE	MJ	6.53E+02	8.90E+00	2.14E-01	2.29E+00	5.32E-01	1.75E-01
PENRM	MJ	3.10E-02	5.10E-01	0.00E+00	2.71E-02	0.00E+00	-1.49E-02
PENRT	MJ	6.53E+02	9.41E+00	2.14E-01	2.32E+00	5.32E-01	1.60E-01
SM	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	M3	3.17E-01	6.65E-03	1.17E-05	7.70E-04	1.43E-05	1.58E-04
HWD	kg	1.62E-07	1.44E-07	6.67E-13	1.31E-08	1.67E-12	4.91E-09
NHWD	kg	5.20E-01	3.65E-02	2.83E-05	4.96E-03	5.79E-05	2.31E-03
RWD	kg	1.02E-01	2.26E-04	3.51E-07	9.72E-05	7.31E-07	3.46E-06
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	1.32E-01	0.00E+00	0.00E+00	5.10E-03	0.00E+00	1.84E-02
MER	kg	3.91E-02	0.00E+00	0.00E+00	5.44E-03	0.00E+00	2.32E-03
EEE	MJ	9.14E-02	1.62E-03	0.00E+00	0.00E+00	0.00E+00	6.58E-03
EET	kg	2.06E-01	2.90E-03	0.00E+00	0.00E+00	0.00E+00	1.04E-02
Biog. C in product	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biog. C in packaging	kg	1.14E+00	2.69E-01	0.00E+00	8.69E-01	0.00E+00	0.00E+00

Impact category	Unit	Use	End of life				Benefits and loads beyond the system boundaries stage
			B2	B6	C2	C3	
PERE	MJ	0.00E+00	3.83E+02	9.50E-03	4.57E-02	0.00E+00	-4.22E-01
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	0.00E+00	3.83E+02	9.50E-03	4.57E-02	0.00E+00	-4.22E-01
PENRE	MJ	0.00E+00	6.41E+02	1.31E-01	5.80E-01	0.00E+00	-2.58E+00
PENRM	MJ	0.00E+00	0.00E+00	0.00E+00	-4.91E-01	0.00E+00	0.00E+00
PENRT	MJ	0.00E+00	6.41E+02	1.31E-01	8.90E-02	0.00E+00	-2.58E+00
SM	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.10E-01
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	M3	0.00E+00	3.09E-01	1.04E-05	1.78E-04	0.00E+00	-1.32E-03
HWD	kg	0.00E+00	0.00E+00	4.06E-13	1.78E-10	0.00E+00	-5.16E-09

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NHWD	kg	0.00E+00	4.69E-01	2.00E-05	6.68E-03	0.00E+00	-1.98E-02
RWD	kg	0.00E+00	1.02E-01	2.45E-07	1.04E-05	0.00E+00	-9.29E-06
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	0.00E+00	0.00E+00	1.08E-01	0.00E+00	0.00E+00
MER	kg	0.00E+00	0.00E+00	0.00E+00	3.13E-02	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	0.00E+00	0.00E+00	8.32E-02	0.00E+00	0.00E+00
EET	kg	0.00E+00	0.00E+00	0.00E+00	1.93E-01	0.00E+00	0.00E+00
Biog. C in product	kg	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

4. ENVIRONMENTAL INFORMATION

4.2 Results per unit of product

The following results of the environmental declaration have been developed, considering one piece of product.

Table 10: Results core environmental impact indicators per unit of product

Impact category	Unit	Total (excl. D)	Manufacturing			Distribution	Installation
			A1	A2	A3	A4	A5
GWP - total	kg CO ₂ eq.	7.63E+02	1.74E+01	4.06E-01	3.87E+00	1.03E+00	4.57E-01
GWP - fossil	kg CO ₂ eq.	7.56E+02	1.75E+01	3.88E-01	3.65E+00	1.01E+00	2.94E-01
GWP - biogenic	kg CO ₂ eq.	6.66E+00	-1.22E-01	1.62E-02	2.12E-01	1.79E-02	1.61E-01
GWP - luluc	kg CO ₂ eq.	1.05E-01	1.37E-02	2.32E-03	3.83E-03	2.50E-03	1.08E-03
ODP	kg CFC-11 eq.	1.36E-08	6.41E-11	4.22E-14	4.20E-11	8.58E-14	4.88E-13
AP	Mole of H ⁺ eq.	1.66E+00	7.12E-02	3.65E-03	5.25E-03	1.76E-02	5.01E-04
EP - freshwater	kg P eq.	2.86E-03	9.02E-05	9.46E-07	3.16E-05	1.15E-06	7.36E-06
EP - marine	kg N eq.	3.96E-01	1.14E-02	1.32E-03	2.12E-03	6.30E-03	2.26E-04
EP - terrestrial	Mole of N eq.	4.14E+00	1.20E-01	1.45E-02	2.15E-02	6.91E-02	2.11E-03
POCP	kg NMVOC eq.	1.06E+00	3.62E-02	3.56E-03	5.77E-03	1.73E-02	4.78E-04
ADPE	kg Sb eq.	1.49E-03	1.38E-03	1.79E-08	5.86E-07	2.46E-08	1.06E-07
ADPF	MJ	1.57E+04	2.26E+02	5.13E+00	5.57E+01	1.27E+01	3.85E+00
WDP	m ³ world equiv.	1.67E+02	3.36E+00	3.26E-03	1.30E-01	4.48E-03	1.75E-02

Impact category	Unit	Use	End of life				Benefits and loads beyond the system boundaries stage
			B2	B6	C2	C3	
GWP - total	kg CO ₂ eq.	0.00E+00	7.38E+02	2.44E-01	1.34E+00	0.00E+00	-6.02E+00
GWP - fossil	kg CO ₂ eq.	0.00E+00	7.32E+02	2.27E-01	1.34E+00	0.00E+00	-6.66E+00
GWP - biogenic	kg CO ₂ eq.	0.00E+00	6.36E+00	1.48E-02	7.27E-04	0.00E+00	6.41E-01
GWP - luluc	kg CO ₂ eq.	0.00E+00	7.95E-02	2.13E-03	3.39E-05	0.00E+00	-7.38E-03
ODP	kg CFC-11 eq.	0.00E+00	1.35E-08	3.00E-14	1.77E-12	0.00E+00	4.74E-12
AP	Mole of H ⁺ eq.	0.00E+00	1.56E+00	3.69E-04	4.94E-04	0.00E+00	-3.21E-02
EP - freshwater	kg P eq.	0.00E+00	2.73E-03	8.42E-07	4.02E-07	0.00E+00	-1.38E-05
EP - marine	kg N eq.	0.00E+00	3.74E-01	1.43E-04	1.55E-04	0.00E+00	-4.63E-03
EP - terrestrial	Mole of N eq.	0.00E+00	3.91E+00	1.64E-03	2.14E-03	0.00E+00	-4.93E-02
POCP	kg NMVOC eq.	0.00E+00	9.97E-01	3.28E-04	4.10E-04	0.00E+00	-1.49E-02
ADPE	kg Sb eq.	0.00E+00	1.13E-04	1.53E-08	1.37E-08	0.00E+00	-1.20E-03
ADPF	MJ	0.00E+00	1.54E+04	3.14E+00	2.14E+00	0.00E+00	-6.16E+01

4. ENVIRONMENTAL INFORMATION

WDP	m ³ world equiv.	0.00E+00	1.63E+02	2.78E-03	1.66E-01	0.00E+00	-9.68E-01
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5. EXTRAPOLATION RULE FOR PRODUCT VARIANTS

Table 11: Results indicators describing resource use, waste categories, and output flows per unit of product

Impact category	Unit	Total (excl. D)	Manufacturing			Distribution	Installation
			A1	A2	A3	A4	A5
PERE	MJ	9.26E+03	4.12E+01	2.55E-01	1.70E+01	3.05E-01	1.73E+00
PERM	MJ	9.97E+00	2.55E+00	0.00E+00	8.21E+00	0.00E+00	-7.87E-01
PERT	MJ	9.27E+03	4.38E+01	2.55E-01	2.52E+01	3.05E-01	9.40E-01
PENRE	MJ	1.57E+04	2.14E+02	5.15E+00	5.51E+01	1.28E+01	4.21E+00
PENRM	MJ	7.45E-01	1.22E+01	0.00E+00	6.51E-01	0.00E+00	-3.58E-01
PENRT	MJ	1.57E+04	2.26E+02	5.15E+00	5.57E+01	1.28E+01	3.86E+00
SM	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	M3	7.62E+00	1.60E-01	2.82E-04	1.85E-02	3.43E-04	3.81E-03
HWD	kg	3.90E-06	3.46E-06	1.60E-11	3.15E-07	4.01E-11	1.18E-07
NHWD	kg	1.25E+01	8.78E-01	6.79E-04	1.19E-01	1.39E-03	5.55E-02
RWD	kg	2.46E+00	5.42E-03	8.43E-06	2.34E-03	1.76E-05	8.31E-05
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	3.16E+00	0.00E+00	0.00E+00	1.23E-01	0.00E+00	4.42E-01
MER	kg	9.40E-01	0.00E+00	0.00E+00	1.31E-01	0.00E+00	5.57E-02
EEE	MJ	2.20E+00	3.90E-02	0.00E+00	0.00E+00	0.00E+00	1.58E-01
EET	kg	4.96E+00	6.97E-02	0.00E+00	0.00E+00	0.00E+00	2.51E-01
Biog. C in product	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biog. C in packaging	kg	2.73E+01	6.46E+00	0.00E+00	2.09E+01	0.00E+00	0.00E+00

Impact category	Unit	Use	End of life				Benefits and loads beyond the system boundaries stage
			B2	B6	C2	C3	
PERE	MJ	0.00E+00	9.20E+03	2.28E-01	1.10E+00	0.00E+00	-1.01E+01
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	0.00E+00	9.20E+03	2.28E-01	1.10E+00	0.00E+00	-1.01E+01
PENRE	MJ	0.00E+00	1.54E+04	3.15E+00	1.39E+01	0.00E+00	-6.21E+01
PENRM	MJ	0.00E+00	0.00E+00	0.00E+00	-1.18E+01	0.00E+00	0.00E+00
PENRT	MJ	0.00E+00	1.54E+04	3.15E+00	2.14E+00	0.00E+00	-6.21E+01
SM	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.63E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	M3	0.00E+00	7.43E+00	2.50E-04	4.28E-03	0.00E+00	-3.17E-02
HWD	kg	0.00E+00	0.00E+00	9.75E-12	4.27E-09	0.00E+00	-1.24E-07
NHWD	kg	0.00E+00	1.13E+01	4.80E-04	1.61E-01	0.00E+00	-4.75E-01

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RWD	kg	0.00E+00	2.45E+00	5.89E-06	2.49E-04	0.00E+00	-2.23E-04
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	0.00E+00	0.00E+00	0.00E+00	2.60E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	0.00E+00	0.00E+00	7.53E-01	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	0.00E+00	0.00E+00	2.00E+00	0.00E+00	0.00E+00
EET	kg	0.00E+00	0.00E+00	0.00E+00	4.64E+00	0.00E+00	0.00E+00
Biog. C in product	kg	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

5. Extrapolation coefficients

The extrapolation coefficients included in the PEP have been developed according to the valid PCR & PSR. The table below shows the key properties of the reference product, function as extrapolation basis.

Table 12: Reference values for the extrapolation

Parameter	Unit	Value
Weight of structural/mechanical parts	kg	2.73
Weight of power equipment	kg	0.55
Weight of light source	kg	0.07
Weight of light management system	kg	0
Weight of product (excl. packaging)	kg	3.35
Weight of packaging	kg	0.55
Typical power consumption	W	47
Lumen output	lm	8400
Energy saving coefficient	-	0.5
Lifetime	hr	100000

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

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

The required extrapolation coefficients at the product level are listed in the following table. The Lighting output should be taken from the datasheet of the individual variant (value for phi).

Table 13: Extrapolation coefficients at the product level

Product variant	Fabrication stage	Distribution stage	Installation stage	Use stage	End of life stage
7651 xx xxx HE xx (-xx) xx-xxx ET xxx L75 xx xx	0.59	0.56	0.49	1.40 x P in datasheet / 47 W	0.57
7651 xx xxx HE xx (-xx) xx-xxx ETDD xxx L75 xx xx	0.59	0.56	0.49	0.70 x P in datasheet / 47 W	0.57
7651 xx xxx HE xx (-xx) xx-xxx ET xxx L150 xx xx	1.00	1.00	1.00	1.40 x P in datasheet / 47 W	1.00
7651 xx xxx HE xx (-xx) xx-xxx ETDD xxx L150 xx xx	1.00	1.00	1.00	0.70 x P in datasheet / 47 W	1.00

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7651 xx xxx HE+ xx (-xx) xx-xxx ET xxx L150 xx xx	1.00	1.00	1.00	2.00 x P in datasheet / 47 W	1.00
7651 xx xxx HE+ xx (-xx) xx-xxx ETDD xxx L150 xx xx	1.00	1.00	1.00	1.00 x P in datasheet / 47 W	1.00
7651 xx xxx HE xx (-xx) xx-xxx ET xxx L225 xx xx	1.62	1.58	1.38	1.40 x P in datasheet / 47 W	1.61
7651 xx xxx HE xx (-xx) xx-xxx ETDD xxx L225 xx xx	1.62	1.58	1.38	0.70 x P in datasheet / 47 W	1.61
7651 xx xxx HE+ xx (-xx) xx-xxx ET xxx L225 xx xx	1.62	1.58	1.38	2.00 x P in datasheet / 47 W	1.61
7651 XX XXX HE+ XX (-XX) XX-XXX ETDD XXX L225 XX XX	1.62	1.58	1.38	1.00 x P in datasheet / 47 W	1.61

