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ENVIRONMENTAL PRODUCT DECLARATION

PRODUCT ENVIRONMENTAL PROFILE – LUCEOS

Reference product: Luceos D/H2-L CDP 6500-840 ETDD 01

Registration number	TRLX-00017-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	10.10.2024	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”



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Company information:

Further technical information can be obtained by contacting:

- TRILUX GmbH & Co. KG, Heidestraße 4, D-59759 Arnsberg, Germany
- or on the website www.trilux.com
- or by E-Mail support@trilux.de

1. GENERAL INFORMATION

1.1 Product information

Versatile luminaire module for suspended and surface-mounted luminaires. In combination with accessories to be ordered separately, the modules are completed to form individual luminaires or continuous lines with continuous light emission surface for surface-mounted or suspended installation. In combination with the accessories to be ordered separately for the desired application, the module is suitable for suspended and surface-mounted installation. Suspended continuous line applications around corners is possible with node to be ordered separately. With highly efficient CDP microprisms. With symmetric limited wide light distribution. Glare evaluation according to UGR rating (EN 12464-1) < 19. VDU workstation-compliant in accordance with 12464-1 Completely harmonious light effect due to homogeneously illuminated light emission. Luminaire luminous flux and light color fixed. LED system with angled LEDs positioned laterally to the light emission aperture and a chamber system for highly effective reflection and transfer of the light. Luminaire luminous flux 5400 lm, connected load 41 W, maximum luminous efficiency of luminaire 151 lm/W. Light colour neutral white, correlated colour temperature (CCT) 4000 K, general colour rendering index (CRI) $R_a > 80$. Colour locus tolerance (initial MacAdam) ≤ 3 SDCM. Mean rated service life $L_{90}(t_{q\ 25\ ^\circ\text{C}}) = 50,000$ h. Luminaire body of extruded aluminium profile. End caps of die-cast aluminium. Surface coated white (RAL 9016). Dimensions (L x W): 1490 mm x 240 mm, luminaire height 20 mm. Permissible ambient temperature (t_a): $25\ ^\circ\text{C} - +$. Safety class (EN 61140): I, protection rating (DIN EN 60529): IP20, impact resistance level in accordance with IEC 62262: IK03, testing temperature of wire glow test in accordance with IEC 60695-2-11: $650\ ^\circ\text{C}$. Weight: 4,1 kg. Electrical connection is established by attaching the connection end cap. Independent electrical connection of assemblies. With electronic transformer, digitally dimmable (DALI). Control gear unit according to DALI-2 standard (EN 62386). Luminaire is switchable and dimmable by means of touch functionality via DALI control terminals (Touch DIM). The control gear unit is replaceable in accordance with the ecodesign requirements (VO (EU) 2019/2020). The luminaire can be equipped with the Monitoring Ready (MOR) functionality on request. The luminaire complies with the fundamental requirements of applicable EU regulations and product safety legislation and bears the CE symbol. The luminaire is also ENEC-certified by an independent testing authority. Luminaire available for 10 years, spare part consisting of control gear unit available for 15 years after the invoice date, subject to reasonable modifications in the interests of progress. Due to the design, the spare parts of LED module and optical system are not available.

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	50.000
Declaration lifetime of the light source	Hours	50.000
Outgoing luminous flux/Useful output flux	Lumen	6.200 (suspended version)
Electrical input power	W	41
Luminous efficiency	Lumen/W	151
Dimension	mm	1.490 x 240 x 20
Reference use scenario	–	Office
Lifetime in years according to reference use scenario	yr	20

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*	0.1129 pieces of product
Life cycle stages covered	Cradle-to-grave and Module D
Product category according to PSR	Luminaires
Product name	Luceos D/H2-L CDP 6500-840 ETDD 01

* 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: $(1,000/6,200) \times (35,000/50,000) = 0.1129$

2. CONSTITUENT MATERIAL

2.1 Overview

The product composition is shown in the following table.

Table 3: Product composition

	Weight [in kg]	Share [in %]
Total weight	4.653	100
Product	4.128	86
Packaging	0.525	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	4.128	100
Metals	2.057	50
• Steel	0.0097	2
• Aluminium	1.960	48
Plastics	1.812	44
• Polymethyl methacrylate (PMMA)	1.730	42
• Polyester	0.063	2
Electronics (incl. wires)	0.259	6

2.3 Packaging

The product composition is shown in the following table.

Table 5: Material composition – packaging

	Weight [in kg]	Share [in %]
Total weight	0.525	100
Paper/cardboard	0.345	66
Plastics	0.180	34

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 primary information on the energy mix of TRILUX.



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 formulars 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	0,00E+00
Total weight of product going into recycling	2,35E-01
Total weight of product going into incineration with energy recovery	2,90E-01
Total weight of packaging going into recycling	1,63E-01
Total weight of packaging going into incineration with energy recovery	2,45E-02

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 (0.1129 kg product incl. packaging)

Impact category	Unit	Total (excl. D)	Manufacturing			Distribution	Installation
			A1	A2	A3	A4	A5
GWP - total	kg CO2 eq.	4,48E+01	5,19E+00	7,77E-02	8,68E-01	1,94E-01	1,78E-01
GWP - fossil	kg CO2 eq.	4,44E+01	5,20E+00	7,30E-02	8,22E-01	1,90E-01	1,19E-01
GWP - biogenic	kg CO2 eq.	4,26E-01	-1,04E-02	4,13E-03	4,36E-02	3,37E-03	5,79E-02
GWP - luluc	kg CO2 eq.	9,08E-03	1,64E-03	5,94E-04	1,57E-03	4,70E-04	3,96E-04
ODP	kg CFC-11 eq.	7,12E-10	1,56E-11	9,01E-15	6,56E-12	1,62E-14	1,94E-13
AP	Mole of H+ eq.	1,04E-01	1,88E-02	3,27E-04	1,45E-03	3,31E-03	1,85E-04
EP - freshwater	kg P eq.	1,67E-04	1,25E-05	2,37E-07	1,22E-05	2,16E-07	2,69E-06
EP - marine	kg N eq.	2,44E-02	3,28E-03	1,20E-04	5,96E-04	1,19E-03	8,24E-05
EP - terrestrial	Mole of N eq.	2,57E-01	3,56E-02	1,33E-03	5,89E-03	1,30E-02	7,77E-04
POCP	kg NMVOC eq.	6,62E-02	9,90E-03	3,13E-04	1,46E-03	3,26E-03	1,75E-04
ADPE	kg Sb eq.	2,51E-04	2,45E-04	4,34E-09	1,86E-07	4,63E-09	3,84E-08
ADPF	MJ	8,99E+02	9,48E+01	9,93E-01	1,30E+01	2,40E+00	1,42E+00
WDP	m³ world equiv.	9,15E+00	7,07E-01	7,91E-04	5,37E-02	8,44E-04	7,62E-03
Impact category	Unit	Use	End of life				Benefits and loads beyond the system boundaries stage
		B2	B6	C2	C3	C4	D
GWP - total	kg CO2 eq.	0,00E+00	3,77E+01	3,83E-02	5,88E-01	0,00E+00	-2,14E+00
GWP - fossil	kg CO2 eq.	0,00E+00	3,73E+01	3,56E-02	5,87E-01	0,00E+00	-2,36E+00
GWP - biogenic	kg CO2 eq.	0,00E+00	3,25E-01	2,32E-03	1,41E-04	0,00E+00	2,22E-01
GWP - luluc	kg CO2 eq.	0,00E+00	4,06E-03	3,34E-04	1,33E-05	0,00E+00	-9,05E-04
ODP	kg CFC-11 eq.	0,00E+00	6,89E-10	4,70E-15	3,99E-13	0,00E+00	-3,10E-12
AP	Mole of H+ eq.	0,00E+00	7,97E-02	5,79E-05	1,52E-04	0,00E+00	-8,02E-03
EP - freshwater	kg P eq.	0,00E+00	1,39E-04	1,32E-07	9,63E-08	0,00E+00	-4,77E-06
EP - marine	kg N eq.	0,00E+00	1,91E-02	2,23E-05	4,48E-05	0,00E+00	-1,53E-03
EP - terrestrial	Mole of N eq.	0,00E+00	1,99E-01	2,57E-04	6,99E-04	0,00E+00	-1,64E-02
POCP	kg NMVOC eq.	0,00E+00	5,09E-02	5,14E-05	1,19E-04	0,00E+00	-4,47E-03
ADPE	kg Sb eq.	0,00E+00	5,77E-06	2,39E-09	3,01E-09	0,00E+00	-8,45E-05
ADPF	MJ	0,00E+00	7,86E+02	4,92E-01	5,18E-01	0,00E+00	-3,25E+01
WDP	m³ world equiv.	0,00E+00	8,32E+00	4,36E-04	6,40E-02	0,00E+00	-1,83E-01

4. ENVIRONMENTAL INFORMATION

Table 9: Results indicators describing resource use, waste categories, and output flows per functional unit (0.1129 kg product incl. packaging)

Impact category	Unit	Total (excl. D)	Manufacturing			Distribution	Installation
			A1	A2	A3	A4	A5
PERE	MJ	4,92E+02	1,91E+01	6,41E-02	2,27E+00	5,76E-02	6,32E-01
PERM	MJ	3,17E+00	3,99E-01	0,00E+00	3,05E+00	0,00E+00	-2,82E-01
PERT	MJ	4,95E+02	1,95E+01	6,41E-02	5,32E+00	5,76E-02	3,50E-01
PENRE	MJ	8,89E+02	7,94E+01	9,96E-01	1,21E+01	2,41E+00	1,75E+00
PENRM	MJ	1,02E+01	1,56E+01	0,00E+00	8,92E-01	0,00E+00	-3,31E-01
PENRT	MJ	9,00E+02	9,49E+01	9,96E-01	1,30E+01	2,41E+00	1,42E+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	4,37E-01	4,78E-02	7,03E-05	6,78E-03	6,47E-05	1,40E-03
HWD	kg	2,38E-07	4,39E-08	3,09E-12	1,51E-07	7,55E-12	4,22E-08
NHWD	kg	1,39E+00	6,59E-01	1,45E-04	6,47E-02	2,62E-04	2,43E-02
RWD	kg	1,28E-01	2,55E-03	1,78E-06	5,87E-04	3,31E-06	3,29E-05
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	9,94E-01	0,00E+00	0,00E+00	5,96E-01	0,00E+00	1,63E-01
MER	kg	3,31E-01	0,00E+00	0,00E+00	1,64E-02	0,00E+00	2,45E-02
EEE	MJ	9,73E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,76E-02
EET	kg	2,20E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,27E-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	8,49E+00	1,01E+00	0,00E+00	7,48E+00	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	4,70E+02	3,58E-02	2,29E-01	0.00E+00	-1,25E+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	4,70E+02	3,58E-02	2,29E-01	0.00E+00	-1,25E+01
PENRE	MJ	0.00E+00	7,86E+02	4,94E-01	6,45E+00	0.00E+00	-3,25E+01
PENRM	MJ	0.00E+00	0,00E+00	0,00E+00	-5,93E+00	0.00E+00	0,00E+00
PENRT	MJ	0.00E+00	7,86E+02	4,94E-01	5,18E-01	0.00E+00	-3,25E+01
SM	kg	0.00E+00	0.00E+00	0,00E+00	0.00E+00	0.00E+00	3,09E-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	3,79E-01	3,92E-05	1,58E-03	0.00E+00	-2,15E-02
HWD	kg	0.00E+00	0,00E+00	1,53E-12	1,05E-09	0.00E+00	-4,17E-08
NHWD	kg	0.00E+00	5,75E-01	7,53E-05	6,58E-02	0.00E+00	-4,29E-01
RWD	kg	0.00E+00	1,25E-01	9,24E-07	4,30E-05	0.00E+00	-2,20E-03
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	2,35E-01	0.00E+00	0,00E+00
MER	kg	0.00E+00	0,00E+00	0,00E+00	2,90E-01	0.00E+00	0,00E+00
EEE	MJ	0.00E+00	0,00E+00	0,00E+00	8,96E-01	0.00E+00	0,00E+00
EET	kg	0.00E+00	0,00E+00	0,00E+00	2,08E+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

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 CO2 eq.	3,97E+02	4,60E+01	6,88E-01	7,68E+00	1,72E+00	1,57E+00
GWP - fossil	kg CO2 eq.	3,93E+02	4,61E+01	6,47E-01	7,28E+00	1,68E+00	1,06E+00
GWP - biogenic	kg CO2 eq.	3,77E+00	-9,18E-02	3,66E-02	3,86E-01	2,99E-02	5,13E-01
GWP - luluc	kg CO2 eq.	8,04E-02	1,46E-02	5,26E-03	1,39E-02	4,16E-03	3,51E-03
ODP	kg CFC-11 eq.	6,30E-09	1,39E-10	7,98E-14	5,81E-11	1,43E-13	1,71E-12
AP	Mole of H+ eq.	9,21E-01	1,66E-01	2,90E-03	1,29E-02	2,93E-02	1,64E-03
EP - freshwater	kg P eq.	1,48E-03	1,11E-04	2,10E-06	1,08E-04	1,92E-06	2,38E-05
EP - marine	kg N eq.	2,16E-01	2,90E-02	1,06E-03	5,28E-03	1,05E-02	7,30E-04
EP - terrestrial	Mole of N eq.	2,28E+00	3,15E-01	1,18E-02	5,22E-02	1,15E-01	6,88E-03
POCP	kg NMVOC eq.	5,86E-01	8,77E-02	2,77E-03	1,29E-02	2,89E-02	1,55E-03
ADPE	kg Sb eq.	2,22E-03	2,17E-03	3,85E-08	1,65E-06	4,10E-08	3,40E-07
ADPF	MJ	7,97E+03	8,40E+02	8,79E+00	1,15E+02	2,13E+01	1,26E+01
WDP	m³ world equiv.	8,11E+01	6,26E+00	7,01E-03	4,76E-01	7,47E-03	6,75E-02
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	8,81E+00	0,00E+00	0,00E+00	5,28E+00	0,00E+00	1,45E+00
MER	kg	2,93E+00	0,00E+00	0,00E+00	1,46E-01	0,00E+00	2,17E-01
EEE	MJ	8,62E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,87E-01
EET	kg	1,95E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,13E+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	7,52E+01	8,97E+00	0,00E+00	6,63E+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	C4	
GWP - total	kg CO2 eq.	0,00E+00	3,34E+02	3,39E-01	5,20E+00	0,00E+00	-1,89E+01
GWP - fossil	kg CO2 eq.	0,00E+00	3,31E+02	3,15E-01	5,20E+00	0,00E+00	-2,09E+01
GWP - biogenic	kg CO2 eq.	0,00E+00	2,87E+00	2,05E-02	1,25E-03	0,00E+00	1,97E+00
GWP - luluc	kg CO2 eq.	0,00E+00	3,59E-02	2,96E-03	1,17E-04	0,00E+00	-8,01E-03
ODP	kg CFC-11 eq.	0,00E+00	6,10E-09	4,16E-14	3,53E-12	0,00E+00	-2,74E-11
AP	Mole of H+ eq.	0,00E+00	7,06E-01	5,13E-04	1,34E-03	0,00E+00	-7,11E-02
EP - freshwater	kg P eq.	0,00E+00	1,23E-03	1,17E-06	8,53E-07	0,00E+00	-4,22E-05
EP - marine	kg N eq.	0,00E+00	1,69E-01	1,98E-04	3,97E-04	0,00E+00	-1,35E-02
EP - terrestrial	Mole of N eq.	0,00E+00	1,77E+00	2,28E-03	6,19E-03	0,00E+00	-1,46E-01
POCP	kg NMVOC eq.	0,00E+00	4,51E-01	4,55E-04	1,06E-03	0,00E+00	-3,95E-02
ADPE	kg Sb eq.	0,00E+00	5,11E-05	2,12E-08	2,67E-08	0,00E+00	-7,48E-04
ADPF	MJ	0,00E+00	6,96E+03	4,36E+00	4,58E+00	0,00E+00	-2,87E+02
WDP	m³ world equiv.	0,00E+00	7,37E+01	3,86E-03	5,67E-01	0,00E+00	-1,62E+00
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	2,08E+00	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	2,57E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	7,93E+00	0,00E+00	0,00E+00
EET	kg	0,00E+00	0,00E+00	0,00E+00	1,84E+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

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	4,36E+03	1,69E+02	5,68E-01	2,01E+01	5,10E-01	5,60E+00
PERM	MJ	2,80E+01	3,54E+00	0,00E+00	2,70E+01	0,00E+00	-2,50E+00
PERT	MJ	4,39E+03	1,73E+02	5,68E-01	4,71E+01	5,10E-01	3,10E+00
PENRE	MJ	7,88E+03	7,03E+02	8,82E+00	1,07E+02	2,13E+01	1,55E+01
PENRM	MJ	9,03E+01	1,38E+02	0,00E+00	7,90E+00	0,00E+00	-2,93E+00
PENRT	MJ	7,97E+03	8,41E+02	8,82E+00	1,15E+02	2,13E+01	1,26E+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	3,87E+00	4,23E-01	6,23E-04	6,00E-02	5,73E-04	1,24E-02
HWD	kg	2,11E-06	3,89E-07	2,74E-11	1,34E-06	6,68E-11	3,74E-07
NHWD	kg	1,23E+01	5,84E+00	1,28E-03	5,73E-01	2,32E-03	2,15E-01
RWD	kg	1,13E+00	2,26E-02	1,58E-05	5,20E-03	2,93E-05	2,91E-04
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	8,81E+00	0,00E+00	0,00E+00	5,28E+00	0,00E+00	1,45E+00
MER	kg	2,93E+00	0,00E+00	0,00E+00	1,46E-01	0,00E+00	2,17E-01
EEE	MJ	8,62E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,87E-01
EET	kg	1,95E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,13E+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	7,52E+01	8,97E+00	0,00E+00	6,63E+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	C4	D
PERE	MJ	0,00E+00	4,16E+03	3,17E-01	2,03E+00	0,00E+00	-1,11E+02
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	4,16E+03	3,17E-01	2,03E+00	0,00E+00	-1,11E+02
PENRE	MJ	0,00E+00	6,96E+03	4,37E+00	5,71E+01	0,00E+00	-2,88E+02
PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	-5,26E+01	0,00E+00	0,00E+00
PENRT	MJ	0,00E+00	6,96E+03	4,37E+00	4,58E+00	0,00E+00	-2,88E+02
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,74E+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	3,36E+00	3,47E-04	1,40E-02	0,00E+00	-1,91E-01
HWD	kg	0,00E+00	0,00E+00	1,35E-11	9,32E-09	0,00E+00	-3,70E-07
NHWD	kg	0,00E+00	5,10E+00	6,67E-04	5,83E-01	0,00E+00	-3,80E+00
RWD	kg	0,00E+00	1,11E+00	8,18E-06	3,81E-04	0,00E+00	-1,95E-02
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	2,08E+00	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	2,57E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	7,93E+00	0,00E+00	0,00E+00
EET	kg	0,00E+00	0,00E+00	0,00E+00	1,84E+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

