Environmental Product Declaration

EPD of multiple products, based on worst-case product, in accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Helags Luminaires

from

Aura Light

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	EPD-IES-0016182
Publication date:	2024-09-06
Valid until:	2029-09-05

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

General information

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): *Product Category Rules for Construction Products PCR 2019:14 v1.3.4 and UN CPC 46539*
PCR review was conducted by: The Technical Committee of the International EPD System. See www.environdec.com for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat *www.environdec.com/contact.*
Life Cycle Assessment (LCA)
LCA accountability: *Felix Jansson & Martyna Mikusinska, Sweco*
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ EPD verification by individual verifier Third-party verifier: Matthew Fishwick, Fishwick Environmental Ltd Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

This EPD follows additional requirements for construction products considered as Electronic or Electric Equipment.

Company information

Owner of the EPD:
Aura Light AB

Contact:
Emil Gustavsson
Mail: Emil.Gustavsson@auralight.com
Phone: +46 73-8003421

Description of the organisation:
Aura Light was founded in 1930 under the brand name LUMA. From here, we have continued to develop our cutting-edge expertise in lighting, offering the market a complete range of tailor-made, high-tech and sustainable lighting solutions.

Product-related or management system-related certifications:
ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018

Name and location of production site(s):
Aura Light
Fönstergatan 17
598 40 Vimmerby
Sweden

Product information

Product name:
Aura Lights Helags product group

Product identification:
Luminaire

Product description:
Helags is a white painted industrial luminaire which, thanks to its wide selection of variants, is also excellent for several other application areas. It is available in three different light distributions: wide, medium, and narrow. Ball-proof in accordance with DIN 18032-3. It has a removable light unit for easy installation, through wiring and terminal blocks in each end. It is available in two lengths, 1 200 mm and 1 500 mm.

This is a multiple-product EPD based on worst-case results that represents Aura Lights Helags product family. The background report included four types of Helags Luminaires to represent the different products in the product family. A range from the lightest, smallest, least equipped and with least power to the heaviest, largest, most equipped and with the highest power is represented by these products. For detailed information about each product within the family, please visit https://www.auralight.com/se/armaturer/helags.

This EPD is representative for the following article numbers within the Helags family:
52238410600, 52238414300, 52138414800, 52138410620, 52138410500, 52228417900, 52128405020, 52138417900, 52128410620, 52238408520, 52238417920, 52238414320,

52128414320, 52238417900, 52228410620, 52218406900, 52128417920, 52218406920, 52228410600, 52138414320, 52238410620, 52228414320, 52138405000, 52138417920, 52138414820, 52138410600, 52138414300, 52138405020, 52218405520, 52228408500 52128410600, 52238408500.

Specifications for the worst-case product declared in this EPD:
Product name: Helags CE L1500 LS WB 118W 17900 DALI 840 IP23 (abbr. Helags 1500 118W DALI)
Art.nr: 52138417920
Luminous flux: 17900 lm
Length: 1500 mm
Weight: 4,2 kg
Power: 118 W
Standby power: 0,3 W

UN CPC code:
46539 Other electric lamps and lighting fittings

Geographical scope:
A1: Global
A2: Global-Sweden
A3: Sweden
A4: Sweden
B6: Sweden
C1-C4: Sweden
D: Europe

LCA information

Declared unit:
1 unit of Helags CE L1500 LS WB 118W 17900 DALI 840 IP23 (worst case), for use over 20 years in Sweden.

Reference service life:
20 years

Cut-off criteria:
The general rules for the exclusion of inputs and outflows in LCA are in line with those of EN 15804:2012+A2:2019, Chapter 6.3.6.

Data quality:
The general data quality and robustness of the results are considered to be good. Most of the input data that is important for the result is based on specific information about material and energy flows from Auralight and in the case of aluminium based on product-specific environmental impact (EPD). All generic datasets used come from reliable and audited sources (e.g. ecoinvent v3.9.1, cut-off) and have been selected based on technical, geographical, and temporal aspects to represent actual processes.

Time representativeness:
2023

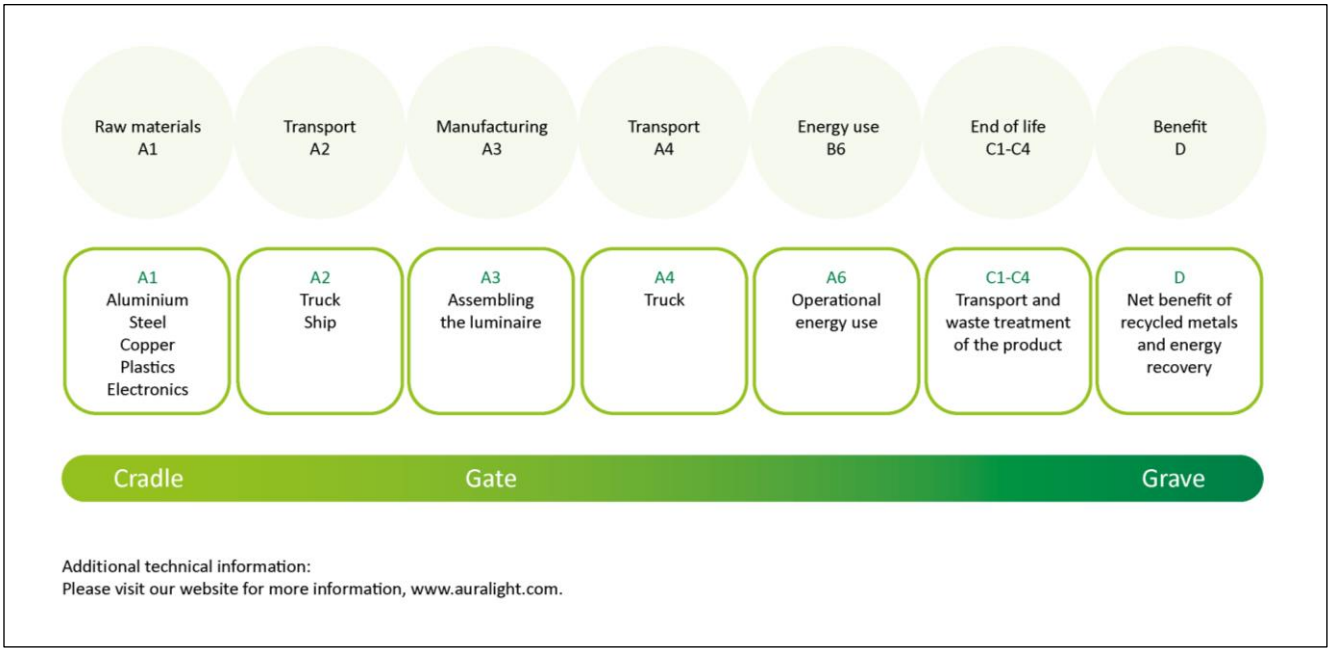
Database(s) and LCA software used:

SimaPro 9.5.0.2 and ecoinvent v3.9.1 (Allocation, cut-off). The LCIA results have been calculated with the EN 15804 reference package based on EF 3.1.

Description of system boundaries:
Cradle-to-gate (A1-A3) with additional modules A4, B1-B7, C1-C4 and D included.

Module A5 is in the modelling and results for balancing biogenic and renewable energy used as raw material but is not fully declared. The installation is assumed to be done by manual work and no significant energy use is needed.

System diagram:
The flowchart below shows all the included life cycle modules that have an environmental impact (note that all B-modules have been included, but only B6 has an environmental impact).



More information:
Infrastructure is included in the underlying datasets for upstream and downstream processes. Infrastructure for the core process is not included.

Module A1:
Module A1 includes the extraction and processing of input materials. The main components of the luminaires are aluminium, steel, copper, electronics (Driver and LED-module) and various plastics. The components are collected from a variety of sources with different geographical origins. Specific data from a supplier's EPD have been used for the main component aluminium, which has the greatest weight share of the included materials.

Module A2:
Transport of materials to the production facility in Vimmerby, Sweden have been estimated through specific data or assessments of transport distances. Generic data for fuel consumption for truck and ship have been used.

Module A3:
The different materials are assembled using mainly manual labour at the production facility in Vimmerby. Energy use from the manufacturing is solely from electricity use for heating, lighting and other factors.

Electricity use in A3 is a combination of multiple energy sources and suppliers. The origin of the energy sources is wind, hydro, nuclear, biomass, and photovoltaic. The aggregated climate impact (GWP-GHG) for this process is 0,00237 kg CO_2-eq./kWh.

Module A3 also includes the production of packaging materials and the environmental impact from the waste generated at site. The luminaires are assumed to be delivered out on a pallet wrapped in plastic film.

Mass allocation has been applied for energy and waste.

Module A4:
The transport distance for A4 is based on a distance to Stockholm and is a conservative approach based on sales statistics. The transport distance is 391 km and is assumed to be carried out by a lorry of euro class 5 (diesel). The bulk density for the product is 450 kg/m^3. The capacity utilisation is assumed to be 49 % according to generic dataset used.

Module B1: Use
No environmental impact is assumed for the module. There is no environmental burden from any use process expect from the operative energy use in B6.

Module B2: Maintenance
No environmental impact is assumed for the module. The luminaire is free of maintenance throughout its expected lifetime.

Module B3: Repair
No environmental impact is assumed for the module. No repair is expected throughout the luminaire's lifetime.

Module B4: Replacement
No environmental impact is assumed for the module. No parts are assumed to be replaced during the luminaire's lifetime.

Module B5: Refurbishment
No environmental impact is assumed for the module. No refurbishment is assumed to be needed during the luminaire's lifetime.

Module B6:
The scenario for operational energy use in B6 are based on the amount of lighting hours per year and the reference service life. The amount of lighting hours per year is 4000 and the reference service life is 20 years. The scenario is based on the standard EN 15193:2007+A1:2021 and is for industrial and sport facilities.

The luminaire is powered by electricity. The total amount of kWh hours for the worst-case product is 9 440 kWh during the reference service life.

The module is modelled for use in Sweden and a Swedish low voltage electricity mix have been applied.

Module B7: Operative water use
No environmental impact is assumed for the module. No water is used.

Module C1:
Deconstruction of the shower system is done manually and does not require any significant energy use.

Module C2:
For transport to waste management, transport distance from market dataset for waste electric and electronic equipment for a European market have been used.

Module C3 and C4:
The waste from the luminaire is included in module C until the “end-of-waste”-state alternatively disposed. The waste processing scenario is according to EN 50693 (Product category rules for electronic products and systems). The luminaire is divided into the five main material categories *plastic, steel, copper, aluminium, and PCB (Printed Circuit Board)* for the waste processing. The scenario for material recovery rate, energy recovery rate and disposal rate are according to Table G.4 in EN 50693. The scenario is for a European market. The whole luminaire is assumed to be collected separately (4,2 kg) and dismantled. After the collection the following recycling-, incineration-, and energy recovery rates are valid.

PCB are assumed to be 100 % incinerated (0,4 kg). Steel is assumed to be 80 % (0,8 kg) recycled and 20 % (0,2 kg) incinerated. Aluminium is assumed to be 70 % (1,3 kg) recycled and 30 % (0,6 kg) incinerated. Copper is assumed to be 60 % (0,2 kg) recycled and 40 % (0,1 kg) incinerated. Plastics are assumed to be 50 % (0,4 kg) incinerated with energy recovery and 50 % (0,4 kg) without energy recovery. PCB (electronics) are assumed to be 100 % incinerated (0,4 kg).

The environmental impact from C3 and C4 are evaluated using generic datasets.

Module D:
Module D includes the impact linked to the material recycling of steel, aluminium, and copper in the luminaire. A benefit arises in the form of avoiding new production of primary raw materials for the proportion of materials in the luminaire that are recycled. Plastic and packaging materials that are incinerated with energy recovery also generate a benefit that is counted in module D.

Module D is calculated based on post-consumer material in input materials and recycling rate according to module C.

The scenario for module D is for a European market.

The scenarios included are currently in use and are representative for one of the most probable alternatives.

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	x	x	x	x	ND[2]	x	x	x	x	x	x	x	x	x	x	x	x
Geography	EUR/ GLO/ SE	EUR/ GLO/ SE	SE	SE	-	-	-	-	-	-	SE	-	SE	EUR	EUR	EUR	EUR
Specific data used	44 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	-23 %			-	-	-	-	-	-	-	-75 %	-	-	-	-	-	-
Variation – sites	0 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-

The different models are included in the same EPD to get a coverage for the whole product family and therefore the deviation is significant due to weight and power differences. The environmental burden from A1-A4 directly reflects the weight for the different lengths and the environmental burden from B6 directly reflects the range of power within the product family.

Content information

Product components	Weight, kg	Post-consumer material, weight-%[1]	Biogenic material, weight-% and kg C/DU
Aluminium	1,85	0	0
Driver	0,20	0	0
LED-modules	0,14	0	0
Electronic details (Contacts, cables, sockets etc.)	0,38	0	0
Steel details	1,01	0	0
Plastic and EPDM details	0,62	0	0
TOTAL	4,2		
Packaging materials	**Weight, kg**	**Weight-% (versus the product)**	**Weight biogenic carbon, kg C/DU**
Pallet	0,65	15	47,2 % 0,31 kg C / DU
Plastic film	0,01	0	0
TOTAL	0,66		

No cut-off has been applied and a 100 % completeness has been reached.

The product does not contain any of the substances from the candidate list of substances of very high concern (SVHC) regulated by the Regulation (EC) No 1907/2006 (REACH) or the Regulation (EC) No 1272/2008 of European parliament.

[1] The recycled material in the input materials might exceed 0 % in several cases but a conservative approach is used.

Results of the environmental performance indicators

The environmental performance of the declared unit of one Helags 1500 118W DALI is reported in the below tables using the parameters and units as specified in PCR 2019:14 v1.3.4.

The results for A1-A3 should also consider the results from module C. The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

Mandatory impact category indicators according to EN 15804

Results per declared unit of one *Helags 1500 118W DALI*

Indicator	Unit	A1-A3	A4	A5[2]	B1-B5	B6	B7	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	3,87E+01	3,08E-01	0,00E+00	0	3,81E+02	0	0	1,44E-02	1,33E+00	4,24E-01	-2,96E+01
GWP-biogenic	kg CO_2 eq.	-4,39E-01	2,79E-04	8,97E-01	0	1,30E+01	0	0	2,27E-05	4,92E-02	2,83E-01	6,38E-02
GWP-luluc	kg CO_2 eq.	7,50E-02	1,50E-04	0,00E+00	0	3,24E+01	0	0	4,52E-05	6,43E-04	1,30E-05	-8,99E-03
GWP-total	kg CO_2 eq.	3,83E+01	3,08E-01	8,97E-01	0	4,27E+02	0	0	1,45E-02	1,38E+00	7,07E-01	-2,95E+01
ODP	kg CFC 11 eq.	2,00E-06	6,70E-09	0,00E+00	0	1,31E-05	0	0	2,43E-10	4,63E-09	9,56E-10	-2,68E-07
AP	mol H^+ eq.	3,93E-01	1,00E-03	0,00E+00	0	4,33E+00	0	0	7,94E-05	2,14E-03	4,53E-04	-2,86E-01
EP-freshwater	kg P eq.	2,40E-02	2,16E-05	0,00E+00	0	3,34E-01	0	0	1,49E-06	1,29E-04	1,88E-05	-1,59E-02
EP-marine	kg N eq.	4,91E-02	3,45E-04	0,00E+00	0	7,30E-01	0	0	3,06E-05	5,67E-04	7,48E-04	-3,84E-02
EP-terrestrial	mol N eq.	5,47E-01	3,65E-03	0,00E+00	0	7,40E+00	0	0	3,26E-04	5,44E-03	2,33E-03	-3,93E-01
POCP	kg NMVOC eq.	1,77E-01	1,50E-03	0,00E+00	0	1,89E+00	0	0	1,06E-04	1,67E-03	7,11E-04	-1,20E-01
ADP-minerals&metals*	kg Sb eq.	6,11E-03	9,89E-07	0,00E+00	0	3,72E-02	0	0	4,35E-08	3,48E-06	6,46E-08	-2,20E-04
ADP-fossil*	MJ	5,59E+02	4,37E+00	0,00E+00	0	5,72E+04	0	0	2,02E-01	4,78E+00	3,84E-01	-3,02E+02
WDP*	m^3	1,10E+01	1,78E-02	0,00E+00	0	7,30E+02	0	0	1,15E-03	9,00E-02	1,96E-02	-5,45E+00

Acronyms

GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption

[2] *Module A5 is not fully declared but is included for balancing of biogenic emissions and renewable energy used as raw material (PERM).*

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

The results of the impact categories abiotic depletion of minerals and metals and land use may be highly uncertain in LCAs that include capital goods/infrastructure in generic datasets, in case infrastructure/capital goods contribute greatly to the total results. This is because the LCI data of infrastructure/capital goods used. To quantify these indicators in currently available generic datasets sometimes lack temporal, technological, and geographical representativeness. Caution should be exercised when using the results of these indicators for decision-making purposes.

Additional mandatory and voluntary impact category indicators

Results per declared unit of one *Helags 1500 118W DALI*

Indicator	Unit	A1-A3	A4	A5[2]	B1 - B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[3]	kg CO_2 eq.	3,87E+01	3,08E-01	0,00E+00	0	4,13E+02	0	0	1,45E-02	1,33E+00	4,24E-01	-2,96E+01

Resource use indicators

Results per declared unit of one *Helags 1500 118W DALI*

Indicator	Unit	A1-A3	A4	A5[2]	B1 - B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	1,62E+02	6,77E-02	1,04E+01	0	2,56E+04	0	0	3,78E-03	5,34E-01	9,32E-03	-2,78E+01
PERM	MJ	1,04E+01	0,00E+00	-1,04E+01	0	0,00E+00	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	1,72E+02	6,79E-02	0,00E+00	0	2,56E+04	0	0	4,05E-03	5,35E-01	9,35E-03	-2,78E+01
PENRE	MJ	5,28E+02	4,64E+00	4,92E-01	0	5,75E+04	0	0	2,15E-01	1,84E+01	1,38E+01	-3,19E+02
PENRM	MJ	2,72E+01	0,00E+00	-4,92E-01	0	0,00E+00	0	0	0,00E+00	-1,34E+01	-1,34E+01	0,00E+00
PENRT	MJ	5,55E+02	4,64E+00	0,00E+00	0	5,75E+04	0	0	2,15E-01	5,08E+00	4,11E-01	-3,19E+02
SM	kg	6,82E-05	0,00E+00	0,00E+00	0	0,00E+00	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	7,71E-09	0,00E+00	0,00E+00	0	0,00E+00	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	8,40E-09	0,00E+00	0,00E+00	0	0,00E+00	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	1,20E+00	7,23E-04	0,00E+00	0	1,58E+01	0	0	5,78E-05	3,04E-03	9,50E-04	-1,47E-01

Acronyms

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

[3] This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO_2 is set to zero.

Waste indicators

Results per declared unit of one *Helags 1500 118W DALI*												
Indicator	**Unit**	**A1-A3**	**A4**	**A5[1]**	**B1-B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	5,59E-02	0,00E+00	0,00E+00	0	0,00E+00	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-hazardous waste disposed	kg	5,93E+00	0,00E+00	0,00E+00	0	0,00E+00	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Radioactive waste disposed	kg	1,93E-02	0,00E+00	0,00E+00	0	0,00E+00	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Output flow indicators

Results per declared unit of one *Helags 1500 118W DALI*												
Indicator	**Unit**	**A1-A3**	**A4**	**A5[2]**	**B1-B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0	0,00E+00	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	8,36E-01	0,00E+00	0,00E+00	0	0,00E+00	0	0	0,00E+00	2,24E+00	0,00E+00	0,00E+00
Materials for energy recovery	kg	7,09E-03	0,00E+00	0,00E+00	0	0,00E+00	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	MJ	8,55E-02	0,00E+00	0,00E+00	0	0,00E+00	0	0	0,00E+00	5,33E-02	0,00E+00	0,00E+00
Exported energy, thermal	MJ	1,55E-01	0,00E+00	0,00E+00	0	0,00E+00	0	0	0,00E+00	1,60E-01	0,00E+00	0,00E+00

Additional environmental information

Conversion factor for environmental impact for different models in module B6
The energy consumption (amount of kWh used) per year is dependent on the power of the luminaire and the amount of lighting hours per year. The environmental impact from module B6 is linear with the energy consumption as it is only dependent on the electricity. The conversion factor in Table 1 can be used for converting the environmental impact for module B6. For models with other power outputs, the calculated energy consumption during the reference service life can be divided by the energy consumption for the worst-case product (9 440 kWh) to obtain a conversion factor for the actual model.

1: Conversion factors for environmental impact from module B6.

Model	1200 On/Off	1500 On/Off	1200 DALI	1500 DALI
Total kWh in scenario B6	2 400	5 280	7 600	9 440
Conversion factor	0,25	0,56	0,81	1

Conversion factor for climate impact for different markets in module B6
This EPD have the geographical scope Sweden. The market for Aura Light products is thus even Norway, Denmark, Finland, and Germany. Module A1-A3 have the same environmental impact for each of the markets as all production is carried out at one site in Sweden. The main difference in environmental impact for other markets is environmental impact from B6. A scenario analysis for climate impact (GWP-total) for the different markets was conducted. A low voltage electricity mix for each country has been applied. Conversion factors for the worst-case product is presented in Table 2 below.

2: Conversion factors for the climate impact (GWP-total) for different markets from module B6.

Model	Sweden	Denmark	Finland	Germany	Norway
Conversion factor	1	5,15	5,22	10,6	0,77

Climate impact (GWP-GHG) for different the four products within the LCA (A1-A3)
This EPD declares the worst-case product Helags 1500 DALI. In Table 3 the results for climate impact (GWP-GHG) for A1-A3 is presented for the best product (Helags 1200 On/Off) together with results for the three other products.

3: Climate impact (GWP-GHG) for the four products within the LCA (A1-A3)

Model	1200 On/Off	1500 On/Off	1200 DALI	1500 DALI
GWP-GHG (kg CO_2-eq)	3,09E+01	3,78E+01	3,18E+01	3,87E+01

Variation of environmental impact indicator results for which the variation is above 10%
The table below indicates the highest variation (%) between the results of the declared product (worst case) and any of the other included products covered by this EPD.

Impact category	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
GWP-total	-21%	-21%	0%	-75%	0%	-21%	-21%	-21%	-21%
GWP-fossil	-20%	-21%	0%	-75%	0%	-21%	-21%	-21%	-21%
GWP-biogenic	-17%	-21%	0%	-75%	0%	-21%	-21%	-21%	-21%
GWP-luluc	-20%	-21%	0%	-75%	0%	-21%	-21%	-21%	-20%
ODP	-20%	-21%	0%	-75%	0%	-21%	-21%	-21%	-20%
AP	-23%	-21%	0%	-75%	0%	-21%	-21%	-21%	-21%
EP-freshwater	-23%	-21%	0%	-75%	0%	-21%	-21%	-21%	-21%
EP-marine	-21%	-21%	0%	-75%	0%	-21%	-21%	-21%	-21%
EP-terrestrial	-21%	-21%	0%	-75%	0%	-21%	-21%	-21%	-20%
POCP	-21%	-21%	0%	-75%	0%	-21%	-21%	-21%	-21%
ADP-minerals & metals	-21%	-21%	0%	-75%	0%	-21%	-21%	-21%	-21%
ADP-fossil	-20%	-21%	0%	-75%	0%	-21%	-21%	-21%	-21%
WDP	-21%	-21%	0%	-75%	0%	-21%	-21%	-21%	-21%
GWP-GHG	-20%	-21%	0%	-75%	0%	-21%	-21%	-21%	-21%

References

EPD International (2021), General Programme Instructions for the International EPD® System. Version 4.0, date 2021-03-29.

EPD International (2023) PCR 2019:14 Construction products. Version 1.3.4, date 2023-12-08.

CEN European Committee for Standardisation (2021). EN 15804:2012+A2:2019/AC:2021, Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products.

ISO. (2006a). Environmental management - Life cycle assessment - Principles and framework (ISO 14040:2006).

ISO. (2006b). Environmental management — Life cycle assessment - Requirements and guidelines (ISO 14044:2006).

ISO. (2006c). Environmental labels and declarations - Type III environmental declarations - Principles and procedures (ISO 14025:2010).

Sweco Sverige AB, LCA Report - Helags luminaires Auralight AB. F. Jansson & M. Mikusinska.

EPD®

www.environdec.com