

Environmental Product Declaration

In compliance with ISO 14025 and EN 50693:2019

Program Operator	EPDItaly
Publisher	EPDItaly
Declaration Number	AoL001
Registration Number	EPDITALY0430
UNCPC Code	465
Publication Date	12.05.2023
Valid Until	12.05.2028

Product Name:

ALPHABET OF LIGHT
MODULAR INDOOR
LIGHTING SYSTEM COMPONENTS

Codes:

2108010A, 2113010A,
2135010A
2267010APP, 2267010A,
1207000A, 1208000APP,
2154010A, 2158010A,
2250010A

Manufacturing Plant:

Via Bergamo 18, Pregnana Milanese
(MI), 20006 – Italy

EPD Environmental Product Declaration

Alphabet of Light

Artemide

Index

Index

EPD information	6
Company information	8
EPD scope and type	10
LCA information	12
Product and production process description	16
Results	26
Calculation methodology	46
References	48

EPD

Environmental Product Declaration

Information

EPD owner	Artemide S.p.A. Corso Monforte 19 - 20122 - Milano (MI), Italy
Reference production site	Via Bergamo 18 - 20006 - Pregnana Milanese (MI), Italy
Program operator	EPDItaly Via Gaetano De Castilia 10, 20124 Milano (MI), Italia www.epditaly.it
Independent verification	This declaration was developed following the general instructions of the EPDItaly programme. Independent verification of the declaration and data carried out according to ISO 14025:2010. Internal XExternal Third party verification performed by: ICMQ SpA, via De Castilia, 10 - 20124 Milano (www.icmq.it). Accredited by Accredia
Scope of application	The following is an EPD developed by LCA-Tool referring to 10 products of the Alphabet of Light family: 2108010A, 2158010A, 2267010APP, 2267010A, 1207000A, 1208000APP, 2113010A, 2135010A, 2154010A, 2250010A
UNCPC code	465
Reference documents	This declaration was developed following the EPDItaly Programme Regulation rev. 5.2 published on 16/02/2022, available at www.epditaly.it . The EN 50693:2019 standard represent the framework reference for the core PCR " Electronic and electrical products and systems" (PCR EPDItaly007)
PCR	CORE-PCR EPDItaly007 - Rev 3.0 Electronic and electrical products and systems. Issue date: 13/01/2023
Comparability	Environmental Declarations published within the same product category, but from different programmes, may not be comparable. In particular, EPDs of similar products may not be comparable if they do not comply with the reference technical standard.
Responsibility	ARTEMIDE S.p.A. releases EPDItaly from any non-compliance with environmental legislation self-declared by the manufacturer. The holder of the declaration shall be responsible for the supporting information and evidence; EPDItaly declines all responsibility for the manufacturer's information, data and results of the life cycle assessment.
Tool	EPD is developed by LCA-Tool ARTEMIDE – Rev. 1 24/04/2023. Tool verified by ICMQ
Organization contact	Dott.ssa Laura Pessoni – Artemide S.p.A. – Via Bergamo 18 - 20006 - Pregnana Milanese (MI), Italy. lpessoni@artemide.com
Technical contact	Federica Gilardelli, Chiara Albini, LCA studio managers, Greenwich S.r.l. Head office: Via Presolana 2/4, 24030, Medolago (BG) – Registered office: Via Vittorio Emanuele II, 179, 24033 Calusco d'Adda - Bergamo. info@greenwichsrl.it

Company information

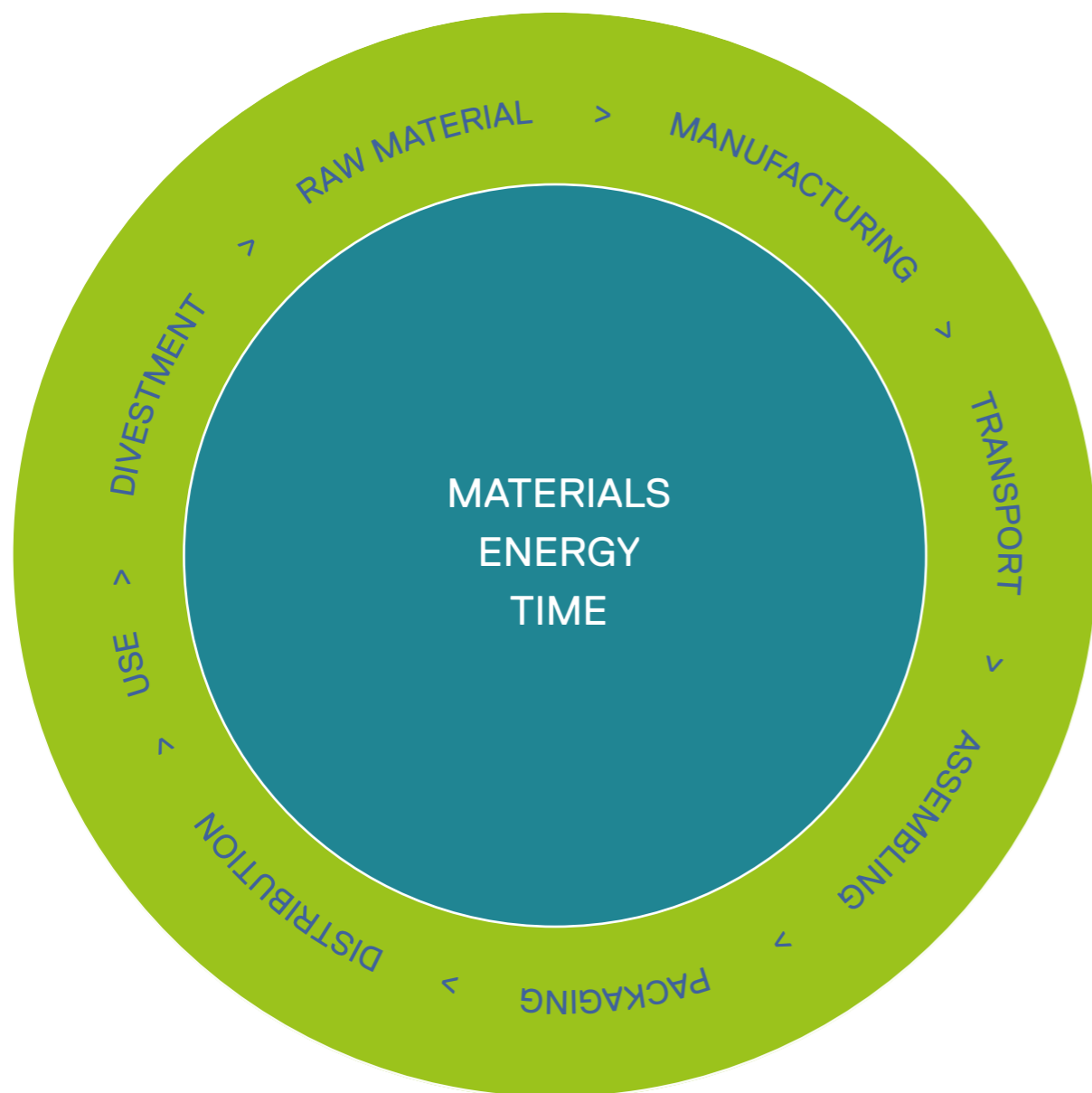
Founded in 1959, Artemide is one of the world's best known lighting brands, known for its philosophy 'The Human and Responsible Light'. Today, Artemide is synonymous with design, lighting expertise and innovation with products that are an expression of research and high-quality manufacturing.

Headquartered in Pregnana Milanese, Artemide exports to 109 countries, has a staff of 640 employees, 60 of whom work in R&D, 5 production units in Italy, France, Hungary and Canada, 1 factory and a structure dedicated to Research and Innovation. Technological research, dialogue with great architects but also investigation in the socio-cultural field have been the basis of innovative projects since the beginning of Artemide's path, in line with Artemide's philosophy of offering not only products but also services and expertise.

Artemide

EPD

Scope and Type



This declaration is of product-specific the cradle-to-grave type, as set out in EN 50693:2019. Thus, the following phases were considered:

- Manufacturing Stage (extraction of raw materials, including waste recycling processes and the production of semi-finished and ancillary products, as well as their packaging; transportation of raw materials to the manufacturing site; manufacturing of the product constituents, including all the stages; product assembly; packaging; waste recycling processes);
- Distribution Stage;
- Installation Stage (including end-of-life treatment of generated waste);
- Use & Maintenance Stage;
- End-of-life Stage (de-installation; collection & transport; End-of-life treatments).

Manufacturing Stage		Distribution Stage	Installation Stage	Use & Maintenance Stage	End of life Stage
Upstream Module	Core Module	Downstream Module			
Extraction of raw materials	Manufacturing of the products components	Transport to distributors	Installation	Usage	De-installation
Transportation of raw materials to the manufacturing site	Product assembly				
	Packaging			Maintenance	Collection & transport
	Waste recycling processes			End-of-life treatment of generated waste	End-of-life treatments

LCA

Life Cycle Assessment

Information

Type of EPD	The EPD in question is cradle to grave.
Geographical validity	Performance was calculated with reference to the Artemide S.p.A. plant in Pregnana Milanese. The reference market is Global.
Temporal validity	The reference period is the calendar year 2022.
LCA-Tool	LCA-Tool ARTEMIDE – Rev. 1 of 24/04/2023
Database used:	Ecoinvent 3.8
Software:	SimaPro 9.4.0.2
Declared Unit:	1 Alphabet of Light component for residential and professional indoor use is analysed as declared unit. A service life of 50,000 hours is considered, which, with an average daily use of 8 hours, equates to approximately 17 years for the use phase calculation.
Cut-off rules:	The galvanisation of galvanised iron fasteners and components was considered in cut-off.
Allocation rules:	Mass-based allocation considering net production in 2022.
Proxy data:	No proxy data.



Assumptions/Scenarios

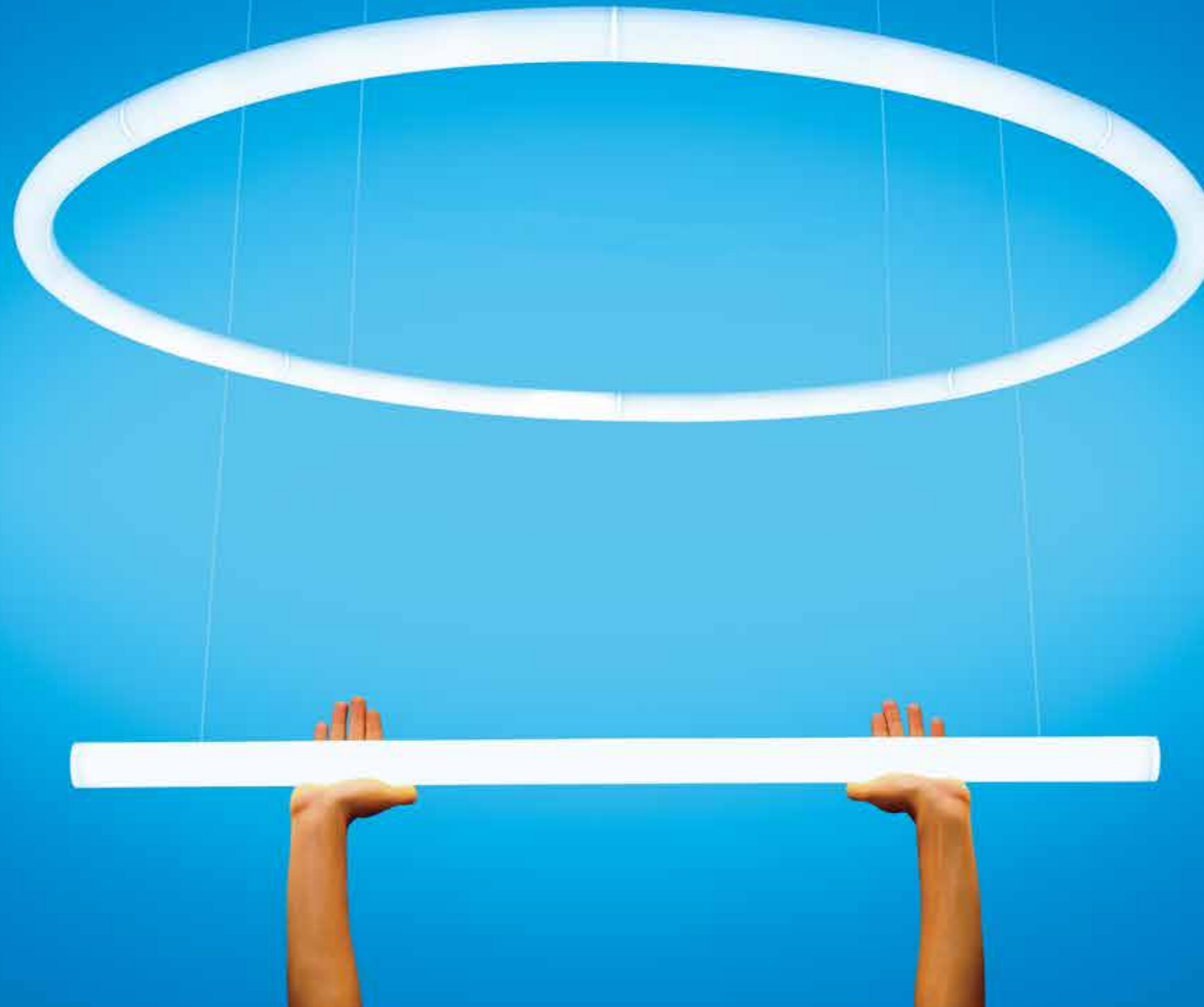
Modules	Scenarios	End-of-Life stage	
Distribution stage	The actual distribution of the products in 2022 was considered for the distance calculations.		Disassembling. For the calculation of impacts related to phase C1, it was assumed that these activities take place in the same way as for the installation phase.
Installation stage	<p>The installation of the products under study is done manually using a drill, screwdriver, electrician's scissors, pencil and paper tape. With regards to energy consumption, the use of a W750 drill for 10 seconds per screw was considered.</p> <p>The electricity mixes of the respective destination countries were used to model the electricity consumption. The packaging waste treatment is also included in this phase and a distance of 100 km from waste treatment plants was chosen.</p>		<p>Transport of the waste. A demolished transport distance of 1.000 km was considered.</p> <p>The dataset Transport, freight, lorry 16-32 metric ton, euro4 {RoW} market for transport, freight, lorry 16-32 metric ton, EURO4 Cut-off, U is chosen for the modelling.</p> <p>Waste management, recycling and energy recovery. For all information regarding the treatment process of end-of-life devices, as no primary data were available, reference was made to Table G.4 of Annex G of EN 50693: 2019.</p> <p>Waste management, landfill disposal. For disposal processes, as per the previous phase, reference was made to Annex G of EN 50693: 2019.</p>
Use stage	<p>Maintenance. AoL products need no special maintenance. Only routine external cleaning with non-aggressive detergents is recommended. The study assumes a water consumption per cleaning of 1 litre per year. Given a service life of the appliances of 17 years, the consumption is 17 litres. Given the worldwide distribution of the products, it was decided to model the consumption with the dataset Tap water {RoW} tap water production, conventional treatment Cut-off, U.</p> <p>Repair. No repair scenario considered.</p> <p>Substitution. This phase assumes a driver failure. Therefore, the purchase of a new driver and the disposal of the failed component are considered. The products affected by driver replacement are: 2267010APP, 2267010A, 1207000A, 1208000APP. For disposal of the old one, a transport of 1.000 km modelled with the Transport, freight, lorry 16-32 metric ton, EURO4 {RoW} transport, freight, lorry 16-32 metric ton, EURO4 Cut-off, U dataset was considered, a landfill disposal of 90% and a separation treatment for 10%. The module chosen is Waste electric and electronic equipment {GLO} treatment of, shredding Cut-off, U</p> <p>Restructuring. No restructuring scenario considered as not relevant to the products studied.</p> <p>Operational energy use. The energy consumption of the products was calculated on the basis of the nominal power input over the service life (RSL) of 50.000 hours. The electricity mix used in the use phase is representative of the countries of installation.</p> <p>Operational water use. Not applicable. The only water consumption is for the maintenance (cleaning) of the appliances.</p>		

Product and production process description

Alphabet of Light

The subjects of the present EPD are 10 product codes that are part of the Alphabet of Light lighting system. Developed by Artemide in collaboration with the international architectural firm BIG - Bjarke Ingles Group.

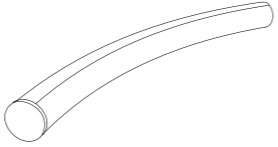



The products are part of a modular system that can be freely assembled to create different layouts of continuous and uniform lines of light without visible joints and shadows between the various modules thanks to a patented optoelectronic solution.





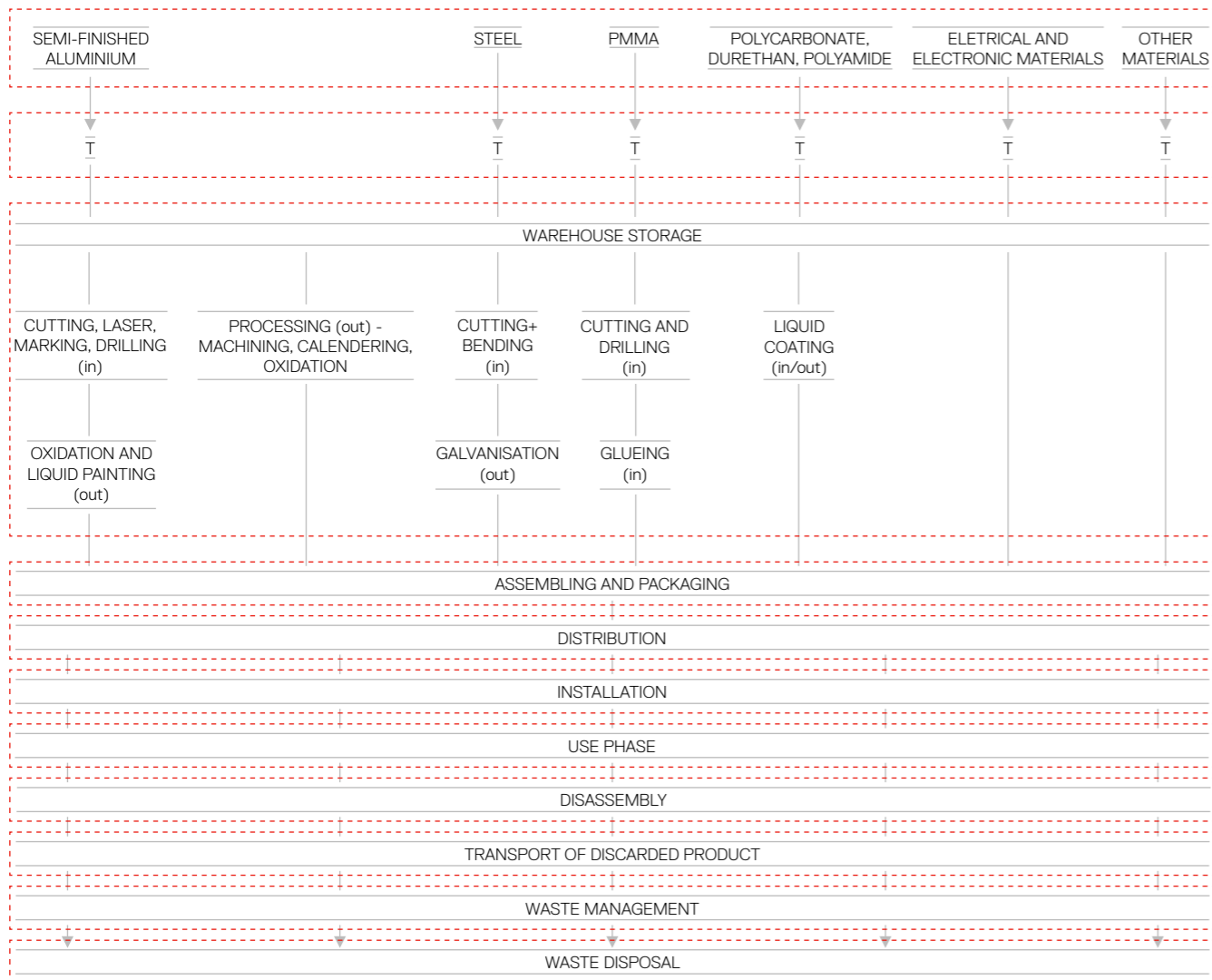
Pinterest offices, Toronto, Canada

Product	Maximum power supply [W]	Description
<p>2108010A Alphabet of light System 1800 terminal powered 3000K – suspended</p>	33	<p>Suspension powered linear module, terminal of a system. Opaline white technopolymer body with special patented optical and geometric properties to obtain perfect diffused and uniform light emission from LED strip mounted on the upper aluminum structural part that supports the module. Comfort diffused light emission UGR<21, colour temperature 3000K, CRI80. Diffuser section diameter 5cm, length 180 cm. 48V powered system. Push or Dali dimmable. Manageable also with Artemide App.</p>
<p>2158010A Alphabet of light System X joint</p>	2,4	<p>Suspension 'X' joint part of a system, mechanically and electronically connecting 4 linear modules. Opaline white technopolymer body with special patented optical and geometric properties to obtain perfect diffused and uniform light emission from LED strip mounted on the upper aluminum structural part that supports the module. Comfort diffused light emission UGR<21, colour temperature 3000K, CRI80. Diffuser section diameter 5cm. 48V powered system. Push or Dali dimmable. Manageable also with Artemide App.</p>
<p>2267010APP Alphabet of light System Power kit APP - ceiling</p>	175*	<p>APP ceiling power unit (175W, 220-240VAC, L=306, W=140, H=44) - output cable length 1.5m, allows connected luminaires to be controlled via Bluetooth wireless protocol (instead of DALI/PUSH).</p>
<p>2267010A Alphabet of light System Power kit DALI-PUSH - ceiling</p>	175*	<p>Power unit with Dali / Push control (175W, 220-240VAC), ceiling installation (L=306, W=140, H=44) - Cable length 1.5m. Dedicated element for powering and controlling the Alphabet of Light system up to a system length of 10m. Electronic components enclosed in an aesthetic box for visible ceiling application.</p>
<p>1207000A Alphabet of light Stand Alone 155 circular 3000K - suspended</p>	91	<p>155 cm diameter suspended stand-alone circle including power unit for Push-Dali power supply and management. Opaline white technopolymer body with special patented optical and geometric properties to obtain perfect diffused and uniform light emission from LED strip mounted on the upper aluminum structural part that supports the module. Comfort diffused light emission UGR<21, colour temperature 3000K, CRI80. Diffuser section diameter 5cm. Push or Dali dimmable system. Electronic components enclosed in an aesthetic box for visible ceiling application.</p>
<p>1208000APP Alphabet of light Stand Alone 2400 linear 3000K - suspended</p>	63	<p>Alphabet of light linear 240 suspension - App Compatible. Stand-alone suspension element including power unit for power supply and management with Artemide App. Opaline white technopolymer body with special patented optical and geometric properties to obtain perfect diffused and uniform light emission from LED strip mounted on the upper aluminum structural part that supports the module. Comfort diffused light emission UGR<21, colour temperature 3000K, CRI80. Diffuser section diameter 5cm. System manageable with Artemide App. Electronic components enclosed in an aesthetic box for visible ceiling application.</p>

<p>2113010A Alphabet of light System Curved element 45° terminal right powered 3000K – suspended</p>	<p>11</p>		<p>Alphabet of light system - Suspension - curved - 45° - 3000K - right terminal - powered. Curved suspension module powered, initial or terminal module of a system. Easy electromechanical connection between modules to supply up to 10m with a single driver. Opaline white technopolymer body with special patented optical and geometric properties to obtain perfect diffused and uniform light emission from LED strip mounted on the upper aluminum structural part that supports the module. Comfort diffused light emission UGR<21, colour temperature 3000K, CRI80. Diffuser section diameter 5cm. 48V powered system. Push or Dali dimmable. Manageable also with Artemide App.</p>
<p>2135010A Alphabet of light System Linear 1200 intermediate powered 3000K - wall/ceiling</p>	<p>21</p>		<p>Alphabet of light system - wall/ceiling - Linear - 1200 mm - 3000K - intermediate - powered. Linear wall/ceiling powered module, intermediate part of a system. Easy electromechanical connection between modules to supply up to 10m with a single driver. Opaline white technopolymer body with special patented optical and geometric properties to obtain perfect diffused and uniform light emission from LED strip mounted on the upper aluminum structural part that supports the module. Comfort diffused light emission UGR<21, colour temperature 3000K, CRI80. Diffuser section diameter 5cm, length 120 cm. 48V powered system. Push or Dali dimmable. Manageable also with Artemide App.</p>
<p>2154010A Alphabet of light system - suspension – 90° joint - 3000K – not powered</p>	<p>1,5</p>		<p>Alphabet of light system - suspension - 90° joint - 3000K – unpowered. 90° joint suspension part of a system, mechanically and electronically connects 2 linear modules. Easy electromechanical connection between modules to supply up to 10m with a single driver. Opaline white technopolymer body with special patented optical and geometric properties to obtain perfect diffused and uniform light emission from LED strip mounted on the upper aluminum structural part that supports the module. Comfort diffused light emission UGR<21, colour temperature 3000K, CRI80. Diffuser section diameter 5cm. 48V powered system. Push or Dali dimmable. Manageable with Artemide App.</p>
<p>2250010A Alphabet of light System linear - linear joint</p>	<p>0</p>		<p>Alphabet of light system - linear joint. Linear joint part of a system, it mechanically and electronically connects 2 linear modules avoiding light leaks and optimising emission uniformity to avoid visible joint marks. Easy electromechanical connection between modules to supply up to 10m with a single driver. Like the modules, the joint is a ring in white opaline technopolymer with special patented optical and geometric properties to obtain perfect diffused and uniform light emission. The upper plastic part connects the structural tops of adjacent linear modules.</p>

Production Process

The production process at the Artemide S.p.A plant in Pregnana Milanese begins with the receipt of raw materials and semi-finished products, which are stored in the warehouse. Some raw materials require processing before they are available for assembly. These processes take place both internally and externally. Details on internal and external processing carried out on products are presented in the following system diagram. Finally, the materials are taken along the production route for assembly and subsequent packaging.



LEGEND
 T Transport in internal process out external process



Results

The following tables summarize the total impacts for each indicator of the 10 Alphabet of light modules under study.

Environmental impact indicators for 2108010A - Alphabet of light System 1800 terminal powered 3000K – suspended

Environmental impact parameters - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
GWP-fossil	kg CO2 eq.	3,59E+01	5,63E-04	3,84E-02	4,10E+02	1,57E+00
GWP-biogenic	kg CO2 eq.	3,92E-01	4,61E-07	3,52E-05	2,85E+01	5,72E-04
GWP-luluc	kg CO2 eq.	2,04E-01	2,31E-07	1,82E-05	4,89E-01	1,80E-04
GWP-total	kg CO2 eq.	3,75E+01	5,63E-04	3,85E-02	4,40E+02	1,57E+00
ODP	kg CFC 11 eq.	1,29E-01	1,30E-10	8,72E-09	2,74E-05	9,20E-08
AP	mol H+ eq.	2,18E-01	3,48E-06	1,87E-04	1,59E+00	2,28E-03
EP-freshwater	kg P eq.	1,31E-02	3,58E-08	2,91E-06	3,23E-01	3,31E-05
EP-marine	kg N eq.	5,04E-02	1,13E-06	6,24E-05	3,33E-01	1,83E-03
EP-terrestrial	mol N eq.	2,57E+01	1,23E-05	6,82E-04	3,02E+00	8,73E-03
POCP	kg NMVOC eq.	1,11E-01	3,47E-06	1,96E-04	7,99E-01	2,45E-03
ADP-minerals&metals*	kg Sb eq.	1,81E+00	1,92E-09	1,77E-07	6,02E-03	1,46E-06
ADP-fossil*	MJ	4,68E+02	8,52E-03	5,79E-01	1,20E+04	6,19E+00
WDP*	m ³	4,76E+01	2,52E-05	1,92E-03	1,03E+02	8,08E-02

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

Use of resources - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
PERE	MJ	9,25E+01	1,18E-04	9,77E-03	3,11E+03	1,05E-01
PERM	MJ	3,97E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	1,32E+02	1,18E-04	9,77E-03	3,11E+03	1,05E-01
PENRE	MJ	5,03E+02	9,05E-03	6,14E-01	1,24E+04	6,58E+00
PENRM	MJ	8,17E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	5,11E+02	9,05E-03	6,14E-01	1,24E+04	6,58E+00
SM	kg	5,00E-02	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m ³	3,86E+01	9,35E-07	7,31E-05	1,02E+01	2,58E-03

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

Waste production - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
HWD	kg	8,63E-02	2,18E-08	1,55E-06	1,10E-02	1,58E-05
NHWD	kg	4,86E+00	4,24E-04	0,00E+00	3,42E+01	1,15E+00
RWD	kg	1,17E-03	5,77E-08	3,88E-06	1,10E-01	4,02E-05

Acronyms

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

Output flows - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	7,63E-01	0,00E+00	1,81E+00	0,00E+00	0,00E+00
MER	kg	3,25E-01	0,00E+00	0,00E+00	3,25E-01	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Acronyms

CRU = Components for re-use; MFR = Material for recycling; MER = Materials for energy recovery; EEE = Exported energy, electricity; EET = Exported energy, thermal

Environmental impact indicators for 2158010A - Alphabet of light System X joint

Environmental impact parameters - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
GWP-fossil	kg CO2 eq.	4,23E+00	1,80E-05	2,86E-03	3,89E+01	2,12E-01
GWP-biogenic	kg CO2 eq.	3,86E-02	1,55E-08	1,13E-05	6,59E-01	5,91E-05
GWP-luluc	kg CO2 eq.	5,40E-03	7,12E-09	2,27E-06	8,44E-02	1,91E-05
GWP-total	kg CO2 eq.	3,55E+00	1,80E-05	2,87E-03	3,97E+01	2,12E-01
ODP	kg CFC 11 eq.	1,39E-02	4,19E-12	5,77E-10	3,68E-06	9,97E-09
AP	mol H+ eq.	2,32E-02	9,11E-08	1,26E-05	9,18E-02	2,51E-04
EP-freshwater	kg P eq.	1,38E-03	1,17E-09	2,99E-07	8,93E-03	3,48E-06
EP-marine	kg N eq.	5,18E-03	3,14E-08	4,08E-06	2,29E-02	2,38E-04
EP-terrestrial	mol N eq.	2,76E+00	3,43E-07	4,43E-05	2,27E-01	9,78E-04
POCP	kg NMVOC eq.	1,10E-02	9,78E-08	1,26E-05	6,15E-02	2,73E-04
ADP-minerals&metals*	kg Sb eq.	1,94E-01	6,30E-11	1,87E-08	5,77E-04	1,59E-07
ADP-fossil*	MJ	5,01E+01	2,74E-04	5,30E-02	1,31E+03	6,68E-01
WDP*	m3	5,31E+00	8,21E-07	2,81E-04	1,26E+01	1,06E-02

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

Use of resources - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
PERE	MJ	5,25E+00	3,86E-06	3,03E-03	1,76E+02	1,10E-02
PERM	MJ	3,17E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	8,42E+00	3,86E-06	3,03E-03	1,76E+02	1,10E-02
PENRE	MJ	5,86E+01	2,91E-04	5,58E-02	1,35E+03	7,10E-01
PENRM	MJ	1,72E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	5,88E+01	2,91E-04	5,58E-02	1,35E+03	7,10E-01
SM	kg	5,00E-03	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	4,14E+00	3,06E-08	1,01E-05	4,27E-01	3,37E-04

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

Waste production - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
HWD	kg	9,26E-03	7,16E-10	1,12E-07	1,32E-03	1,72E-06
NHWD	kg	3,26E-01	1,41E-05	3,87E-05	2,79E+00	1,30E-01
RWD	kg	9,84E-05	1,85E-09	4,00E-07	1,20E-02	4,33E-06

Acronyms

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

Output flows - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	8,20E-02	0,00E+00	1,09E-01	0,00E+00	0,00E+00
MER	kg	3,49E-02	0,00E+00	0,00E+00	3,49E-02	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Acronyms

CRU = Components for re-use; MR = Material for recycling; MER = Materials for energy recovery; EEE = Exported energy, electricity; EET = Exported energy, thermal

Environmental impact indicators for 2267010APP - Alphabet of light System Power kit APP – ceiling

Environmental impact parameters - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
GWP-fossil	kg CO2 eq.	9,98E+01	2,98E-04	6,59E-03	1,14E+02	7,22E-01
GWP-biogenic	kg CO2 eq.	1,79E+00	2,22E-07	6,03E-06	3,92E+00	3,48E-04
GWP-luluc	kg CO2 eq.	1,51E-01	1,29E-07	3,13E-06	1,73E-01	2,04E-04
GWP-total	kg CO2 eq.	1,02E+02	2,98E-04	6,60E-03	1,19E+02	7,23E-01
ODP	kg CFC 11 eq.	1,22E-01	6,82E-11	1,49E-09	9,02E-06	8,54E-08
AP	mol H+ eq.	8,01E-01	2,46E-06	3,21E-05	7,85E-01	2,07E-03
EP-freshwater	kg P eq.	1,23E-01	1,82E-08	4,99E-07	1,42E-01	3,98E-05
EP-marine	kg N eq.	1,37E-01	7,37E-07	1,07E-05	1,36E-01	9,85E-04
EP-terrestrial	mol N eq.	2,52E+01	8,10E-06	1,17E-04	1,34E+00	7,55E-03
POCP	kg NMVOC eq.	3,51E-01	2,23E-06	3,35E-05	3,57E-01	2,13E-03
ADP-minerals&metals*	kg Sb eq.	1,73E+00	9,69E-10	3,03E-08	2,57E-02	1,75E-06
ADP-fossil*	MJ	1,35E+03	4,45E-03	9,92E-02	1,83E+03	5,94E+00
WDP*	m ³	2,14E+02	1,28E-05	3,28E-04	1,79E+02	4,31E-02

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

Use of resources - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
PERE	MJ	2,06E+02	5,95E-05	1,68E-03	3,87E+02	1,30E-01
PERM	MJ	1,66E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	2,23E+02	5,95E-05	1,68E-03	3,87E+02	1,30E-01
PENRE	MJ	1,45E+03	4,73E-03	1,05E-01	1,94E+03	6,31E+00
PENRM	MJ	2,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	1,45E+03	4,73E-03	1,05E-01	1,94E+03	6,31E+00
SM	kg	7,40E-02	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m ³	4,39E+01	4,73E-07	1,25E-05	8,36E+00	1,46E-03

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

Waste production - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
HWD	kg	8,90E-02	1,09E-08	2,66E-07	7,97E-03	1,46E-05
NHWD	kg	9,14E+00	2,07E-04	0,00E+00	1,04E+01	1,17E+00
RWD	kg	4,26E-03	3,02E-08	6,65E-07	9,35E-03	3,84E-05

Acronyms

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

Output flows - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	7,19E-01	0,00E+00	3,10E-01	1,15E+00	0,00E+00
MER	kg	3,07E-01	0,00E+00	0,00E+00	3,07E-01	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Acronyms

CRU = Components for re-use; MR = Material for recycling; MER = Materials for energy recovery; EEE = Exported energy, electricity; EET = Exported energy, thermal

Environmental impact indicators for 2267010A - Alphabet of light System Power kit DALI-PUSH – ceiling

Environmental impact parameters - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
GWP-fossil	kg CO2 eq.	9,98E+01	2,98E-04	6,59E-03	1,14E+02	7,22E-01
GWP-biogenic	kg CO2 eq.	1,79E+00	2,22E-07	6,03E-06	3,92E+00	3,48E-04
GWP-luluc	kg CO2 eq.	1,51E-01	1,29E-07	3,13E-06	1,73E-01	2,04E-04
GWP-total	kg CO2 eq.	1,02E+02	2,98E-04	6,60E-03	1,19E+02	7,23E-01
ODP	kg CFC 11 eq.	1,22E-01	6,82E-11	1,49E-09	9,02E-06	8,54E-08
AP	mol H+ eq.	8,01E-01	2,46E-06	3,21E-05	7,85E-01	2,07E-03
EP-freshwater	kg P eq.	1,23E-01	1,82E-08	4,99E-07	1,42E-01	3,98E-05
EP-marine	kg N eq.	1,37E-01	7,37E-07	1,07E-05	1,36E-01	9,85E-04
EP-terrestrial	mol N eq.	2,52E+01	8,10E-06	1,17E-04	1,34E+00	7,55E-03
POCP	kg NMVOC eq.	3,51E-01	2,23E-06	3,35E-05	3,57E-01	2,13E-03
ADP-minerals&metals*	kg Sb eq.	1,73E+00	9,69E-10	3,03E-08	2,57E-02	1,75E-06
ADP-fossil*	MJ	1,35E+03	4,45E-03	9,92E-02	1,83E+03	5,94E+00
WDP*	m ³	2,14E+02	1,28E-05	3,28E-04	1,79E+02	4,31E-02

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

Use of resources - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
PERE	MJ	2,06E+02	5,95E-05	1,68E-03	3,87E+02	1,30E-01
PERM	MJ	1,66E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	2,23E+02	5,95E-05	1,68E-03	3,87E+02	1,30E-01
PENRE	MJ	1,45E+03	4,73E-03	1,05E-01	1,94E+03	6,31E+00
PENRM	MJ	2,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	1,45E+03	4,73E-03	1,05E-01	1,94E+03	6,31E+00
SM	kg	7,40E-02	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m ³	4,39E+01	4,73E-07	1,25E-05	8,36E+00	1,46E-03

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

Waste production - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
HWD	kg	8,90E-02	1,09E-08	2,66E-07	7,97E-03	1,46E-05
NHWD	kg	9,14E+00	2,07E-04	0,00E+00	1,04E+01	1,17E+00
RWD	kg	4,26E-03	3,02E-08	6,65E-07	9,35E-03	3,84E-05

Acronyms
 HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

Output flows - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	7,19E-01	0,00E+00	3,10E-01	1,15E+00	0,00E+00
MER	kg	3,07E-01	0,00E+00	0,00E+00	3,07E-01	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Acronyms
 CRU = Components for re-use; MR = Material for recycling; MER = Materials for energy recovery; EEE = Exported energy, electricity; EET = Exported energy, thermal

Environmental impact indicators for 1207000A - Alphabet of light Stand Alone 155 circular 3000K – suspended

Environmental impact parameters - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
GWP-fossil	kg CO2 eq.	1,06E+02	1,84E-03	2,00E-01	1,65E+03	4,72E+00
GWP-biogenic	kg CO2 eq.	1,12E+00	1,53E-06	3,66E-04	1,35E+02	1,56E-03
GWP-luluc	kg CO2 eq.	3,00E-01	7,45E-07	9,63E-05	1,84E+00	4,65E-04
GWP-total	kg CO2 eq.	1,18E+02	1,84E-03	2,00E-01	1,79E+03	4,72E+00
ODP	kg CFC 11 eq.	3,21E-01	4,27E-10	4,50E-08	1,18E-04	2,31E-07
AP	mol H+ eq.	7,17E-01	1,07E-05	9,73E-04	6,36E+00	5,86E-03
EP-freshwater	kg P eq.	7,00E-02	1,18E-07	1,71E-05	1,56E+00	8,83E-05
EP-marine	kg N eq.	1,50E-01	3,53E-06	3,23E-04	1,30E+00	5,34E-03
EP-terrestrial	mol N eq.	6,42E+01	3,87E-05	3,52E-03	1,16E+01	2,26E-02
POCP	kg NMVOC eq.	3,51E-01	1,09E-05	1,01E-03	3,10E+00	6,32E-03
ADP-minerals&metals*	kg Sb eq.	4,50E+00	6,33E-09	9,33E-07	2,74E-02	3,87E-06
ADP-fossil*	MJ	1,43E+03	2,79E-02	3,02E+00	3,16E+04	1,56E+01
WDP*	m3	1,79E+02	8,27E-05	1,05E-02	5,69E+02	2,41E-01

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

Use of resources - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
PERE	MJ	2,03E+02	3,88E-04	6,18E-02	8,45E+03	2,85E-01
PERM	MJ	1,52E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	3,55E+02	3,88E-04	6,18E-02	8,45E+03	2,85E-01
PENRE	MJ	1,48E+03	2,96E-02	3,21E+00	3,34E+04	1,66E+01
PENRM	MJ	7,64E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	1,56E+03	2,96E-02	3,21E+00	3,34E+04	1,66E+01
SM	kg	2,60E-02	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	9,85E+01	3,07E-06	4,13E-04	3,00E+01	7,67E-03

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

Waste production - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
HWD	kg	2,16E-01	7,17E-08	8,03E-06	4,43E-02	4,00E-05
NHWD	kg	9,56E+00	1,40E-03	1,51E-04	1,13E+02	3,16E+00
RWD	kg	3,32E-03	1,89E-07	2,02E-05	2,00E-01	1,01E-04

Acronyms

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

Output flows - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	1,89E+00	0,00E+00	9,30E+00	4,32E-01	0,00E+00
MER	kg	8,08E-01	0,00E+00	0,00E+00	8,08E-01	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Acronyms

CRU = Components for re-use; MR = Material for recycling; MER = Materials for energy recovery; EEE = Exported energy, electricity; EET = Exported energy, thermal

Environmental impact indicators for 1208000APP - Alphabet of light Stand Alone 2400 linear 3000K – suspended

Environmental impact parameters - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
GWP-fossil	kg CO2 eq.	6,24E+01	8,16E-04	6,37E-02	1,30E+03	2,51E+00
GWP-biogenic	kg CO2 eq.	6,51E-01	7,01E-07	1,93E-04	1,03E+02	9,76E-04
GWP-luluc	kg CO2 eq.	2,42E-01	3,23E-07	3,08E-05	1,05E+00	2,87E-04
GWP-total	kg CO2 eq.	6,54E+01	8,17E-04	6,39E-02	1,41E+03	2,51E+00
ODP	kg CFC 11 eq.	2,02E-01	1,90E-10	1,42E-08	1,05E-04	1,44E-07
AP	mol H+ eq.	4,17E-01	4,13E-06	3,08E-04	5,01E+00	3,58E-03
EP-freshwater	kg P eq.	3,95E-02	5,30E-08	6,24E-06	1,19E+00	5,42E-05
EP-marine	kg N eq.	8,97E-02	1,42E-06	1,02E-04	9,87E-01	2,92E-03
EP-terrestrial	mol N eq.	4,04E+01	1,56E-05	1,11E-03	8,88E+00	1,37E-02
POCP	kg NMVOC eq.	2,05E-01	4,44E-06	3,18E-04	2,41E+00	3,85E-03
ADP-minerals&metals*	kg Sb eq.	2,83E+00	2,86E-09	3,01E-07	1,77E-02	2,38E-06
ADP-fossil*	MJ	8,27E+02	1,24E-02	9,62E-01	2,22E+04	9,73E+00
WDP*	m3	1,06E+02	3,72E-05	3,68E-03	4,87E+02	1,30E-01

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

Use of resources - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
PERE	MJ	1,39E+02	1,75E-04	2,30E-02	5,50E+03	1,75E-01
PERM	MJ	6,39E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	2,03E+02	1,75E-04	2,30E-02	5,50E+03	1,75E-01
PENRE	MJ	8,91E+02	1,32E-02	1,02E+00	2,37E+04	1,03E+01
PENRM	MJ	1,21E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	9,03E+02	1,32E-02	1,02E+00	2,37E+04	1,03E+01
SM	kg	2,80E-02	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	6,17E+01	1,39E-06	1,39E-04	1,77E+01	4,15E-03

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

Waste production - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
HWD	kg	1,36E-01	3,25E-08	2,54E-06	3,49E-02	2,49E-05
NHWD	kg	6,84E+00	6,40E-04	1,04E-04	8,05E+01	1,87E+00
RWD	kg	2,01E-03	8,41E-08	6,40E-06	1,15E-01	6,32E-05

Acronyms

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

Output flows - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	1,19E+00	0,00E+00	2,91E+00	2,30E-01	0,00E+00
MER	kg	5,08E-01	0,00E+00	0,00E+00	5,08E-01	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Acronyms

CRU = Components for re-use; MR = Material for recycling; MER = Materials for energy recovery; EEE = Exported energy, electricity; EET = Exported energy, thermal

Environmental impact indicators for 2113010A - Alphabet of light System Curved element 45° terminal right powered 3000K – suspended

Environmental impact parameters - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
GWP-fossil	kg CO2 eq.	1,27E+01	1,68E-04	8,76E-03	2,17E+02	6,73E-01
GWP-biogenic	kg CO2 eq.	1,27E-01	1,37E-07	8,01E-06	1,60E+01	2,10E-04
GWP-luluc	kg CO2 eq.	6,20E-02	6,88E-08	4,16E-06	2,44E-01	6,39E-05
GWP-total	kg CO2 eq.	1,25E+01	1,68E-04	8,77E-03	2,34E+02	6,73E-01
ODP	kg CFC 11 eq.	4,52E-02	3,88E-11	1,99E-09	1,06E-05	3,25E-08
AP	mol H+ eq.	7,77E-02	1,05E-06	4,27E-05	7,03E-01	8,26E-04
EP-freshwater	kg P eq.	4,73E-03	1,07E-08	6,63E-07	2,39E-01	1,18E-05
EP-marine	kg N eq.	1,72E-02	3,38E-07	1,42E-05	1,65E-01	7,61E-04
EP-terrestrial	mol N eq.	8,99E+00	3,70E-06	1,55E-04	1,38E+00	3,19E-03
POCP	kg NMVOC eq.	3,82E-02	1,04E-06	4,46E-05	3,62E-01	8,93E-04
ADP-minerals&metals*	kg Sb eq.	6,32E-01	5,72E-10	4,02E-08	2,25E-03	5,19E-07
ADP-fossil*	MJ	1,63E+02	2,54E-03	1,32E-01	3,99E+03	2,19E+00
WDP*	m ³	1,67E+01	7,48E-06	4,36E-04	3,68E+01	3,42E-02

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

Use of resources - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
PERE	MJ	2,91E+01	3,51E-05	2,23E-03	9,64E+02	3,73E-02
PERM	MJ	1,03E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	3,94E+01	3,51E-05	2,23E-03	9,64E+02	3,73E-02
PENRE	MJ	1,79E+02	2,69E-03	1,40E-01	4,22E+03	2,33E+00
PENRM	MJ	2,52E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	1,82E+02	2,69E-03	1,40E-01	4,22E+03	2,33E+00
SM	kg	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m ³	1,35E+01	2,78E-07	1,67E-05	2,40E+00	1,09E-03

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

Waste production - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
HWD	kg	3,03E-02	6,47E-09	3,53E-07	5,20E-03	5,62E-06
NHWD	kg	1,50E+00	1,26E-04	0,00E+00	1,45E+01	4,43E-01
RWD	kg	3,80E-04	1,72E-08	8,83E-07	2,54E-02	1,42E-05

Acronyms
 HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

Output flows - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	2,67E-01	0,00E+00	4,12E-01	0,00E+00	0,00E+00
MER	kg	1,14E-01	0,00E+00	0,00E+00	1,14E-01	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Acronyms
 CRU = Components for re-use; MR = Material for recycling; MER = Materials for energy recovery; EEE = Exported energy, electricity; EET = Exported energy, thermal

Environmental impact indicators for 2135010A - Alphabet of light System Linear 1200 intermediate powered 3000K - wall/ceiling

Environmental impact parameters - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
GWP-fossil	kg CO2 eq.	2,83E+01	4,38E-04	2,68E-02	4,27E+02	1,44E+00
GWP-biogenic	kg CO2 eq.	2,81E-01	3,77E-07	2,45E-05	3,41E+01	4,65E-04
GWP-luluc	kg CO2 eq.	1,59E-01	1,74E-07	1,27E-05	5,69E-01	1,43E-04
GWP-total	kg CO2 eq.	2,92E+01	4,39E-04	2,68E-02	4,63E+02	1,44E+00
ODP	kg CFC 11 eq.	1,01E-01	1,02E-10	6,08E-09	1,35E-05	7,29E-08
AP	mol H+ eq.	1,74E-01	2,22E-06	1,31E-04	1,17E+00	1,84E-03
EP-freshwater	kg P eq.	1,00E-02	2,85E-08	2,03E-06	6,13E-01	2,63E-05
EP-marine	kg N eq.	3,90E-02	7,65E-07	4,35E-05	3,31E-01	1,64E-03
EP-terrestrial	mol N eq.	2,02E+01	8,36E-06	4,75E-04	2,41E+00	7,09E-03
POCP	kg NMVOC eq.	8,79E-02	2,39E-06	1,36E-04	6,18E-01	1,98E-03
ADP-minerals&metals*	kg Sb eq.	1,42E+00	1,54E-09	1,23E-07	4,47E-03	1,16E-06
ADP-fossil*	MJ	3,70E+02	6,68E-03	4,03E-01	8,70E+03	4,90E+00
WDP*	m3	3,73E+01	2,00E-05	1,34E-03	3,51E+01	7,36E-02

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

Use of resources - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
PERE	MJ	7,17E+01	9,42E-05	6,81E-03	1,56E+03	8,33E-02
PERM	MJ	2,87E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	1,00E+02	9,42E-05	6,81E-03	1,56E+03	8,33E-02
PENRE	MJ	4,00E+02	7,10E-03	4,28E-01	9,14E+03	5,21E+00
PENRM	MJ	6,15E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	4,07E+02	7,10E-03	4,28E-01	9,14E+03	5,21E+00
SM	kg	4,00E-03	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	3,03E+01	7,45E-07	5,10E-05	3,66E+00	2,34E-03

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

Waste production - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
HWD	kg	6,77E-02	1,75E-08	1,08E-06	9,88E-03	1,26E-05
NHWD	kg	3,63E+00	3,44E-04	0,00E+00	3,08E+01	9,62E-01
RWD	kg	8,78E-04	4,52E-08	2,70E-06	6,46E-02	3,17E-05

Acronyms
 HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

Output flows - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	5,99E-01	0,00E+00	1,26E+00	0,00E+00	0,00E+00
MER	kg	2,55E-01	0,00E+00	0,00E+00	2,55E-01	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Acronyms
 CRU = Components for re-use; MR = Material for recycling; MER = Materials for energy recovery; EEE = Exported energy, electricity; EET = Exported energy, thermal

Environmental impact indicators for 2154010A - Alphabet of light system – 90° joint – not powered 3000K - suspended

Environmental impact parameters - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
GWP-fossil	kg CO2 eq.	2,79E+00	3,61E-05	1,59E-03	3,55E+01	1,31E-01
GWP-biogenic	kg CO2 eq.	2,32E-02	2,82E-08	1,46E-06	2,57E+00	3,55E-05
GWP-luluc	kg CO2 eq.	2,31E-03	1,52E-08	7,56E-07	4,20E-02	1,16E-05
GWP-total	kg CO2 eq.	2,07E+00	3,61E-05	1,60E-03	3,82E+01	1,31E-01
ODP	kg CFC 11 eq.	8,59E-03	8,31E-12	3,61E-10	1,38E-06	6,16E-09
AP	mol H+ eq.	1,32E-02	2,61E-07	7,76E-06	1,02E-01	1,55E-04
EP-freshwater	kg P eq.	7,66E-04	2,25E-09	1,21E-07	4,75E-02	2,11E-06
EP-marine	kg N eq.	3,02E-03	8,07E-08	2,58E-06	2,61E-02	1,48E-04
EP-terrestrial	mol N eq.	1,71E+00	8,86E-07	2,82E-05	1,97E-01	6,04E-04
POCP	kg NMVOC eq.	6,32E-03	2,46E-07	8,10E-06	5,18E-02	1,69E-04
ADP-minerals&metals*	kg Sb eq.	1,20E-01	1,20E-10	7,32E-09	3,15E-04	9,80E-08
ADP-fossil*	MJ	3,10E+01	5,43E-04	2,40E-02	5,43E+02	4,11E-01
WDP*	m3	3,34E+00	1,58E-06	7,94E-05	4,97E+00	6,56E-03

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

Use of resources - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
PERE	MJ	2,84E+00	7,39E-06	4,05E-04	1,17E+02	6,65E-03
PERM	MJ	1,97E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	4,81E+00	7,39E-06	4,05E-04	1,17E+02	6,65E-03
PENRE	MJ	3,76E+01	5,76E-04	2,55E-02	5,81E+02	4,37E-01
PENRM	MJ	3,41E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	3,79E+01	5,76E-04	2,55E-02	5,81E+02	4,37E-01
SM	kg	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	2,56E+00	5,86E-08	3,03E-06	2,97E-01	2,08E-04

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

Waste production - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
HWD	kg	5,72E-03	1,36E-09	6,42E-08	7,31E-04	1,07E-06
NHWD	kg	1,86E-01	2,61E-05	0,00E+00	2,25E+00	7,94E-02
RWD	kg	5,69E-05	3,68E-09	1,61E-07	2,64E-03	2,67E-06

Acronyms

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

Output flows - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	5,07E-02	0,00E+00	7,49E-02	0,00E+00	0,00E+00
MER	kg	2,16E-02	0,00E+00	0,00E+00	2,16E-02	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Acronyms

CRU = Components for re-use; MR = Material for recycling; MER = Materials for energy recovery; EEE = Exported energy, electricity; EET = Exported energy, thermal

Environmental impact indicators for 2250010A - Alphabet of light System linear - linear joint

Environmental impact parameters - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
GWP-fossil	kg CO2 eq.	1,12E+00	9,70E-06	5,30E-04	1,31E-02	2,98E-02
GWP-biogenic	kg CO2 eq.	2,21E-03	5,82E-09	4,84E-07	1,27E-04	6,57E-06
GWP-luluc	kg CO2 eq.	8,30E-05	4,70E-09	2,51E-07	2,62E-05	1,94E-06
GWP-total	kg CO2 eq.	3,30E-01	9,71E-06	5,30E-04	1,33E-02	2,98E-02
ODP	kg CFC 11 eq.	1,41E-03	2,17E-12	1,20E-10	2,78E-09	1,03E-09
AP	mol H+ eq.	1,22E-03	1,20E-07	2,58E-06	6,81E-05	2,72E-05
EP-freshwater	kg P eq.	6,04E-05	5,47E-10	4,01E-08	7,05E-06	3,55E-07
EP-marine	kg N eq.	4,38E-04	3,30E-08	8,59E-07	1,32E-05	3,23E-05
EP-terrestrial	mol N eq.	2,80E-01	3,65E-07	9,39E-06	1,30E-04	1,08E-04
POCP	kg NMVOC eq.	8,32E-04	9,80E-08	2,69E-06	4,05E-05	3,00E-05
ADP-minerals&metals*	kg Sb eq.	1,98E-02	2,85E-11	2,43E-09	8,64E-08	1,63E-08
ADP-fossil*	MJ	7,71E+00	1,42E-04	7,97E-03	1,83E-01	6,91E-02
WDP*	m3	7,17E-01	3,82E-07	2,64E-05	7,10E-01	1,46E-03

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

Use of resources - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
PERE	MJ	2,68E-01	1,75E-06	1,35E-04	2,02E-02	1,10E-03
PERM	MJ	5,66E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	8,34E-01	1,75E-06	1,35E-04	2,02E-02	1,10E-03
PENRE	MJ	1,24E+01	1,50E-04	8,46E-03	1,95E-01	7,35E-02
PENRM	MJ	4,11E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	1,24E+01	1,50E-04	8,46E-03	1,95E-01	7,35E-02
SM	kg	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	4,21E-01	1,40E-08	1,01E-06	1,71E-02	4,60E-05

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

Waste production - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
HWD	kg	9,35E-04	3,14E-10	2,14E-08	2,83E-07	1,80E-07
NHWD	kg	1,34E-02	5,67E-06	0,00E+00	2,31E-03	1,47E-02
RWD	kg	5,71E-06	9,63E-10	5,34E-08	6,98E-07	4,44E-07

Acronyms
 HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

Output flows - Results per declared unit

Indicator	Unit	Manufacturing Stage	Distribution Stage	Installation Stage	Use Stage	End-of-life Stage
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	8,34E-03	0,00E+00	2,49E-02	0,00E+00	0,00E+00
MER	kg	3,55E-03	0,00E+00	0,00E+00	3,55E-03	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Acronyms
 CRU = Components for re-use; MR = Material for recycling; MER = Materials for energy recovery; EEE = Exported energy, electricity; EET = Exported energy, thermal

Calculation methodology

The methodology followed as a reference standard is the one of the Life Cycle Assessment (LCA); «LCA addresses environmental aspects and potential environmental impacts (e.g. resource use and environmental consequences of releases) throughout the product life cycle, from raw material acquisition through manufacturing and use, right through to end-of-life treatment, recycling and final disposal (i.e. from cradle to grave).» [ISO 14040:2021].



Declared Unit

The study was carried out using 1 product as a reference unit. The allocation was made on a mass basis.

Rules of Exclusion and Cut off

In 2022 the production process took place entirely in the Pregnana Milanese plant.

Are excluded:

- employee travel;
- packaging of the auxiliary material.

Data quality

With reference to the EN 50693:2019 standard, the analysis describes a specific product using specific data for the processes on which the manufacturer of the specific product has an influence:

- all data related to the CORE phases are site specific;
- for UPSTREAM data, the data regarding weight, quantity, raw materials and waste are derived from company databases and they are site-specific. The type of material and processes were taken from the Ecoinvent 3.8 database.

The company procures itself through the national energy system, and therefore the Italian “residual energy mix” is adopted.

Generic data

In the use of generic data, the following criteria were applied:

- geographic equivalence;
- technological equivalence;
- equivalence with respect to system boundaries.

For generic data, information between 2010 and 2020 was considered.

For the disposal scenarios, reference was made to global data according to EN 50693:2019.

Reference year

Site-specific data referred to the year 2022.

As regards generic data, information between 2010 and 2020 was considered.

References

- [1] ISO 14040: 2006, Environmental management – Life cycle assessment – Principles and framework.
- [2] ISO 14044: 2006, Environmental management – Life cycle assessment – Requirements and guidelines.
- [3] UNI EN ISO 14025:2010, Environmental labels and declarations – Type III environmental declarations - Principles and procedures.
- [4] EN 50693:2019 Product category rules for life cycle assessments of electronic and electrical products and systems
- [5] PCR EPDItaly007 (Stand-alone) – Rev 3.0 Electronic and electrical products and systems. Published on: 13/01/2023.
- [6] EPDItaly Regulation rev. 5.2 published on 16/02/2022.
- [7] Background report. F. Gilardelli, C. Albini, Artemide S.p.A. Life cycle analysis of 'Alphabet of Light' modular residential and professional indoor lighting system components. March 2023.



fuzetea

Artemide[®]
The Human and Responsible Light