SCHRÉDER PRODUCT ENVIRONMENTAL PROFILE

CALLA LED
THE GREEN LIGHT

Indirect LED lighting solution for a convivial ambiance

Product Environmental Profile

Schréder's environmental commitment

The Schréder Group specialises in outdoor lighting with an energy efficient approach. As a responsible manufacturer, Schréder promotes environmental protection practices.
Our commitment is to reduce the energy consumption of our products, to promote technologies that preserve the environment and to develop new products that are even more energy and eco-efficient.
Schréder products are developed following the Product Environmental Profile (PEP) Program.

Description

The Calla Led luminaire is composed of:

- an aluminium housing equipped with 28 LEDs at a driving current of 350 mA
- an electronic power supply
- a polycarbonate protector
- electric cables.

Materials

Product weight:	9.58 kg
Metals (% weight):	63.86 %
Plastics (% weight):	32.93 %
Glass (% weight):	0.15 %
Others (% weight):	3.06 %
TOTAL:	100%

*Packaging not included

This product is designed in conformity with the requirements of the RoHS directive: European Directive 2002/95/EC of 27 January 2003. It does not contain, or in the authorized proportions, lead, mercury, cadmium, hexavalent chromium, flame retardant materials (polybromobiphenyls PBB, polybromodiphenylethers PBDE) as mentioned in the Directive.

Life Cycle Assessment Scope

Functional unit
All calculations are based on one year in the lifetime of the luminaire.

In comparison with products belonging to the same product category, the Calla Led luminaire has a product life span of 25 years.

The environmental analysis has been calculated taking into account the entire life cycle of the product from specifications to dismantling (cradle to grave).
The pole is not included in this analysis.

Manufacturing

All the materials, processes and transport requirements (from the suppliers to the assembly factory) are carefully examined and integrated into this life cycle step.

Distribution

Schréder produces its products where they are sold. Manufacturing close to customers means less energy consumption, less transport and faster deliveries. Schréder products thereby easily comply with the product distribution scenario established by the PEP. The transport of the luminaire from the factory to the installation site is on average 1000 km by an articulated vehicle.

Schréder also optimises product packaging according to the product weight and volume to reduce energy consumption during transport.

The packaging for the Calla Led luminaire weighs a total of 1.86 kg.

- 1.8 kg for the cardboard box
- 60 g for the installation sheet.

End of life

The Calla Led luminaire is compliant with the Waste from Electrical and Electronic Equipment Directive 2002/96/EC which aims to minimise the impact of end-of-life electrical and electronic equipment on human health and the environment.

The Calla Led luminaire is recycled in accordance with local and national laws.

Utilisation

The Calla Led luminaire does not generate any environmental pollution that requires special measures (noise, emissions, etc).

Lamp power: 31.2 W @350mA

Mode	CLO coefficient	Real Power (W)	Operating hours (h/per year)	Electricity consumption (kWh/year)
Full power	No CLO	31.2	4000	124.8
Dimming mode 1	0	0	0	0
Dimming mode 2	0	0	0	0
Dimming mode 3	0	0	0	0
Dimming mode 4	0	0	0	0
Total			**4000**	**124.8**

Environmental impacts

In collaboration with an independent agency specialised in sustainable development strategies, Schréder has established a Life Cycle Assessment tool (InstantLCA) to analyse the environmental impacts of our luminaires, which follows the principles of **ISO 14040:2006**.

Primary data have been directly encoded by Schréder, and secondary data are provided by internationally recognised databases such as **Ecoinvent v2.2**.

This assessment takes into account the manufacturing (including the processing of raw materials), transport, utilisation due to electric consumption and maintenance and the end-of-life phases.

For the utilisation phase, the following assumptions were made:

- Life span: 25 years
- Electrical power model: electrical mix of Europe
- Operating hours: 4000 hours/year
- Lamp replacement: LED relamping every 25 years

Indicators	Unit	Life cycle assessment	Manufacturing	Distribution	Utilisation		End-of-life
					Electricity	Maintenance	
Non renewable resources depletion	Person-reserve	**0.0082**	43.7 %	0.4 %	38.1 %	17.9 %	-0.1 %
Energy consumption	MJ	**1448**	7.5 %	0.6 %	92.1 %	2.2 %	-2.5 %
Water consumption	m^3	**0.4878**	9.5 %	1.1 %	86.8 %	4.5 %	-1.9 %
Greenhouse effect	Kg eq CO2	**66.6**	9.8 %	0.2 %	90.1 %	3 %	-3 %
Ozone depletion	Kg eq CFC11	**4.623E-06**	11.4 %	0.7 %	85.7 %	4.7 %	-2.6 %
Human toxicity	CTU	**3.198E-06**	24.5 %	0.5 %	59.1 %	6.4 %	9.5 %
Water toxicity	CTU	**7.162**	47.1 %	1.8 %	56.1 %	10.6 %	-15.7 %
Photochemical ozone creation	Kg NMVOC	**0.153**	10.9 %	1.2 %	87 %	4.5 %	-3.5 %
Air acidification	Kg eq H+	**0.2627**	11.6 %	0.6 %	87.1 %	4.5 %	-3.7 %
Eutrophication	Kg eq PO	**0.0281**	14.8 %	1.1 %	79.7 %	7.4 %	-3 %
Hazardous waste production	Kg	**0.0163**	3.8 %	0 %	11.4 %	0.7 %	84 %

The most significant impact of a luminaire on the environment lies in its utilisation phase, and more specifically, in the energy consumed. Schréder focuses the greatest proportion of its efforts on developing products which consume less energy for more performance.

GLOSSARY

Acidification	The acid substances present in the atmosphere are carried by rain. A high level of acidity in the rain can cause damage to forests. The contribution of acidification is calculated using the acidification potentials of the substances concerned and is expressed in kilogram equivalent of H+.
Energy Consumption	This indicator gives the quantity of energy consumed, whether it be from fossil, hydroelectric, nuclear or other sources. This indicator takes into account the energy from the material produced during combustion. It is expressed in MJ.
Eutrophication	Excessive enrichment of water surfaces with nutrients, and the associated adverse biological effects (perturbation of the aquatic medium). Impacts are expressed in gram equivalent PO43-.
Functional Unit	A functional unit is the measurement unit to which all results listed in the PEP refer. That measurement serves as the basis for comparison to compare the data presented in two or more PEPs for products belonging to a specific category of homogeneous goods/services, i.e. the same Product Category Rule.
Greenhouse Effect	Warming of the atmosphere due to the reduction in outgoing long wave heat radiation resulting from their absorption by gases such as carbon dioxide, methane, etc. It is expressed in gram equivalent CO2.
Hazardous Waste	This indicator calculates the quantity of specially treated waste created during all the life cycle phases (manufacturing, distribution and utilisation). For example, special industrial waste in the manufacturing phase, waste associated with the production of electrical power, etc. It is expressed in kg.
Human toxicity	The degree to which a chemical substance elicits a deleterious or adverse effect upon the biological system of human exposed to the substance over a designated time period. It is expressed in CTU (chronic toxicity unit).
InstantLCA	Software provided by Intertek – RDC to model environmental impacts based on the Life Cycle Assessment methodology.
Life Cycle Assessment	Life Cycle Assessment (LCA) is a methodology governed by the ISO 14040 series that aims to quantify the energy and environmental load of the life cycle of a product or activity, through the quantification of energy and waste materials and emissions (solid, liquid and gaseous) released into the environment from the extraction of raw materials to final waste disposal.
Ozone Depletion	This indicator defines the contribution to the phenomenon of the disappearance of the stratospheric ozone layer due to the emission of certain specific gases. The effect is expressed in kilogram equivalent of CFC-11.
Photochemical Oxidant Formation	This indicator quantifies the contribution to the "smog" phenomenon (the photochemical oxidation of certain gases which generates ozone) and is expressed in gram equivalent of NMVOC (Non-methane volatile organic compounds).
Non renewable resources depletion	This indicator quantifies the consumption of raw materials during the life cycle of the product, thereby lowering their availability for future generations. It is expressed in person-reserve, meaning the quantity of the resource available to an average world citizen.
Water Consumption	This indicator calculates the volume of water consumed, including drinking water and water from industrial sources. It is expressed in m^3.
Water Toxicity	Potential environmental toxicity of residues, leachate, or volatile gases to the biocoenosis of plants and animals. Ecotoxic substances alter the composition of the species of ecosystems, destabilizing it thereby and additionally threatening sensitive species in their existence. It is expressed in CTU (chronic toxicity unit).
WEEE waste	For the products in the scope of the European Directive concerning WEEE wastes (2002/96/CE), part of the product that has to be treated selectively regarding the appendix I of the Directive.

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