Product Environmental Profile

EXIWAY-ONE IP65 ACT.24/600SA/1NC HF

Schneider Electric

Product Environmental Profile - PEP

Product overview

The main purpose of the Emergency lighting EXIWAY is to provide emergency lighting in compliance with European standards.

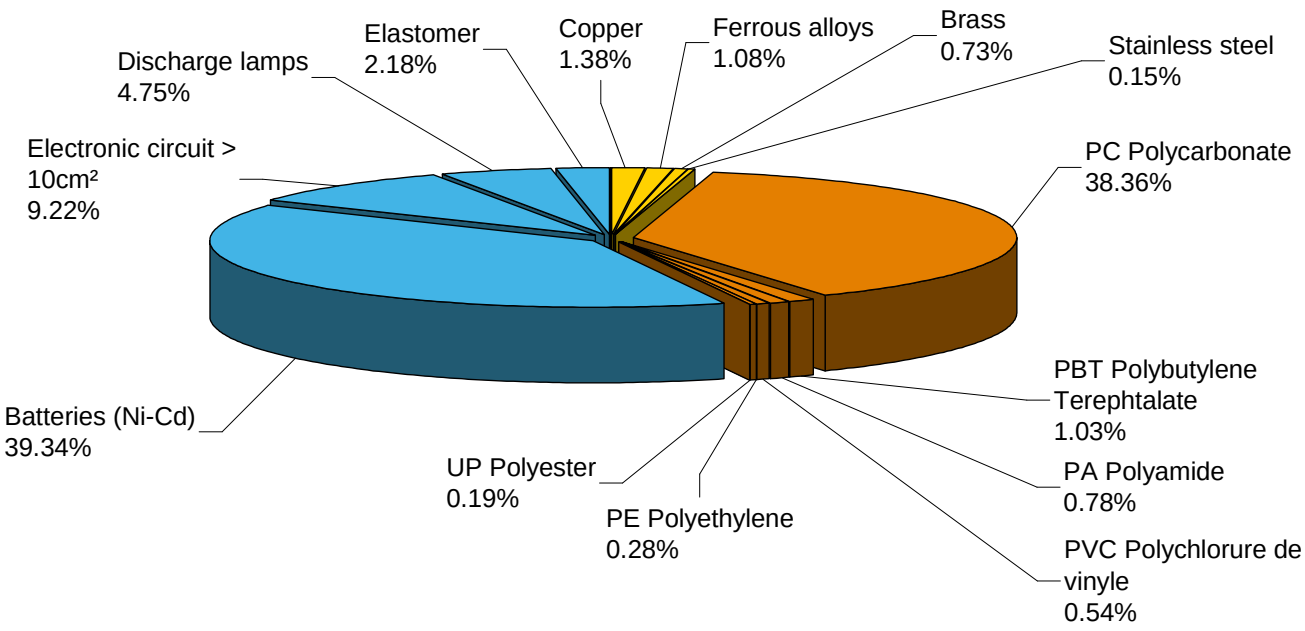
This subrange can provide permanent lighting and consists of 33 Commercial Ref's of Exiway ONE and PLUS, IP42/IP65

The representative product used for the analysis is Emergency lighting EXIWAY-ONE IP65 ACT.24/600SA/1NC HF, Ref: OVA38690.

The environmental impacts of this referenced product are representative of the impacts of the other products of the range which are developed with a similar technology.
The environmental analysis was performed in conformity with ISO 14040.

Constituent materials

The mass of the product range is from 1650 g and 1735 g including packaging. It is 1735 g for the Emergency lighting EXIWAY-ONE IP65 ACT.24/600SA/1NC HF, Ref: OVA38690.
The constituent materials are distributed as follows:



Substance assessment

Products of this range are designed in conformity with the requirements of the RoHS directive (European Directive 2002/95/EC of 27 January 2003) and do not contain, or only contain in the authorised proportions, lead, mercury, cadmium, hexavalent chromium or flame retardants (polybrominated biphenyls - PBB, polybrominated diphenyl ethers - PBDE) as mentioned in the Directive

Manufacturing

The Emergency lighting EXIWAY is manufactured at a production site which complies with the regulations governing industrial sites.

Distribution

The weight and volume of the packaging have been optimized, based on the European Union's packaging directive.
The Emergency lighting EXIWAY packaging weight is *106.4 g*. It consists of Paper (Recycled, With Deinking) 9.4g and Cardboard (kraft) 97g.
The product distribution flows have been optimised by setting up local distribution centres close to the market areas.

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Use

The products of the Emergency lighting EXIWAY range do not generate environmental pollution (noise, emissions) requiring special precautionary measures in standard use.
The electrical power consumption depends on the conditions under which the product is implemented and used. The electrical power consumed by this Emergency lighting EXIWAY sub-range is between 10.38 W and 14.4 W in permanent lighting operation. It is 16.4 W in active mode (battery charge) and 14.4W 98 % in standby mode for the referenced Emergency lighting EXIWAY-ONE IP65 ACT.24/600SA/1NC HF, Ref: OVA38690.

End of life

At end of life, the products in the Emergency lighting EXIWAY have been optimized to decrease the amount of waste and allow recovery of the product components and materials.
This product range contains Batteries, Printed circuit board and Fluorescent lamps that should be separated from the stream of waste so as to optimize end-of-life treatment by special treatments. The location of these components and other recommendations are given in the End of Life Instruction document which is available for this product range.
The recyclability potential of the products has been evaluated using the “Codde- BV recyclability and recoverability calculation method” (version V1, 20 Sep. 2008 presented to the French Agency for Environment and Energy Management: ADEME).
According to this method, the potential recyclability ratio is: 72 %.
As described in the recyclability calculation method this ratio includes only metals and plastics which have proven industrial recycling processes.

Environmental impacts

Life cycle assessment has been performed on the following life cycle phases: Materials and Manufacturing (M), Distribution (D), Installation (I) Use (U), and End of life (E).
Modeling hypothesis and method:
- the calculation was performed on the Emergency lighting EXIWAY-ONE IP65 ACT.24/600SA/1NC HF, Ref: OVA38690 In permanent lighting operation mode.
- product packaging: is included
- installation components: no special components included.
- scenario for the Use phase: this product range is included in the category Energy consuming product (assumed service life is 10 years and use scenario is: the consumed power is 14.4 W and 98% service uptime)
The electrical power model used for calculation is Italian model.
End of life impacts are based on a worst case transport distance to the recycling plant (1000km)

Presentation of the product environmental impacts

Environmental indicators	Unit	For 1 Emergency lighting EXIWAY-ONE IP65 ACT.24/600SA/1NC HF, REF: OVA38690					
		S = M + D + I + U + E	M	D	I	U	E
Raw Material Depletion	Y-1	8.56E-13	6.79E-13	1.05E-17	0.00E+00	1.77E-13	3.53E-18
Energy Depletion	MJ	1.37E+04	3.27E+02	6.435	0.00E+00	1.34E+04	2.59E+00
Water depletion	dm^3	8.86E+02	2.07E+02	2.053	0.00E+00	6.77E+02	2.46E-01
Global Warming	g≈CO_2	9.16E+05	1.78E+04	3.32E+02	0.00E+00	8.98E+05	2.05E+02
Ozone Depletion	g≈CFC-11	2.77E-01	2.47E-03	1.92E-04	0.00E+00	2.74E-01	1.45E-04
Air Toxicity	m^3	2.67E+08	6.02E+06	6.52E+04	0.00E+00	2.61E+08	3.87E+04
Photochemical Ozone Creation	g≈C_2H_4	4.69E+02	6.286	2.51E-01	0.00E+00	4.62E+02	1.75E-01
Air acidification	g≈H^+	2.21E+02	4.941	4.56E-02	0.00E+00	2.15E+02	2.62E-02
Water Toxicity	dm^3	1.28E+05	6.14E+03	79.063	0.00E+00	1.22E+05	2.56E+01
Water Eutrophication	g≈PO_4	1.38E+01	7.408	3.36E-02	0.00E+00	6.394	3.41E-03
Hazardous waste production	kg	3.92E+00	2.21E-01	4.40E-04	0.00E+00	3.699	7.63E-05

Life cycle assessment has been performed with the EIME software (Environmental Impact and Management Explorer), version 4.0, and with its database version V11 (BDD11,0,2009).
The U phase is the life cycle phase which has the greatest impact on the majority of environmental indicators.

System approach

As the products of the range are designed in accordance with the RoHS Directive (European Directive 2002/95/EC of 27 January 2003), they can be incorporated without any restriction in an assembly or an installation subject to this Directive.
Please note that the values given above are only valid within the context specified and cannot be used directly to draw up the environmental assessment of an installation.

Glossary

Raw Material Depletion (RMD)	This indicator quantifies the consumption of raw materials during the life cycle of the product. It is expressed as the fraction of natural resources that disappear each year, with respect to all the annual reserves of the material.
Energy Depletion (ED)	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.
Water Depletion (WD)	This indicator calculates the volume of water consumed, including drinking water and water from industrial sources. It is expressed in dm^3.
Global Warming (GW)	The global warming of the planet is the result of the increase in the greenhouse effect due to the sunlight reflected by the earth's surface being absorbed by certain gases known as "greenhouse-effect" gases. The effect is quantified in gram equivalent of CO_2.
Ozone Depletion (OD)	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 gram equivalent of CFC-11.
Air Toxicity (AT)	This indicator represents the air toxicity in a human environment. It takes into account the usually accepted concentrations for several gases in the air and the quantity of gas released over the life cycle. The indication given corresponds to the air volume needed to dilute these gases down to acceptable concentrations.
Photochemical Ozone Creation (POC)	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 ethylene (C_2H_4).
Air Acidification (AA)	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 mode equivalent of H^+.
Water Toxicity (WT)	This indicator represents the water toxicity. It takes into account the usually accepted concentrations for several substances in water and the quantity of substances released over the life cycle. The indication given corresponds to the water volume needed to dilute these substances down to acceptable concentrations.
Water Eutrophication (WE)	Eutrophication is a natural process defined, as the enrichment in mineral salts of marine or lake waters , or a process accelerated by human intervention, defined as the enrichment in nutritive elements (phosphorous compounds, nitrogen compounds and organic matter). This indicator calculates the water eutrophication of lakes and marine waters by the release of specific substances in the effluents. It is expressed in grams equivalency of PO43-(phosphate).
Hazardous Waste Production (HWP)	This indicator calculates the quantity of specially treated waste created during all the life cycle phases (manufacturing, distribution and utilization). For example, special industrial waste in the manufacturing phase, waste associated with the production of electrical power, etc. It is expressed in kg.

PEP in compliance with Schneider-Electric TT01 V5.1 and TT02 V15 procedures

PEP established according to PCR PEP ecopassport 2010:1.0 rules

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