Product Environmental Profile

Connected dimmer, Elko RS16, Smart, 200 W, universal, multiwire, LED, rotary push type, polar white

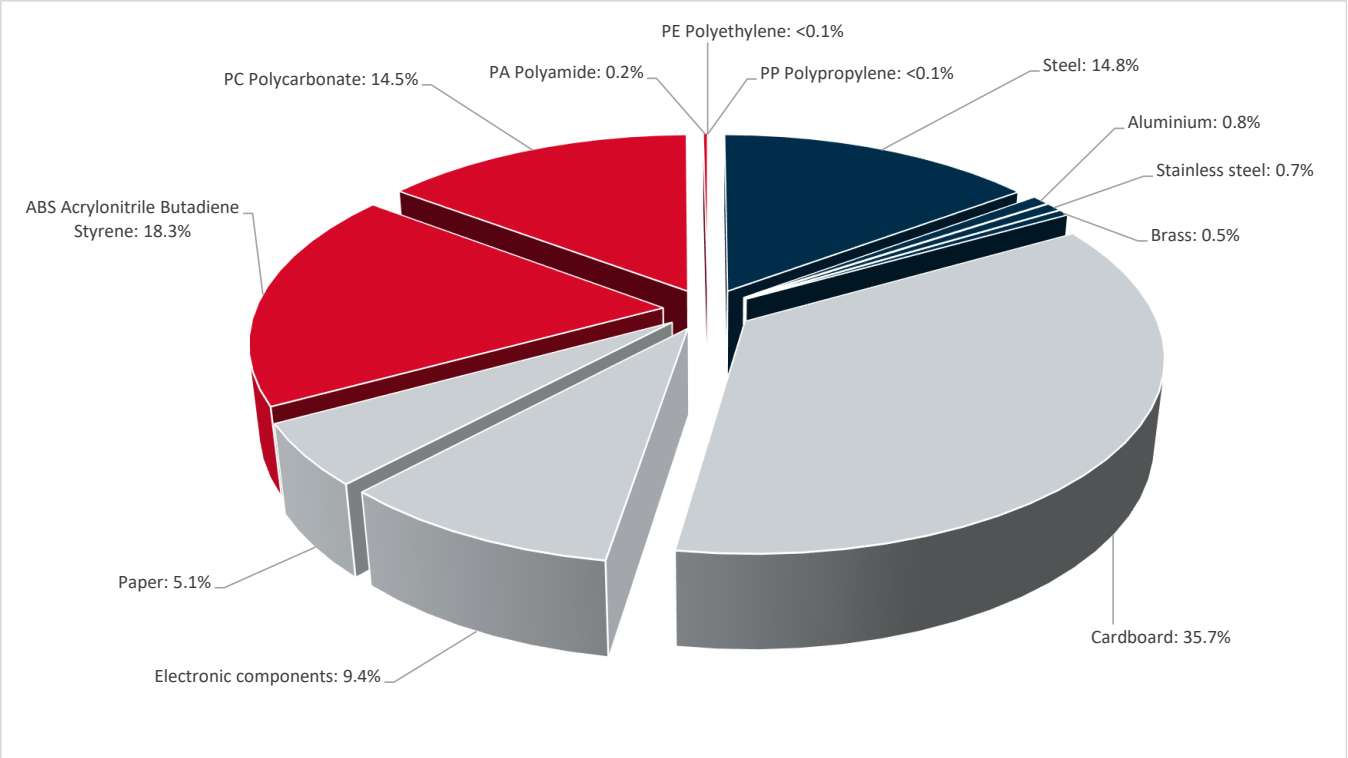
Representative of all ELKO flush wall box mounted connected devices and the range accessories

General information

Reference product	Connected dimmer, Elko RS16, Smart, 200 W, universal, multiwire, LED, rotary push type, polar white - EKO07281
Description of the product	The rotary LED dimmer is dedicated to indoor control and dimming of lights. It enables the integration into the Elko Smart system as HEMS (Home Energy Management System). The lights can be dimmed and turned on and off from either standard push button switch or from the wireless switch or remotely.
Description of the range	The products of the range are: Representative of all ELKO flush wall box mounted connected devices and the range accessories The environmental impacts of this reference product are representative of the impacts of the other products of the range which are developed with a similar technology.
Functional unit	To switch ON & OFF and to adjust the brightness of the light by reducing or increasing the RMS voltage operating at the rated voltage U and rated current I, for the reference service life of the product of 10 years. As connected equipment, this product includes a digital control service via a smartphone app or other IT equipment.
Specifications are:	I: 1 A Ue: 230 V Use rate: 30% / Load rate: 10% / Dimming level: 50% Electricity type and frequency: AC 50 Hz Degrees of protection IP and IK: IP20; IK02 according IEC 60529 RLT (reference life time): 10 years

Constituent materials

Reference product mass	158 g	including the product, its packaging and additional elements and accessories



	Others	50.2%
	Plastics	33.0%
	Metals	16.8%

Substance assessment

Details of ROHS and REACH substances information are available on the ELKO website
https://www.elko.no/om-elko/miljo/

Additional environmental information

End Of Life	Recyclability potential:	**28%**	The recyclability rate was calculated from the recycling rates of each material making up the product based on REEECY'LAB tool developed by Ecosystem, for components/materials not covered by the tool, data from the EIME database and the related PSR was taken. If no data was found a conservative assumption was used (0% recyclability).

Environmental impacts

Reference service life time	10 years
Product category	Other equipments - Active product
Life cycle of the product	The manufacturing, the distribution, the installation, the use and the end of life were taken into consideration in this study.
Electricity consumption	The electricity consumed during manufacturing processes is considered for each part of the product individually, the final assembly generates a negligible consumption.
Installation elements	No special components needed
Use scenario	The product is in active mode 30% of the time with a power use of 0.44 W and in OFF mode 70% of the time with a power use of 0.32 W for RLT (reference life time) 10 years. The embedded connected feature of the product is already included in respective active and stand by power consumptions.
Time representativeness	The collected data are representative of the year 2024
Technological representativeness	The Modules of Technologies such as material production, manufacturing processes and transport technology used in the PEP analysis (LCA EIME in the case) are similar and representative of the actual type of technologies used to make the product.
Final assembly site	Riga, LV
Geographical representativeness	Europe

Energy model used	[A1 - A3]	[A5]	[B6]	[C1 - C4]
	Latvia, LV; 2020	Norway, NO; 2020 Sweden, SE; 2020 Finland, FI; 2020	Norway, NO; 2020 Sweden, SE; 2020 Finland, FI; 2020	Norway, NO; 2020 Sweden, SE; 2020 Finland, FI; 2020

Detailed results of the optional indicators mentioned in PCRed4 are available in the LCA report and on demand in a digital format - Country Customer Care Center - https://www.elko.no/kontakt-oss/

Mandatory Indicators		**Connected dimmer, Elko RS16, Smart, 200 W, universal, multiwire, LED, rotary push type, polar white - EKO07281**						
Impact indicators	**Unit**	**Total (without Module D)**	**[A1 - A3] - Manufacturing**	**[A4] - Distribution**	**[A5] - Installation**	**[B1 - B7] - Use**	**[C1 - C4] - End of life**	**[D] - Benefits and loads**
Contribution to climate change	kg CO2 eq	4.89E+00	3.78E+00	4.06E-02	6.60E-02	7.66E-01	2.42E-01	-9.84E-02
Contribution to climate change-fossil	kg CO2 eq	4.97E+00	3.87E+00	4.06E-02	6.28E-02	7.58E-01	2.42E-01	-1.69E-01
Contribution to climate change-biogenic	kg CO2 eq	-8.25E-02	-9.38E-02	0*	0*	0*	0*	7.09E-02
Contribution to climate change-land use and land use change	kg CO2 eq	2.54E-05	2.54E-05	0*	0*	0*	0*	0.00E+00
Contribution to ozone depletion	kg CFC-11 eq	4.56E-07	4.42E-07	6.22E-11	8.55E-10	1.29E-08	2.03E-10	-1.82E-08
Contribution to acidification	mol H+ eq	3.46E-02	2.53E-02	2.71E-04	1.93E-04	8.45E-03	3.74E-04	-9.76E-04
Contribution to eutrophication, freshwater	kg $(PO4)^{3-}$ eq	3.71E-05	1.74E-05	1.52E-08	1.51E-06	1.78E-05	3.91E-07	-1.19E-06
Contribution to eutrophication marine	kg N eq	4.06E-03	2.80E-03	1.28E-04	8.40E-05	9.33E-04	1.10E-04	-1.62E-04
Contribution to eutrophication, terrestrial	mol N eq	6.18E-02	2.95E-02	1.40E-03	5.84E-04	2.92E-02	1.21E-03	-1.54E-03
Contribution to photochemical ozone formation - human health	kg COVNM eq	1.29E-02	9.75E-03	3.56E-04	1.34E-04	2.34E-03	3.46E-04	-4.62E-04
Contribution to resource use, minerals and metals	kg Sb eq	1.58E-03	1.57E-03	0*	0*	6.53E-06	0*	-2.86E-05
Contribution to resource use, fossils	MJ	1.33E+02	5.05E+01	5.66E-01	6.54E-01	7.63E+01	5.28E+00	-3.09E+00
Contribution to water use	m3 eq	3.93E+00	3.08E+00	0*	5.10E-03	8.06E-01	3.78E-02	-5.80E-02

Inventory flows Indicators		Connected dimmer, Elko RS16, Smart, 200 W, universal, multiwire, LED, rotary push type, polar white - EKO07281						
Inventory flows	Unit	Total (without Module D)	[A1 - A3] - Manufacturing	[A4] - Distribution	[A5] - Installation	[B1 - B7] - Use	[C1 - C4] - End of life	[D] - Benefits and loads
Contribution to use of renewable primary energy excluding renewable primary energy used as raw material	MJ	1.33E+02	1.67E+00	0*	8.58E-02	1.31E+02	0*	1.83E-01
Contribution to use of renewable primary energy resources used as raw material	MJ	1.24E+00	1.24E+00	0*	0*	0*	0*	-9.12E-01
Contribution to total use of renewable primary energy resources	MJ	1.34E+02	2.91E+00	0*	8.58E-02	1.31E+02	0*	-7.29E-01
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	1.31E+02	4.84E+01	5.66E-01	6.54E-01	7.63E+01	5.28E+00	-3.09E+00
Contribution to use of non renewable primary energy resources used as raw material	MJ	2.12E+00	2.12E+00	0*	0*	0*	0*	-1.09E-03
Contribution to total use of non-renewable primary energy resources	MJ	1.33E+02	5.05E+01	5.66E-01	6.54E-01	7.63E+01	5.28E+00	-3.09E+00
Contribution to use of secondary material	kg	6.62E-06	6.62E-06	0*	0*	0*	0*	0.00E+00
Contribution to use of renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to use of non renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to net use of freshwater	m^3	9.16E-02	7.18E-02	0*	1.19E-04	1.89E-02	8.79E-04	-1.35E-03
Contribution to hazardous waste disposed	kg	3.12E+01	3.09E+01	0*	0*	2.32E-01	1.41E-02	-2.26E+00
Contribution to non hazardous waste disposed	kg	2.77E+00	1.17E+00	1.43E-03	2.83E-02	1.51E+00	5.53E-02	-1.40E-01
Contribution to radioactive waste disposed	kg	6.34E-04	5.67E-04	1.02E-06	3.49E-06	6.06E-05	2.20E-06	-7.29E-05
Contribution to components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to materials for recycling	kg	2.94E-02	4.43E-03	0*	3.09E-05	0*	2.49E-02	0.00E+00
Contribution to materials for energy recovery	kg	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to exported energy	MJ	2.98E-03	3.94E-05	0*	2.69E-03	0*	2.46E-04	0.00E+00

* represents less than 0.01% of the total life cycle of the reference flow

Contribution to biogenic carbon content of the product	kg of C	0.00E+00
Contribution to biogenic carbon content of the associated packaging	kg of C	1.80E-02

Mandatory Indicators		Connected dimmer, Elko RS16, Smart, 200 W, universal, multiwire, LED, rotary push type, polar white - EKO07281							
Impact indicators	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to climate change	kg CO2 eq	7.66E-01	0*	0*	0*	0*	0*	7.66E-01	0*
Contribution to climate change-fossil	kg CO2 eq	7.58E-01	0*	0*	0*	0*	0*	7.58E-01	0*
Contribution to climate change-biogenic	kg CO2 eq	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to climate change-land use and land use change	kg CO2 eq	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to ozone depletion	kg CFC-11 eq	1.29E-08	0*	0*	0*	0*	0*	1.29E-08	0*
Contribution to acidification	mol H+ eq	8.45E-03	0*	0*	0*	0*	0*	8.45E-03	0*
Contribution to eutrophication, freshwater	kg $(PO4)^{3-}$ eq	1.78E-05	0*	0*	0*	0*	0*	1.78E-05	0*
Contribution to eutrophication marine	kg N eq	9.33E-04	0*	0*	0*	0*	0*	9.33E-04	0*
Contribution to eutrophication, terrestrial	mol N eq	2.92E-02	0*	0*	0*	0*	0*	2.92E-02	0*
Contribution to photochemical ozone formation - human health	kg COVNM eq	2.34E-03	0*	0*	0*	0*	0*	2.34E-03	0*
Contribution to resource use, minerals and metals	kg Sb eq	6.53E-06	0*	0*	0*	0*	0*	6.53E-06	0*
Contribution to resource use, fossils	MJ	7.63E+01	0*	0*	0*	0*	0*	7.63E+01	0*
Contribution to water use	m3 eq	8.06E-01	0*	0*	0*	0*	0*	8.06E-01	0*

Inventory flows Indicators		Connected dimmer, Elko RS16, Smart, 200 W, universal, multiwire, LED, rotary push type, polar white - EKO07281							
Inventory flows	**Unit**	**[B1 - B7] - Use**	**[B1]**	**[B2]**	**[B3]**	**[B4]**	**[B5]**	**[B6]**	**[B7]**
Contribution to use of renewable primary energy excluding renewable primary energy used as raw material	MJ	1.31E+02	0*	0*	0*	0*	0*	1.31E+02	0*
Contribution to use of renewable primary energy resources used as raw material	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to total use of renewable primary energy resources	MJ	1.31E+02	0*	0*	0*	0*	0*	1.31E+02	0*
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	7.63E+01	0*	0*	0*	0*	0*	7.63E+01	0*
Contribution to use of non renewable primary energy resources used as raw material	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to total use of non-renewable primary energy resources	MJ	7.63E+01	0*	0*	0*	0*	0*	7.63E+01	0*
Contribution to use of secondary material	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to use of renewable secondary fuels	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to use of non renewable secondary fuels	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to net use of freshwater	m³	1.89E-02	0*	0*	0*	0*	0*	1.89E-02	0*
Contribution to hazardous waste disposed	kg	2.32E-01	0*	0*	0*	0*	0*	2.32E-01	0*
Contribution to non hazardous waste disposed	kg	1.51E+00	0*	0*	0*	0*	0*	1.51E+00	0*
Contribution to radioactive waste disposed	kg	6.06E-05	0*	0*	0*	0*	0*	6.06E-05	0*
Contribution to components for reuse	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to materials for recycling	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to materials for energy recovery	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to exported energy	MJ	0*	0*	0*	0*	0*	0*	0*	0*

** represents less than 0.01% of the total life cycle of the reference flow*

Life cycle assessment performed with EIME version v6.2.2, database version 2024-01 in compliance with ISO14044, EF3.1 method is applied, for biogenic carbon storage, assessment methodology -1/1 is used

According to this environmental analysis, proportionality rules may be used to evaluate the impacts of other products of this range, ratios to apply can be provided upon request

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.

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		Supplemented by	PSR-0005-ed3.1-EN-2023 12 08
Verifier accreditation N°	VH48	*Information and reference documents*	www.pep-ecopassport.org
Date of issue	12-2024	*Validity period*	5 years
Independent verification of the declaration and data, in compliance with ISO 14025 : 2006			
Internal	External X		
The PCR review was conducted by a panel of experts chaired by Julie Orgelet (DDemain)			
PEPs are compliant with XP C08-100-1:2016 and EN 50693:2019 or NF E38-500 :2022			
The components of the present PEP may not be compared with components from any other program.			
Document complies with ISO 14025:2006 "Environmental labels and declarations. Type III environmental declarations"			

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