

Product Environmental Profile

CONNECTED DIMMER (ZigBee)





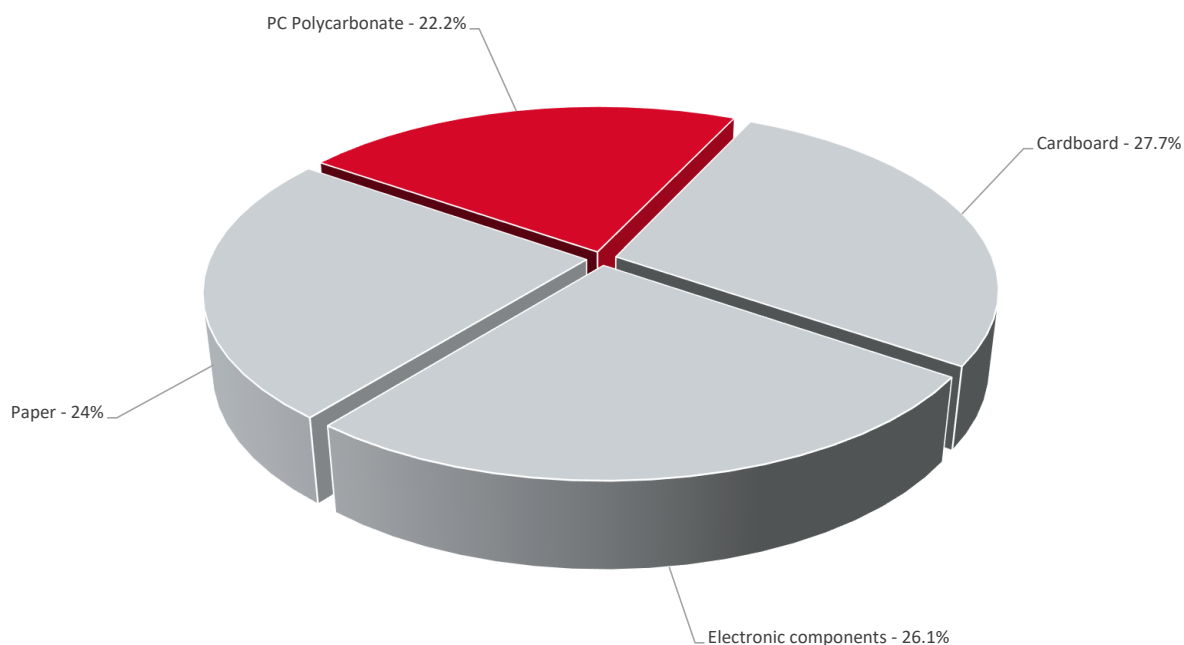
General information

Reference product	CONNECTED DIMMER (ZigBee) - EKO20002
Description of the product	The Elko SMARTDIM LED puck Multiwire is used to switch and dim the ohmic or capacitive loads.
Description of the range	Single product
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:	Max ohmic loads power – 300W U - 230V AC IP - IP20 degree of protection against the ingress of solid foreign objects and water with harmful effects in accordance with the standard IEC 60529



Constituent materials

Reference product mass	52 g	including the product, its packaging and additional elements and accessories
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Plastics	22,2%
Others	77,8%
Metals	0%



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:	0%	The recyclability rate was calculated from the recycling rates of each material making up the product with the exception of data using the ESR database. For materials or components using the ESR database or the absence of data the conservative hypothesis "0% recyclability" was used.
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Environmental impacts

Reference service life time	10 years			
Product category	Other equipments - Active product			
Installation elements	No special components needed			
Use scenario	The product is in active mode 30% of the time with a power use of 0.21W (with 0.29W as power dissipation with 30W load - corresponding to 10% load rate), and in stand-by mode 70% of the time with a power use of 0.21W, for 10 years. The embedded connected feature of the "Connected dimmer" is already included in respective active and stand by power consumptions.			
Time representativeness	The collected data are representative of the year 2023			
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 représentaive of the actual type of technologies used to make the product.			
Geographical representativeness	Europe			
Energy model used	[A1 - A3]	[A5]	[B6]	[C1 - C4]
	Electricity Mix; High voltage; 2018; Germany, DE	Electricity Mix; High voltage; 2018; Norway, NO	Electricity Mix; High voltage; 2018; Norway, NO	Electricity Mix; High voltage; 2018; Norway, NO

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 (ZigBee) - EKO20002						
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	2,50E+00	1,67E+00	8,02E-02	2,99E-02	6,43E-01	7,77E-02	-1,46E-02
Contribution to climate change-fossil	kg CO2 eq	2,48E+00	1,65E+00	8,02E-02	2,85E-02	6,42E-01	7,77E-02	-1,30E-02
Contribution to climate change-biogenic	kg CO2 eq	1,92E-02	1,71E-02	0*	1,42E-03	6,52E-04	0*	-1,60E-03
Contribution to climate change-land use and land use change	kg CO2 eq	1,86E-05	1,86E-05	0*	0*	0*	0*	0,00E+00
Contribution to ozone depletion	kg CFC-11 eq	6,23E-07	5,51E-07	7,04E-08	3,87E-10	1,46E-09	6,38E-11	-4,01E-10
Contribution to acidification	mol H+ eq	8,36E-03	7,17E-03	3,29E-04	8,75E-05	7,26E-04	5,14E-05	-6,89E-05
Contribution to eutrophication, freshwater	kg (PO4) ³⁻ eq	8,42E-06	7,37E-06	9,34E-09	6,85E-07	1,75E-08	3,30E-07	-2,04E-07
Contribution to eutrophication marine	kg N eq	1,35E-03	9,89E-04	1,50E-04	3,81E-05	1,44E-04	2,48E-05	-2,09E-05
Contribution to eutrophication, terrestrial	mol N eq	1,39E-02	1,01E-02	1,62E-03	2,65E-04	1,66E-03	2,59E-04	-1,73E-04
Contribution to photochemical ozone formation - human health	kg COVNM eq	4,44E-03	3,32E-03	5,42E-04	6,07E-05	4,52E-04	6,25E-05	-4,46E-05
Contribution to resource use, minerals and metals	kg Sb eq	7,24E-04	7,24E-04	0*	0*	3,10E-07	0*	-1,38E-09
Contribution to resource use, fossils	MJ	3,52E+01	3,04E+01	9,93E-01	2,96E-01	3,47E+00	9,47E-02	-1,57E-01
Contribution to water use	m3 eq	9,34E-01	9,02E-01	4,05E-03	2,31E-03	2,28E-02	3,27E-03	-3,23E-03

Inventory flows Indicators		CONNECTED DIMMER (ZigBee) - EKO20002						
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	8,95E+01	1,11E+00	0*	3,88E-02	8,84E+01	0*	4,36E-02
Contribution to use of renewable primary energy resources used as raw material	MJ	2,92E-01	2,92E-01	0*	0*	0*	0*	-1,89E-01
Contribution to total use of renewable primary energy resources	MJ	8,98E+01	1,41E+00	0*	3,88E-02	8,84E+01	0*	-1,46E-01
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	3,47E+01	2,98E+01	9,93E-01	2,96E-01	3,47E+00	9,47E-02	-1,57E-01
Contribution to use of non renewable primary energy resources used as raw material	MJ	5,31E-01	5,31E-01	0*	0*	0*	0*	0,00E+00

Contribution to total use of non-renewable primary energy resources	MJ	3,52E+01	3,04E+01	9,93E-01	2,96E-01	3,47E+00	9,47E-02	-1,57E-01
Contribution to use of secondary material	kg	1,43E-02	1,43E-02	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	m³	2,20E-02	2,12E-02	9,42E-05	5,38E-05	5,30E-04	7,61E-05	-7,53E-05
Contribution to hazardous waste disposed	kg	1,55E+01	1,55E+01	0*	0*	3,67E-03	1,41E-02	-3,94E-04
Contribution to non hazardous waste disposed	kg	1,04E+00	8,12E-01	0*	1,28E-02	2,04E-01	1,30E-02	-7,84E-03
Contribution to radioactive waste disposed	kg	5,71E-03	5,68E-03	1,59E-05	1,58E-06	1,47E-05	0*	-3,59E-06
Contribution to components for reuse	kg	0,00E+00	0*	0*	0*	0*	0*	0,00E+00
Contribution to materials for recycling	kg	2,57E-07	2,57E-07	0*	0*	0*	0*	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	1,22E-03	9,54E-07	0*	1,22E-03	0*	0*	0,00E+00

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

Digital service-related impacts of the “Connected Dimmer” are not assessed for the telecommunication networks and computer centers, as respective contributions.
As “Connected dimmer” terminal only, the corresponding digital service-related impacts are fully included (from Manufacturing to End of Life) in the above full set of environmental impact indicators.

Contribution to biogenic carbon content of the product	kg de C	0,00E+00
Contribution to biogenic carbon content of the associated packaging	kg de C	9,11E-03

Mandatory Indicators		CONNECTED DIMMER (ZigBee) - EKO20002							
Impact indicators	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to climate change	kg CO2 eq	6,43E-01	0*	0*	0*	0*	0*	6,43E-01	0*
Contribution to climate change-fossil	kg CO2 eq	6,42E-01	0*	0*	0*	0*	0*	6,42E-01	0*
Contribution to climate change-biogenic	kg CO2 eq	6,52E-04	0*	0*	0*	0*	0*	6,52E-04	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	1,46E-09	0*	0*	0*	0*	0*	1,46E-09	0*
Contribution to acidification	mol H+ eq	7,26E-04	0*	0*	0*	0*	0*	7,26E-04	0*
Contribution to eutrophication, freshwater	kg (PO4)³⁻ eq	1,75E-08	0*	0*	0*	0*	0*	1,75E-08	0*
Contribution to eutrophication marine	kg N eq	1,44E-04	0*	0*	0*	0*	0*	1,44E-04	0*
Contribution to eutrophication, terrestrial	mol N eq	1,66E-03	0*	0*	0*	0*	0*	1,66E-03	0*
Contribution to photochemical ozone formation - human health	kg COVNM eq	4,52E-04	0*	0*	0*	0*	0*	4,52E-04	0*
Contribution to resource use, minerals and metals	kg Sb eq	3,10E-07	0*	0*	0*	0*	0*	3,10E-07	0*
Contribution to resource use, fossils	MJ	3,47E+00	0*	0*	0*	0*	0*	3,47E+00	0*
Contribution to water use	m3 eq	2,28E-02	0*	0*	0*	0*	0*	2,28E-02	0*

Inventory flows Indicators		CONNECTED DIMMER (ZigBee) - EKO20002							
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	8,84E+01	0*	0*	0*	0*	0*	8,84E+01	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	8,84E+01	0*	0*	0*	0*	0*	8,84E+01	0*
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	3,47E+00	0*	0*	0*	0*	0*	3,47E+00	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	3,47E+00	0*	0*	0*	0*	0*	3,47E+00	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	5,30E-04	0*	0*	0*	0*	0*	5,30E-04	0*
Contribution to hazardous waste disposed	kg	3,67E-03	0*	0*	0*	0*	0*	3,67E-03	0*
Contribution to non hazardous waste disposed	kg	2,04E-01	0*	0*	0*	0*	0*	2,04E-01	0*
Contribution to radioactive waste disposed	kg	1,47E-05	0*	0*	0*	0*	0*	1,47E-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 v6.1, database version 2023-02 in compliance with ISO14044, EF 3.0 method is applied, for biogenic carbon storage, assessment methodology 0/0 is used

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.

Registration number :	SCHN-01214-V01.01-EN	Drafting rules	PCR-4-ed4-EN-2021 09 06
Verifier accreditation N°	VH48	Supplemented by	PSR-0005-ed3.1-EN-2023 12 08
Date of issue	06/2024	Information and reference documents	www.pep-ecopassport.org
		Validity period	5 years
Independent verification of the declaration and data, in compliance with ISO 14021 : 2016			
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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