PRODUCT ENVIRONMENTAL PROFILE



thePiccola S360-100 DE WH

Holder of the declaration

Theben AG :

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PEP directed by
Qweeko
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References covered

1060200; 2090200 ; 2099200 ; 1040200

Methodology

This PEP has been produced in compliance with the PCR version PCR-ed4-FR-2021 09 06 and the PSR version PSR- 0005-ed3.1-FR-2023 12 08 of the PEP ecopassport program. For more information, visit the program website www.pep-ecopassport.org

Reference product

Identification of the reference product:
1060200

Product category (PSR-0005- ed3.1- FR-2023 12 08):
Family: Electrical switchgear and control gear solutions
Sub-family: Other equipment

Functional Unit

Detect a 360 ° presence to switch on the lights, for 10 years

Declared Unit

Detect a 360 ° presence to switch on the lights, for 10 years

UD = UF

Technical characteristics

Product service life	10 year(s)
Rate of uptime in on mode	20 %
Rate of uptime in standby mode	80 %
Detector detection angle	360 °
Power consumption in on mode	0.5 W
Power consumption in standby mode	0.5 W
Detector function	Light switch

Materials and substances

All useful measures have been taken to ensure that the materials used in the composition of the product do not contain substances prohibited by the regulations in force when it was placed on the market. The mass of the reference product is 0.0965 kg. The mass of the product packaging is 0.05576 kg.

The constituent materials are:

Plastics	g	%	Metals	g	%	Others	g	%
PC	36.13	23.7	Steel	3.91	2.6	Cardboard	39.0	25.6
PVC	13.53	8.9	Copper	3.71	2.4	Paper	18.1	11.9
Nylon	1.61	1.1				Relay	13.72	9.0
HDPE	0.69	0.5				PCB	9.2	6.0
PA6T	0.65	0.4				Electrolytic capacitor	3.2	2.1
Others	0.6	0.4				Others	8.23	5.4
Total	53.21	35	**Total**	7.62	5	**Total**	91.45	60
Total mass of reference product: 0.15 kg								

The masses indicated correspond to the masses modeled within the framework of the PEP and may present slight variations with the masses indicated in the technical documentation of the products, due to the assumptions made for the study. These masses do not include the packaging materials of the raw materials, which are modeled according to the recommendations of the PCR-ed4-FR-2021 09 06.

Additional environmental information

Manufacturing	Manufactured in China. The following were considered: raw materials, transport to the production site, manufacture of components and parts, assembly, packaging, and packaging of raw materials (5% of the mass of reference equipment (equipment + packaging) and treatment of waste generated.
Distribution	The main market is Europe. Consequently, the current model includes intercontinental transport in accordance with the PEP-PCR-ed4-FR-2021 09 06 rules: Truck: 3,500 km.
Installation	In this step: The transport and disposal of the product packaging was taken into consideration, in accordance with the scenarios specified in PSR-0005-ed3.1-EN-2023 12 08.
Use	In this phase, the following was taken into consideration: Total electricity consumption (Module B6).
End of life	The end-of-life scenarios for this product were calculated using the Ecosystem database.

Environmental impacts

The environmental impact assessment covers the following stages of the product life cycle: Manufacturing (A1-A3), Distribution (A4), Installation (A5), Use (B1-B7), End of life (C1-C4) and Benefits and burdens across system boundaries (D).

The calculations were carried out with the OpenLCA software version 2.0.2 associated with the EcoInvent database version 3.91 and the Ecosystem database.

Indicator set : Indicators for PEF EF 3.1 (Compliance: PEP ed.4, EN15804+A2) v2.0
PEP representative of the products covered, installed and marketed in: Europe

Energy models considered for each phase:

Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use (B1-B7)	End of life (C1-C4)
China	Europe	Europe	Europe	Europe

Environmental impact of the reference product calculated for the functional unit

This environmental declaration has been developed considering the following functional unit: Detect a 360 ° presence to switch on the lights, for 10 years

Mandatory environmental impact indicators

Indicators	Unit	A1-A3	A4	A5	B1-B7*	C1-C4	Total (excluding D)	D
Environment: Global warming potential (total) | GWPT	kg CO2 eq	5,37E+00	1,00E-01	1,37E-02	1,61E+01	1,94E-01	2,18E+01	-5.06E-02
Environment: Global warming potential (fossil) | GWPF	kg CO2 eq	5,43E+00	9,99E-02	4,48E-03	1,55E+01	1,94E-01	2,12E+01	-5.81E-02
Environment:Global warming potential (biogenic) | GWPB	kg CO2 eq	-7,96E-02	8,74E-05	9,19E-03	5,33E-01	-8,78E-05	4,63E-01	7.53E-03
Environment: Global warming potential (Land Use) | GWPL	kg CO2 eq	1,17E-02	4,85E-05	1,68E-06	3,87E-02	0,00E+00	5,05E-02	0
Environment:Ozone depletion potential | ODP	kg CFC-11 eq	2,57E-07	2,17E-09	7,43E-11	2,95E-07	9,16E-09	5,63E-07	-4.34E-09
Environment: Acidification potential | AP	mol H+ eq	5,02E-02	3,26E-04	1,99E-05	8,90E-02	1,54E-03	1,41E-01	-4.33E-03
Environment: Eutrophication potential (freshwater) | EPF	kg P eq	6,79E-03	6,99E-06	4,83E-07	1,47E-02	2,98E-09	2,15E-02	-5.87E-25
Environment: Eutrophication potential (marine) | EPM	kg N eq	8,06E-03	1,12E-04	8,36E-06	1,44E-02	1,18E-06	2,26E-02	-5.42E-06
Environment: Eutrophication potential (terrestrial) | EPT	mol N eq	8,73E-02	1,18E-03	7,98E-05	1,30E-01	1,61E-04	2,19E-01	-7.90E-04
Environment: Photochemical ozone creation potential | POCP	kg NMVOC eq	2,84E-02	4,87E-04	2,96E-05	4,18E-02	1,18E-04	7,08E-02	-3.42E-04
Environment: Abiotic depletion potential (elements) | ADPE	kg Sb eq	1,49E-03	3,28E-07	1,71E-08	1,89E-04	3,13E-09	1,68E-03	-4.18E-05
Environment: Abiotic depletion potential (fossils) | ADPF	MJ (net calorific)	7,28E+01	1,43E+00	5,21E-02	3,59E+02	0	4,33E+02	0

Indicators	Unit	A1-A3	A4	A5	B1-B7*	C1-C4	Total (excluding D)	D
Environment: Water deprivation potential | WDP	m3 world eq	2,14E+00	7,00E-03	7,36E-04	8,91E+00	0,00E+00	1,11E+01	0

* The detailed results of the module B can be found in the tables located at this end of this section.

Optional environmental impact indicators

Indicators	Unit	A1-A3	A4	A5	B1-B7*	C1-C4	Total (Excluding D)	D
Environment: Particulate matter formation | PMF	disease incidence	3,43E-07	7,95E-09	4,14E-10	3,26E-07	5,73E-09	6,83E-07	-9.26E-09
Environment: Ionising radiation (human health) | IRH	kBq U235 eq	5,93E-01	1,90E-03	1,52E-04	9,94E+00	4,45E-03	1,05E+01	-1.88E-03
Environment: Ecotoxicity potential (freshwater) | ETPF	CTUe	1,36E+02	6,99E-01	3,59E-02	5,93E+01	1,76E-01	1,96E+02	-6.97E-01
Environment: Human toxicity (carcinogenic) | HTC	CTUh	5,88E-09	4,55E-11	3,25E-12	7,76E-09	9,55E-11	1,38E-08	-4.31E-10
Environment: Human toxicity (non-carcinogenic) | HTNC	CTUh	2,37E-07	1,00E-09	5,35E-11	3,11E-07	1,13E-08	5,60E-07	-4.25E-08
Environment: Land use and land use change | LULUC	dimensionless	3,68E+01	8,43E-01	2,23E-02	6,87E+01	6,76E-02	1,06E+02	-3.71E-01

* The detailed results of module B can be found in the tables located at this end of this section.

Resource utilization indicators

Indicators	Unit	A1-A3	A4	A5	B1-B7*	C1-C4	Total (Excluding D)	D
Primary energy: Renewable (energy use) | PERE	MJ (PERE)	9,81E+00	2,20E-02	1,52E-03	7,91E+01	0	8,89E+01	0
Primary energy: Renewable (material use) | PERM	MJ (PERM)	0	0	0	0	0	0	0

Indicators	Unit	A1-A3	A4	A5	B1-B7*	C1-C4	Total (excluding D)	D
Primary energy: Renewable (total) | PERT	MJ (PERT)	9,81E+00	2,20E-02	1,52E-03	7,91E+01	0	8,89E+01	0
Primary energy: Non-renewable (energy use) | PENRE	MJ (PENRE)	7,05E+01	1,30E+00	4,79E-02	3,54E+02	2,48E-01	4,26E+02	-6.02E-02
Primary energy: Non-renewable (material use) | PENRM	MJ (PENRM)	2,32E+00	1,24E-01	4,12E-03	5,16E+00	0	7,61E+00	0
Primary energy: Non-renewable (total) | PENRT	MJ (PENRT)	7,28E+01	1,43E+00	5,21E-02	3,59E+02	2,48E-01	4,34E+02	-6.02E-02
Resource: Secondary materials | SM	kg (SM)	2,26E-01	1,54E-03	4,78E-02	4,62E+00	0	4,90E+00	0
Resource: Renewable secondary fuels | RSF	MJ (RSF)	7,44E-02	4,17E-04	6,17E-05	2,68E+00	0	2,75E+00	0
Resource: Non-renewable secondary fuels | NRSF	MJ (NRSF)	1,98E-01	8,19E-04	5,18E-05	2,66E+00	0	2,86E+00	0
Resource: Net use of fresh water | FW	m3 (FW)	4,69E-02	1,70E-04	1,65E-05	2,85E-01	6,57E-01	9,89E-01	-7.65E-01

* The detailed results of module B can be found in the tables located at this end of this section.

Waste category indicators

Indicators	Unit	A1-A3	A4	A5	B1-B7*	C1-C4	Total (excluding D)	D
Hazardous waste disposed | HWD	kg (HWD)	3,18E-01	1,32E-03	2,02E-04	3,51E-01	-2,85E-01	3,86E-01	-1.53E-02
Non-hazardous waste disposed | NHWD	kg (NHWD)	2,39E-01	6,79E-02	6,87E-03	1,09E+00	-2,85E-01	1,12E+00	-1.59E-02
Radioactive waste disposed | RWD	kg (RWD)	1,46E-04	4,60E-07	3,82E-08	2,55E-03	-5,88E-06	2,69E-03	-1.91E-06

* The detailed results of module B can be found in the tables located at this end of this section.

Output Flow Indicators

Indicators	Unit	A1-A3	A4	A5	B1-B7*	C1-C4	Total (Excluding D)	D
Components for reuse	kg (CRU)	2,59E-22	0	0	0	0	2,59E-22	0
Materials for recycling	kg (MFR)	5,75E-01	1,40E-03	1,41E-04	4,49E+00	0	5,07E+00	0
Materials for energy recovery	kg (MER)	0	0	0	0	0	0	0
Exported energy (electrical)	MJ (EEE)	0	0	0	0	0	0	0
Exported energy (thermal)	MJ (EET)	0	0	0	0	0	0	0

*The details of Module B are available in the dedicated tables at the end of this section

Biogenic Carbon Inventory Flow

Indicators	Unit	Total
Biogenic carbon content of the product	kg of C	0
Biogenic carbon content of associated packaging	kg of C	1,73E-02

Indicators calculated based on the following values:

Wood : 39.5% (EN16485), Paper : 37.8% (APSESA/RECORD) and Cardboard : 28% (ADEME)

Module B details

Indicators	Unit	B1	B2	B3	B4	B5	B6	B7	Total module B
Environment: Global warming potential (total) | GWPT	kg CO2 eq	0	0	0	0	0	3.92E+00	0	3.92E+00

Indicators	Unit	B1	B2	B3	B4	B5	B6	B7	Total module B
Environment: Global warming potential (fossil) | GWPF	kg CO2 eq	0	0	0	0	0	1,61E+01	0	1,61E+01
Environment: Global warming potential (biogenic) | GWPB	kg CO2 eq	0	0	0	0	0	1,55E+01	0	1,55E+01
Environment: Global warming potential (land use) | GWPL	kg CO2 eq	0	0	0	0	0	5,33E-01	0	5,33E-01
Environment: Ozone depletion potential | ODP	kg CFC-11 eq	0	0	0	0	0	3,87E-02	0	3,87E-02
Environment: Acidification potential | AP	mol H+ eq	0	0	0	0	0	2,95E-07	0	2,95E-07
Environment: Eutrophication potential (freshwater) | EPF	kg P eq	0	0	0	0	0	8,90E-02	0	8,90E-02
Environment: Eutrophication potential (marine) | EPM	kg N eq	0	0	0	0	0	1,47E-02	0	1,47E-02
Environment: Eutrophication potential (terrestrial) | EPT	mol N eq	0	0	0	0	0	1,44E-02	0	1,44E-02
Environment: Photochemical ozone creation potential | POCP	kg NMVOC eq	0	0	0	0	0	1,30E-01	0	1,30E-01
Environment: Abiotic depletion potential (elements) | ADPE	kg Sb eq	0	0	0	0	0	4,18E-02	0	4,18E-02
Environment: Abiotic depletion potential (fossils) | ADPF	MJ (net calorific)	0	0	0	0	0	1,89E-04	0	1,89E-04
Environment: Water deprivation potential | WDP	m3 world eq	0	0	0	0	0	3,59E+02	0	3,59E+02
Environment: Particulate matter formation | PMF	disease incidence	0	0	0	0	0	8,91E+00	0	8,91E+00
Environment: Ionising radiation (human health) | IRH	kBq U235 eq	0	0	0	0	0	3,26E-07	0	3,26E-07
Environment: Ecotoxicity potential (freshwater) | ETPF	CTUe	0	0	0	0	0	9,94E+00	0	9,94E+00
Environment: Human toxicity (carcinogenic) | HTC	CTUh	0	0	0	0	0	5,93E+01	0	5,93E+01
Environment: Human toxicity (non-carcinogenic) | HTNC	CTUh	0	0	0	0	0	7,76E-09	0	7,76E-09
Environment: Land use and land use change | LULUC	dimensionless	0	0	0	0	0	3,11E-07	0	3,11E-07
Primary energy: Renewable (energy use) | PERE	MJ (PERE)	0	0	0	0	0	6,87E+01	0	6,87E+01
Primary energy: Renewable (material use) | PERM	MJ (PERM)	0	0	0	0	0	7,91E+01	0	7,91E+01
Primary energy: Renewable (total) | PERT	MJ (PERT)	0	0	0	0	0	0	0	0
Primary energy: Non-renewable (energy use) | PENRE	MJ (PENRE)	0	0	0	0	0	7,91E+01	0	7,91E+01

Indicators	Unit	B1	B2	B3	B4	B5	B6	B7	Total module B
Primary energy: Non-renewable (material use) | PENRM	MJ (PENRM)	0	0	0	0	0	5,16E+00	0	5,16E+00
Primary energy: Non-renewable (total) | PENRT	MJ (PENRT)	0	0	0	0	0	3,59E+02	0	3,59E+02
Resource: Secondry materials | SM	kg (SM)	0	0	0	0	0	4,62E+00	0	4,62E+00
Resource: Renewable secondary fuels | RSF	MJ (RSF)	0	0	0	0	0	2,68E+00	0	2,68E+00
Resource: Non-renewable secondary fuels | NRSF	MJ (NRSF)	0	0	0	0	0	2,66E+00	0	2,66E+00
Resource: Net use of fresh water | FW	m3 (FW)	0	0	0	0	0	2,85E-01	0	2,85E-01
Hazardous waste disposed | HWD	kg (HWD)	0	0	0	0	0	3,51E-01	0	3,51E-01
Non-hazardous waste disposed | NHWD	kg (NHWD)	0	0	0	0	0	1,09E+00	0	1,09E+00
Radioactive waste disposed | RWD	kg (RWD)	0	0	0	0	0	2,55E-03	0	2,55E-03
Output: Components for reuse | CRU	kg (CRU)	0	0	0	0	0	0	0	0
Output: Materials for recycling | MFR	kg (MFR)	0	0	0	0	0	4,49E+00	0	4,49E+00
Output: Materials for energy recovery | MER	kg (MER)	0	0	0	0	0	0	0	0
Output: Exported energy (electrical) | EEE	MJ (EEE)	0	0	0	0	0	0	0	0
Output: Exported energy (thermal) | EET	MJ (EET)	0	0	0	0	0	0	0	0

Homogeneous environmental family and extrapolated factors

Covered references

	Product designation	Commercial reference
PICCOLA	thePiccola S360-100 DE WH	1060200
	thePiccola P360-100 DE WH	2090200
	thePiccola P360 KNX DE WH	2099200
LUXA	LUXA 104 S360-200-24 DE-UP	1040200

Extrapolation factors for covered references

To calculate the environmental impacts at the declared unit level for products covered by this PEP, multiply the environmental impacts of the reference product by the extrapolation factor for each phase

The extrapolation factors were calculated according to the following rules:

- Manufacturing, distribution, end-of-life, and module D phases: based on the weight of the products and packaging
- Use phase: B6: ratio between the consumption of the covered product and that of the reference product

Characteristics of the references covered

Reference	Product weight (g)	Packaging weight (g)	Energy consumption operating (W)	Energy consumption standy (W)	Duration operating (%)	Duration standby (%)
Reference product						
1060200	94,5	57,1	0,5	0,5	20	80
Covered products						
2090200	93	53	0,4	0,4	20	80
2099200	24	56	0,2	0,2	20	80
1040200	177,5	88,5	0,5	0,5	20	80

Extrapolation factors for covered references

Reference	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use (B1-B7)	End of life (C1-C4)	Module D
Reference product						
1060200	1	1	1	1	1	1
Covered products						
2090200	0,98	0,93	0,96	0,93	0,80	0,96
2099200	0,25	0,98	0,53	0,98	0,40	0,53
1040200	1,88	1,55	1,75	1,55	1	1,75

Registration number: THEB-00015-V01.01-EN	Drafting rules: "PCR-ed4-EN-2021 09 06 Supplemented by "PSR-0005- ed3.1- FR-2023 12 08"
Verifier accreditation number: VH37	Information and reference documents: www.pep-ecopassport.org
Edition date: 09-2025	Validity period: 5 years

Independent verification of the declaration and data in compliance with ISO 14025: 2006

Internal ■

External □

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