Product Environmental Profile

Derivation boxes with or without cable outlet - PICO - IP55-IP56

Company information

Bocchiotti
Via Pian Masino 109
16011 ARENZANO
www.hagergroup.com

A question concerning the Product Environmental Profile: infopep@hager.com

References covered

Derivation boxes PICO : B04841, B04842, B04843, B04844, B04845, B04846, B04847, B04848, B04849, B04850, B04851, B04852, B04853, B04854, B04855, B04856, B04857, B04858, B04831, B04832, B04833, B04834, B04835, B04836, B04837, B04838, B07911, B07912, B07913, B07914, B07915, B07916, B07917, B07918, B07921, B07922, B07923, B07924, B07925, B07926, B07927, B07928, B07929, B07930, B07931, B07932, B05504, B05505, B05506, B05507, B05508, B05509, B05510, B05604, B05605, B05606, B05607, B05608, B05609, B05610, B05614, B05615, B05619, B05620, B05621, B05611, B05612, B05613
Following accessories are also covered : B04859, B04860, B04861, B05151, B05152, B05153, B05154, B04862, B04863, B04864, B04865, B04866

Methodology

PEP has been performed according to the PCR version PEP-PCR-ed4-2021 09 06 and PSR version PSR-0005-ed3.1-2023 12 08 issued by the PEP ecopassport program.
For further information, please see the website of the program www.pep-ecopassport.org

Reference product

Reference product identification

Derivation box without cable outlet B04841 - dimensions 100X100X50 - IP56

Use scenario based on :

PSR product Category : PSR-0005-ed3.1-2023 12 08

Unequipped enclosures and cabinets - junction boxes

Functional unit

Protect people from direct contact with live active parts and ensure the grouping of control, command and protection devices in a single enclosure or cabinet having the following dimensions 100x100x50, while protecting them against mechanical impacts (IK07) and the penetration of solid objects and liquids (IP56), according to the appropriate use scenario, and for the reference service life of the product of 20 years.

The functional unit is based on the use scenario recommended by the PCR for the category of the reference product.

Materials and substances

All useful measures have been adopted to ensure that the materials used in the composition of the product do not contain any substances banned by the legislation in force at the time of marketing.

Plastics			Metals			Others		
	g	%		g	%		g	%
ABS	97.00	73.8%	Stainless steel	6.00	4.6%	Cardboard	13.76	10.5%
SBR	4.19	3.2%	Silicon	0.07	<0.1%	Wood	3.13	2.4%
PS	3.00	2.3%				Paper	0.85	0.6%
PE-LD	3.33	2.5%				Other	0.10	<0.1%
Total mass of reference product with raw material packaging :			**131.42 g**					

Total mass of reference product (Product + packaging)	**125.162 g**

System Boundaries

The environmental information included in the PEP covers all the stages of the life cycle, from "cradle to grave".

Manufacturing			Distribution	Installation	Use							End of life				Module D
Raw material extraction and processing	Transport to the manufacturer	Manufacturing	Distribution to the place of operation	Installation on the place of operation	Use or application of the product installed	Maintenance	Repair	Replacement	Restoration	Energy requirements during the use stage	Water requirements during the use stage	Deinstallation	Transport to the waste treatment site	Treatment of waste in view of its reuse, recovery and/or recycling	Disposal	Benefits and loads beyond the system boundaries
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Life cycle stages																

Manufacturing

These products are manufactured by a site that has received an environmental certification ISO 14001.

This phase takes into account raw materials, manufacturing processes, production offcuts and their end-of-life treatment, upstream transport of materials and sub-assemblies to the manufacturing site, and transport from the manufacturing site to the final logistics platform.

Distribution

The packaging has been designed in accordance with current regulations. In particular, the European directive 94/62/CE relative to packaging and packaging waste.

The used packaging is 100% recyclable or recoverable.
Packaging and logistic flows are continuously improved in order to reduce their impact.

This phase taken into account the transport of the finished product, including packaging, to its place of use.

Installation

Installation processes

The processes to install the product are not considered in this study because of their weak impact compared to the other life cycles steps.

This phase only take into account the impact of the the packaging waste treatment is taken into account.

Installation elements (non delivered with the product)

Elements non delivered with the product and needed to install the product are not considered.

Use

Power loss / load dependent			
Active mode		Inactive mode	
Watt	% of time	Watt	% of time
0	0%	0	100%

Power consumption / not load dependent					
Active Sleep phase		Passive Sleep phase		Turn off phase	
Watt	% of time	Watt	% of time	Watt	% of time
0	0%	0	0%	0	100%

For the considered scenario, the product has no energy consumption.

Energy model of the use phase :
None

Consumables and maintenance :
None

End of life

Considering the complexity of the recycling channels for electric and electronic equipment impacts, we rely mainly on ESR modules (datasets for WEEE product end of life).

The recycling potential of the product is: 67%. The calculation of this rate is based on the method of the IEC/TR 62635.

Environmental impacts

Evaluation of the environmental impact covers the following life cycle stages: raw materials + manufacturing (RMM), distribution (D), installation (I), use (U) and end of life (EoL).

All calculations are done with EIME software version 6.2.4-11 with the database version CODDE® 2024-04 .

Indicators set : Indicators for PEF EF 3.1 (Compliance: PEP ed.4, EN15804+A2) v2.0

PEP representative of the covered products marketed in: Europe

Energy models considered for each phase

Manufacturing A1-A3	Distribution A4	Installation A5	Use B1-B7	End Of Life C1-C4
Italy	Europe	Europe	None	Europe

Environmental impact indicators

Indicators	Unit	Manufacturing A1-A3	Distribution A4	Installation A5	Use B1-B7	End Of Life C1-C4	GLOBAL	Module D
Acidification (PEF-AP)	mole H+ eq	2.14E-03	1.40E-04	3.73E-05	0.00E+00	4.37E-04	2.75E-03	-4.63E-04
Climate change - Total (PEF-GWP)	kg CO2 eq.	6.12E-01	2.21E-02	1.66E-02	0.00E+00	1.00E-01	7.51E-01	-1.94E-01
Climate change-Biogenic (PEF-GWPb)	kg CO2 eq.	-1.21E-02	0.00E+00	3.12E-03	0.00E+00	6.19E-03	-2.82E-03	-3.58E-03
Climate change-Fossil (PEF-GWPf)	kg CO2 eq.	6.24E-01	2.21E-02	1.34E-02	0.00E+00	9.43E-02	7.54E-01	-1.90E-01
Climate change-Land use and land use change (PEF-GWPlu)	kg CO2 eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ecotoxicity, freshwater (PEF-CTUe)	CTUe	5.48E+00	1.45E-02	1.94E-01	0.00E+00	3.01E-01	5.99E+00	-2.04E+00
EF-particulate Matter (PEF-PM)	Incidence of diseases	2.00E-08	1.14E-09	2.23E-10	0.00E+00	4.76E-09	2.61E-08	-4.03E-09
Eutrophication, freshwater (PEF-Epf)	kg P eq.	1.99E-06	8.29E-09	1.84E-07	0.00E+00	6.76E-07	2.86E-06	-5.73E-07
Eutrophication marine (PEF-Epm)	kg N eq.	4.51E-04	6.56E-05	1.78E-05	0.00E+00	9.42E-05	6.29E-04	-1.20E-04
Eutrophication, terrestrial (PEF-Ept)	mole of N eq.	5.30E-03	7.19E-04	1.11E-04	0.00E+00	1.07E-03	7.20E-03	-1.27E-03
Human toxicity, cancer (PEF-CTUh-c)	CTUh	2.81E-09	3.88E-13	1.48E-09	0.00E+00	5.68E-11	4.35E-09	-3.43E-11
Human toxicity, non-cancer (PEF-CTUh-nc)	CTUh	3.43E-09	7.51E-12	4.33E-11	0.00E+00	7.28E-10	4.21E-09	-9.08E-10
Ionising radiation, human health (PEF-IR)	kg Bq U235 eq.	1.59E+00	5.38E-05	2.00E-03	0.00E+00	7.54E-03	1.60E+00	-3.62E-02
Land use (PEF-LU)	No dimension	7.12E-03	0.00E+00	3.58E-05	0.00E+00	1.73E-01	1.80E-01	-2.68E+00
Ozone depletion (PEF-ODP)	kg CFC-11 eq.	1.13E-08	3.39E-11	1.72E-10	0.00E+00	1.27E-08	2.42E-08	-7.99E-11
Photochemical ozone formation - human health (PEF-POCP)	kg of NMVOC eq.	1.39E-03	1.81E-04	2.59E-05	0.00E+00	3.02E-04	1.90E-03	-3.79E-04
Resource use, fossils (PEF-ADPf)	MJ	1.34E+01	3.08E-01	1.27E-01	0.00E+00	1.49E+00	1.53E+01	-4.05E+00
Resource use, minerals and metals (PEF-ADPe)	kg Sb eq	4.26E-06	8.70E-10	3.12E-10	0.00E+00	4.13E-07	4.67E-06	-2.20E-09
Water use (PEF-WU)	m3 eq.	1.46E-01	8.39E-05	1.00E-03	0.00E+00	1.05E+01	1.06E+01	-2.32E+00

Resource use indicators

Indicators	Unit	Manufacturing A1-A3	Distribution A4	Installation A5	Use B1-B7	End Of Life C1-C4	GLOBAL	Module D
Net use of fresh water	m^3	3.41E-03	1.95E-06	2.33E-05	0.00E+00	3.87E-01	3.91E-01	2.13E-02
Total use of primary energy	MJ	1.47E+01	3.09E-01	1.44E-01	0.00E+00	1.57E+00	1.67E+01	-4.51E+00
Total use of non renewable primary energy resources	MJ	1.34E+01	3.08E-01	1.27E-01	0.00E+00	1.49E+00	1.53E+01	-4.05E+00
Total use of renewable primary energy resources	MJ	1.28E+00	4.11E-04	1.70E-02	0.00E+00	8.08E-02	1.38E+00	-4.65E-01
Use of non-renewable primary energy, excluding non renewable primary energy resources used as raw materials	MJ	8.71E+00	3.08E-01	1.27E-01	0.00E+00	1.49E+00	1.06E+01	-4.05E+00
Use of non-renewable primary energy resources as raw materials	MJ	4.70E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.70E+00	0.00E+00
Use of non-renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable primary energy, excluding renewable primary energy resources used as raw materials	kg	9.76E-01	4.11E-04	1.70E-02	0.00E+00	8.08E-02	1.07E+00	-4.65E-01
Use of renewable primary energy resources as raw materials	MJ	3.07E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.07E-01	0.00E+00
Use of renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of secondary materials	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Waste category indicators

Indicators	Unit	Manufacturing A1-A3	Distribution A4	Installation A5	Use B1-B7	End Of Life C1-C4	GLOBAL	Module D
Hazardous waste disposed	kg	3.09E-01	0.00E+00	3.27E-04	0.00E+00	-4.87E-04	3.09E-01	-1.76E-04
Non-hazardous waste disposed	kg	2.03E-01	7.75E-04	5.51E-03	0.00E+00	6.44E-03	2.16E-01	-6.30E-02
Radioactive waste disposed	kg	1.13E-04	5.52E-07	6.60E-07	0.00E+00	1.69E-07	1.14E-04	-4.15E-05

Output flow indicators

Indicators	Unit	Manufacturing A1-A3	Distribution A4	Installation A5	Use B1-B7	End Of Life C1-C4	GLOBAL	Module D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ	1.05E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E-03	0.00E+00
Materials for energy recovery	kg	1.43E-03	0.00E+00	1.10E-03	0.00E+00	0.00E+00	2.53E-03	0.00E+00
Materials for recycling	kg	1.23E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.23E-03	0.00E+00

Biogenic carbon content

Packaging	Unit	Cardboard	Paper	Wood	Sum
Biogenic carbon content (ratio)	%	2.80E+01	3.78E+01	3.95E+01	
Mass	kg	1.38E-02	8.48E-04	3.13E-03	1.77E-02
Biogenic carbon content (declared unit)	kg of C	3.85E-03	3.20E-04	1.24E-03	5.41E-03
Biogenic carbon content (functional unit)	kg of C	3.85E-03	3.20E-04	1.24E-03	5.41E-03
Source		ADEME	APESA/RECORD	EN 16485	

Product	Unit	Cardboard	Paper	Wood	Sum
Mass	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biogenic carbon content (declared unit)	kg of C	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biogenic carbon content (functional unit)	kg of C	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Extrapolation rules

The environmental impact of a system covered by the PEP ecopassport® other than the reference system for which it was drawn up can be calculated by multiplying the values of the environmental indicators by the corresponding factor for each stage of the life cycle and the total life cycle.

References	*B04841**	B04842	B04843	B04844	B04845	B04846	B04847	B04848	B04849	B04850	B04851	B04852	B04853	B04854	B04855	B04856	B04857
Dimensions [mm]	100x100x50	120x80x50	150x110x70	190x140x70	240x190x90	300x220x120	380x300x120	460x380x120	240x190x160	300x220x180	380x300x180	460x380x180	150x110x70	190x140x70	240x190x90	300x220x120	380x300x120
Factor	1.0	1.0	1.7	2.9	5.3	8.0	12.6	17.7	6.4	9.8	14.9	20.4	1.9	3.1	5.6	8.5	13.4

References	B04858	B04831	B04832	B04833	B04834	B04835	B04836	B04837	B04838	B07911	B07912	B07913	B07914	B07915	B07916	B07917	B07918
Dimensions [mm]	460x380x120	100x100x50	120x80x50	150x110x70	190x140x70	240x190x90	300x220x120	380x300x120	460x380x120	100x100x50	120x80x50	150x110x70	190x140x70	240x190x90	300x220x120	380x300x120	460x380x120
Factor	18.8	1.2	1.1	2.0	3.4	5.6	9.0	13.2	19.1	1.2	1.1	2.0	3.4	5.6	9.0	13.2	19.1

References	B07921	B07922	B07923	B07924	B07925	B07926	B07927	B07928	B07929	B07930	B07931	B07932	B05504	B05505	B05506	B05507	B05508
Dimensions [mm]	100x100x50	120x80x50	150x110x70	190x140x70	240x190x90	300x220x120	380x300x120	460x380x120	240x190x160	300x220x180	380x300x180	460x380x180	100x100x50	120x80x50	150x110x70	190x140x70	240x190x90
Factor	1.1	1.0	2.0	2.9	5.3	8.0	12.6	17.7	6.4	9.8	14.9	20.4	1.2	1.3	2.0	3.1	5.9

References	B05509	B05510	B05604	B05605	B05606	B05607	B05608	B05609	B05610	B05614	B05615	B05619	B05620	B05621	B05611	B05612	B05613
Dimensions [mm]	300x220x120	380x300x120	100x100x50	120x80x50	150x110x70	190x140x70	240x190x90	300x220x120	380x300x120	150x110x70	190x140x70	240x190x90	300x220x120	380x300x120	240x190x160	300x220x180	380x300x180
Factor	9.3	13.6	1.0	1.1	1.8	2.7	5.4	8.3	12.5	1.9	2.8	6.1	8.8	13.1	7.0	10.1	16.3

**Reference product*

Verification

Registration N°: HAGE-01241-V01.01-EN	Drafting Rules	PEP-PCR-ed4-2021 09 06
	Supplemented by	PSR-0005-ed3.1-2023 12 08
Verifier accreditation N°: VH35	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 ○		
The PCR review was conducted by a panel of experts chaired by Julie Orgelet (DDemain)		
PEPs are compliant with XP C08-100-1:2016 or EN 50693:2019 The elements of the present PEP cannot be compared with elements from another program.		
Document in compliance with ISO 14025 : 2006 « Environmental labels and declarations. Type III environmental declarations »		

Nota :

The picture has no contractual value.

All numerical values indicated in this document may vary and depend of many factors such as the tolerance related to materials, the usage and environment conditions of the products, installation characteristics ... , real values for a product in a concrete application may therefore change.

The usage time mentioned in this document is an average duration chosen for the need of the calculations. This value cannot be assimilated to the minimum, average or real life time.

The responsibility of the company, issuing this document, can never be engaged if differences would be noticed between the values given by this document and real ones, whatever the causes and/or consequences would be.