Product Environmental Profile

Actassi Pre-equiped fiber panel MTPm

Schneider Electric

Product Environmental Profile - PEP

Product overview

The main purpose of the ACTASSI MTP pre-equiped fiber panels is to make easier, faster and more reliable the deployment in datacenter of optical links supporting 10GBASE-SR protocol and beyond.

This range consists of pre-equiped fiber panel which can manage the connexion of several 12 fiber or 24 fiber MTP trunk cables at the rear, split on 48 LC or SC ports or on 96 LC ports depending on the configuration in one rack unit. Moreover the optical fibers managed by the panel are either OM3, OM4 or OS2.

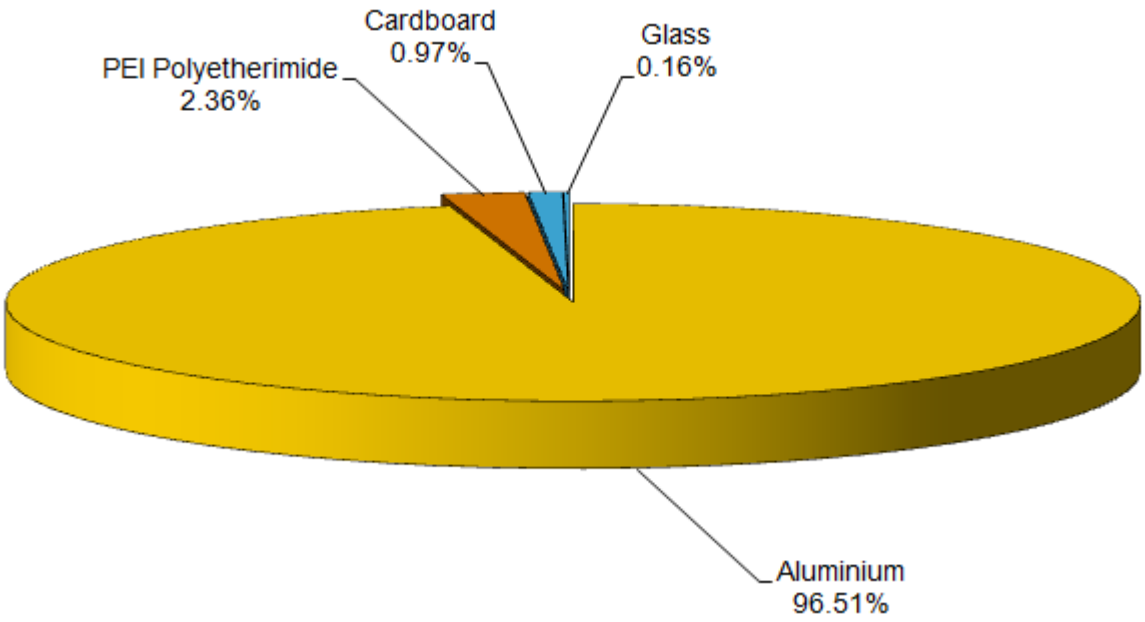
The representative product (ref. VDILP131S5F) used for the analysis is pre-equiped fiber panel 48 LC-4*12 MTPm OM3. It splits the signals coming from four 12 fiber MTP trunk cables on 48 LC ports at the front panel. The kind of optical fiber managed by this product is multimode type 3.

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 2790 g and 3410 g including packaging. It is 3108.5 g for the reference VDILP131S5F.
The constituent materials are distributed as follows:



Substance assessment

Products of this range are designed in conformity with the requirements of the European RoHS Directive 2011/65/EU 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.

Details of ROHS and REACH substances information are available on the Schneider-Electric Green Premium website .
(http://www2.schneider-electric.com/sites/corporate/en/products-services/green-premium/green-premium.page)

Manufacturing

The ACTASSI MTP pre-equiped fiber panels are 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 packaging weight of ACTASSI MTP pre-equiped fiber panels is 30 g. It essentially consists of cardboard.
The product distribution flows have been optimised by setting up local distribution centres close to the market areas.

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Use

The ACTASSI MTP pre-equiped fiber panels do not generate environmental pollution (noise, emissions) requiring special precautionary measures in standard use.
The ACTASSI MTP pre-equiped fiber panels do not require special maintenance operations.

End of life

At end of life, the ACTASSI MTP pre-equiped fiber panels have been optimized to decrease the amount of waste and allow recovery of the product components and materials.
The ACTASSI MTP pre-equiped fiber panels do not need any special end-of-life treatment. According to countries' practices this product can enter the usual end-of-life treatment process.

The recyclability potential of the products has been evaluated using the "ECO DEEE 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 without packaging is: 88.68%.
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 ACTASSI MTP pre-equiped fiber panels
- the product packaging is included
- no special components included.
- the scenario for the Use phase: this product range is included in the category Enclosure (assumed service life is 20 years)
- the geographical representative area for the assessment is European and the electrical power model used for calculation is European 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 ACTASSI MTP pre-equiped fiber panels Ref : VDILP131S5F.					
		S = M + D + I + U + E	M	D	I	U	E
Air Acidification (AA)	**kg H+ eq**	1.35E-03	2.64E-04	1.07E-03	0.0000E+00	0.0000E+00	1.51E-05
Air toxicity (AT)	**m^3**	1.90E+06	3.30E+05	1.57E+06	0.0000E+00	0.0000E+00	22.299
Energy Depletion (ED)	**MJ**	1.38E+02	4.08E+01	9.73E+01	0.0000E+00	0.0000E+00	1.49E-03
Global Warming Potential (GWP)	**kg CO_2 eq.**	9.80E+00	2.00E+00	7.69E+00	0.0000E+00	0.0000E+00	1.18E-01
Hazardous Waste Production (HWP)	**kg**	1.90E-01	1.87E-01	2.84E-03	0.0000E+00	0.0000E+00	4.40E-08
Ozone Depletion Potential (ODP)	**kg CFC-11 eq.**	5.61E-06	1.26E-07	5.40E-06	0.0000E+00	0.0000E+00	8.37E-08
Photochemical Ozone Creation Potential (POCP)	**kg C_2H_4 eq.**	7.67E-03	9.26E-04	6.65E-03	0.0000E+00	0.0000E+00	1.01E-04
Raw Material Depletion (RMD)	**Y-1**	2.50E-16	1.18E-16	1.33E-16	0.0000E+00	0.0000E+00	2.04E-21
Water Depletion (WD)	**dm3**	1.36E+01	4.45E+00	9.16E+00	0.0000E+00	0.0000E+00	1.42E-04
Water Eutrophication (WE)	**kg PO_4^{3-} eq.**	1.53E-04	2.37E-05	1.27E-04	0.0000E+00	0.0000E+00	1.97E-06
Water Toxicity (WT)	**m^3**	1.54E+00	4.33E-01	1.09E+00	0.0000E+00	0.0000E+00	1.48E-02

Life cycle assessment has been performed with the EIME software (Environmental Impact and Management Explorer), version 5 and with its database version 2013-02
The D phase is the life cycle phase which has the greatest impact on the majority of environmental indicators.

System approach

As passive components, the ACTASSI MTP pre-equiped fiber panels don't have an impact on energy consumption. Nevertheless, they help reducing the time of installation on site and their high level of quality makes the optical transmission more optimal. These two arguments improve the final quality of service of the datacenter.
As the products of the range are designed in accordance with the European RoHS Directive 2011/65/EU, 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.
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 achieved with Schneider-Electric TT01 V9 and TT02 V16 procedures in compliance with ISO14040 series standards

PEP in line with PEPecopassport PCR : PEP–PCR–ed 2.1-EN-2012 12 11

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