Product Environmental Profile

Galaxy VM

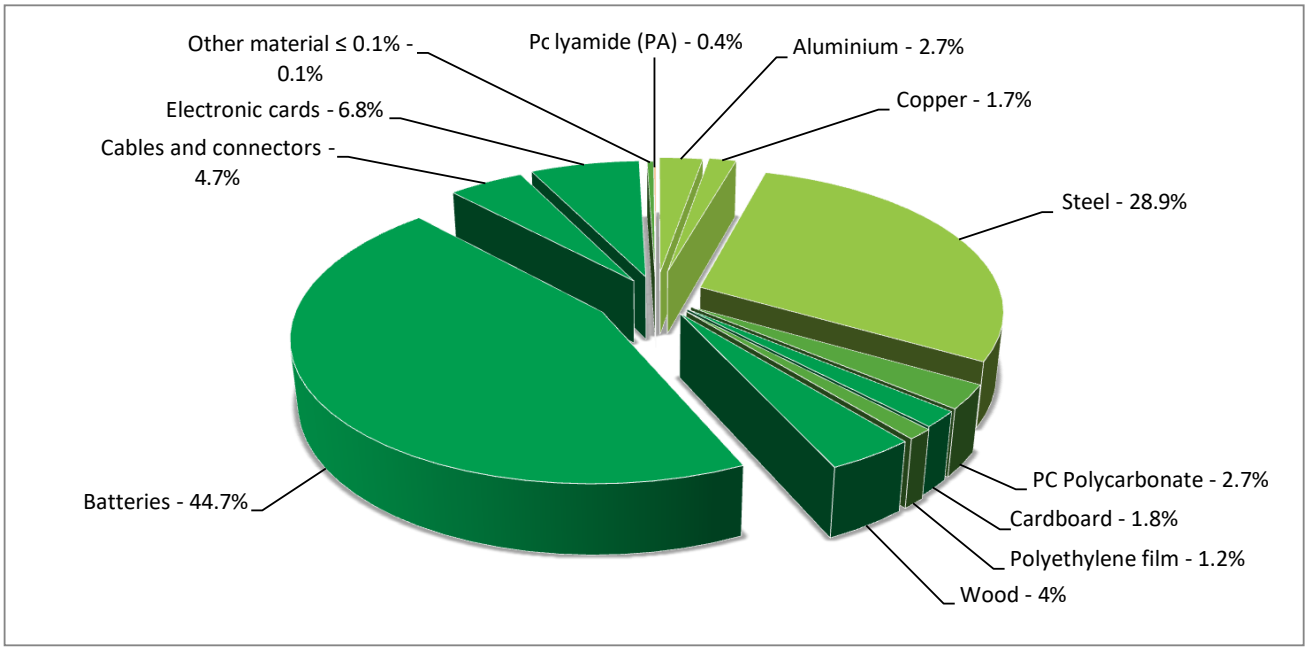
The UPS provides emergency power to a load when the input power source or main power fails

General information

Representative product	Uninterruptible Power Supply: Galaxy VM - GVMSB200KHS
Description of the product	The Galaxy VM is a highly efficient 160 -1125kVA -480V and 160 -1000kVA 400V 3 phase Uninterruptible Power Supply (UPS) system composed of modular UPS units of various size, battery cabinets, and unit connection accessories that provide seamless power protection for medium sized data centers, industrial and facilities applications.
	The UPS provides emergency power to a load when the input power source or main power fails
Description of the range	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.
Functional unit	To protect the load of 180000 Watts against input power failure for 15 years and provide a backup time of 7.1 minutes.

Constituent materials

Reference product mass	3077000 g	including the product and its packaging.



Substance assessment

Products of this range are designed in conformity with the requirements of the RoHS directive"," (European Directive 2011/65/EU of 8 June 2011) and do not contain, or only contain in the authorized proportions",", lead, mercury, cadmium, hexavalent chromium or flame retardants (polybrominated biphenyls"," - PBB, polybrominated diphenyl ethers - PBDE) as mentioned in the Directive.

The battery pack(s) within this product range are designed to conform with the requirements of the Battery and Accumulator Directive (European Directive 2006/66/EC of 26 September 2006) and do not contain, or only contain in authorized proportions, the regulated substances lead (Pb), mercury (Hg) and cadmium (Cd) as mentioned in the Directive. Additionally, the non-spillable, valve regulated lead acid batteries used in the battery pack(s) within this product range are certified by their manufacturers as capable of withstanding the IATA/ICAO Vibration and Pressure Differential Test and that at a temperature of 55 degrees Centigrade, there is no free electrolyte to flow from a ruptured or cracked case.

As the products of the range are designed in accordance with the RoHS Directive (European Directive 2002/95/EC of 27 January 2003), they can be incorporated without any restriction in an assembly or an installation subject to this 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

Additional environmental information

The Uninterruptible Power Supply: Galaxy VM presents the following relevent environmental aspects	
Design	Galaxy VM UPS systems deploy state of the art technology to lower life-time energy use through very high efficiency designs including the innovative ECOnversion mode. Galaxy VM UPSs seamlessly link into the electrical network via state-of-the-art features and provide excellent power quality and protection. Designed at a Schneider Electric Design Center that utilizes a design process that conforms to the requirements of the IEC 62430 "Environmentally Conscious Design for Electrical and Electronic Products" standard.
Manufacturing	Manufactured at a Schneider Electric production site ISO14001 certified
Distribution	Weight and volume of the packaging optimized, based on the European Union's packaging directive Packaging weight is 214510.5 g, consisting of cardboard (25%), PE film (18%) wood (56%) and paper (1%) Product distribution optimized by setting up local distribution centers
Installation	Galaxy VM does not require any special installation materials or operations.
Use	Battery - 2 changes Fan - 3 changes Filter - 14 changes Display - 2 changes
End of life	End of life optimized to decrease the amount of waste and allow recovery of the product components and materials This product contains external electrical cables (119200 g), printed circuit boards >10cm2 (31054 g), plastics with brominated flame retardants (2980 g), Lead acid batteries (1348880 g), LCD display >10mm2 (204 g) and NiMH (coin) batteries (11 g). that should be separated from the stream of waste so as to optimize end-of-life treatment. The location of these components and other recommendations are given in the End of Life Instruction document which is available on the Schneider-Electric Green Premium website http://www2.schneider-electric.com/sites/corporate/en/products-services/green-premium/green-premium.page Recyclability potential: **64%** Based on “ECO’DEEE recyclability and recoverability calculation method” (version V1, 20 Sep. 2008 presented to the French Agency for Environment and Energy Management: ADEME).

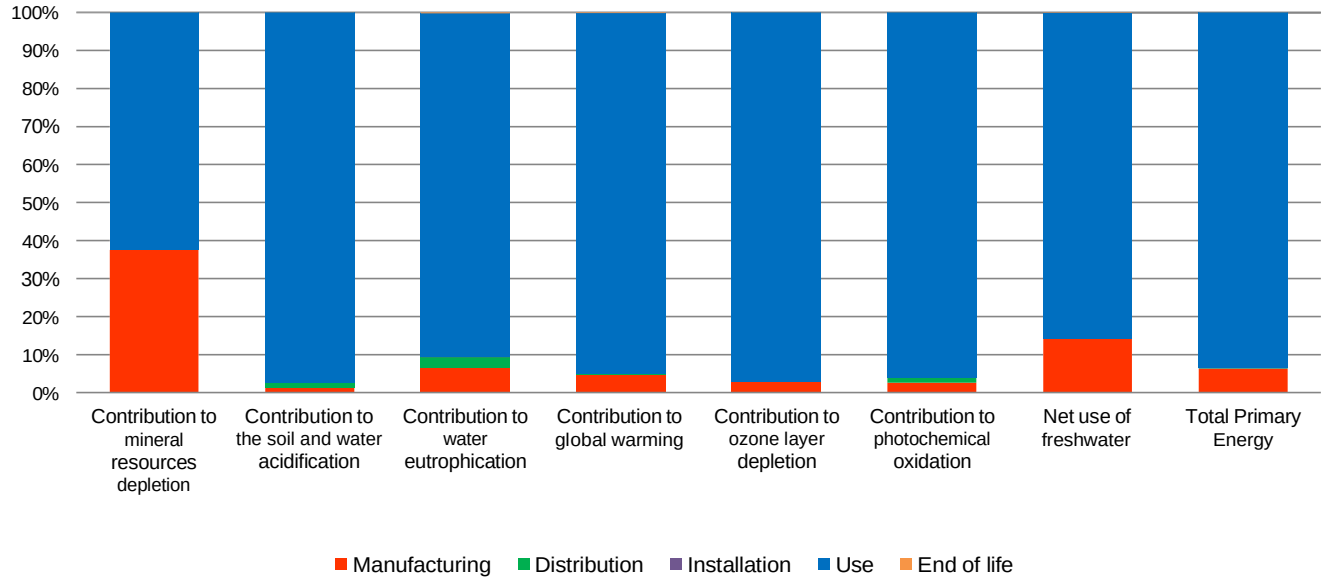
Environmental impacts

Reference lifetime	15 years			
Product category	Active products			
Installation elements	Transport and disposal of packaging are accounted for during installation. No special installation components needed.			
Use scenario	Consumed power is 3490.3125 W 100 % of the time in Active mode, W 0 % of the time in Standby mode, W 0 % of the time in Sleep mode and W 0 % of the time in Off mode.			
Geographical representativeness	Europe			
Technological representativeness	The Galaxy VM is a highly efficient 160 -1125kVA -480V and 160 -1000kVA 400V 3 phase Uninterruptible Power Supply (UPS) system composed of modular UPS units of various size, battery cabinets, and unit connection accessories that provide seamless power protection for medium sized data centers, industrial and facilities applications.			
Energy model used	**Manufacturing**	**Installation**	**Use**	**End of life**
	Energy model used: India	ELCD_Electricity_mix_<1kV_EU-27_ELCD-0089	ELCD_Electricity_mix_<1kV_EU-27_ELCD-0089	ELCD_Electricity_mix_<1kV_EU-27_ELCD-0089

Compulsory indicators	Uninterruptible Power Supply: Galaxy VM - GVMSB200KHS						
Impact indicators	**Unit**	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to mineral resources depletion	kg Sb eq	2.08E+01	7.80E+00	0*	0*	1.30E+01	0*

Contribution to the soil and water acidification	kg SO_2 eq	2.14E+03	2.74E+01	2.73E+01	5.69E-01	2.08E+03	1.03E+00
Contribution to water eutrophication	kg PO_4^{3-} eq	9.61E+01	6.11E+00	2.75E+00	1.36E-01	8.69E+01	2.69E-01
Contribution to global warming	kg CO_2 eq	3.16E+05	1.45E+04	1.04E+03	1.86E+02	2.99E+05	6.51E+02
Contribution to ozone layer depletion	kg CFC11 eq	7.19E-02	2.06E-03	0*	0*	6.99E-02	0*
Contribution to photochemical oxidation	kg C_2H_4 eq	1.08E+02	2.83E+00	1.36E+00	4.24E-02	1.04E+02	7.72E-02

Resources use	**Unit**	Total	Manufacturing	Distribution	Installation	Use	End of Life
Net use of freshwater	m3	1.01E+03	1.44E+02	0*	3.21E-01	8.68E+02	8.06E-01
Total Primary Energy	MJ	5.49E+06	3.39E+05	1.27E+04	4.26E+03	5.13E+06	3.26E+03



Optional indicators	**Uninterruptible Power Supply: Galaxy VM - GVMSB200KHS**						
Impact indicators	**Unit**	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to fossil resources depletion	MJ	3.46E+06	2.03E+05	1.33E+04	4.23E+03	3.24E+06	3.26E+03
Contribution to air pollution	m^3	2.82E+07	5.56E+06	1.34E+05	9.47E+03	2.24E+07	1.32E+04
Contribution to water pollution	m^3	2.27E+07	3.32E+06	1.56E+05	1.66E+04	1.90E+07	1.87E+05
Resources use	**Unit**	Total	Manufacturing	Distribution	Installation	Use	End of Life
Use of secondary material	kg	4.12E+02	4.06E+02	0*	4.60E-01	5.32E+00	0*
Total use of renewable primary energy resources	MJ	3.99E+05	5.56E+03	0*	2.17E+02	3.93E+05	0*
Total use of non-renewable primary energy resources	MJ	5.09E+06	3.34E+05	1.27E+04	4.05E+03	4.74E+06	3.25E+03
Use of renewable primary energy excluding renewable primary energy used as raw material	MJ	3.96E+05	2.29E+03	0*	0*	3.93E+05	0*
Use of renewable primary energy resources used as	MJ	3.46E+03	3.27E+03	0*	1.96E+02	0*	0*
Use of non-renewable primary energy excluding non renewable primary energy used as raw material	MJ	5.06E+06	3.22E+05	1.27E+04	2.28E+03	4.72E+06	3.25E+03
Use of non-renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*
Use of renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*
Waste categories	**Unit**	Total	Manufacturing	Distribution	Installation	Use	End of Life
Hazardous waste disposed	kg	1.35E+04	8.72E+03	0*	0*	4.41E+03	3.43E+02
Non hazardous waste disposed	kg	1.02E+06	4.22E+03	0*	0*	1.01E+06	1.59E+02
Radioactive waste disposed	kg	8.31E+02	2.68E+00	0*	0*	8.28E+02	0*
Other environmental information	**Unit**	Total	Manufacturing	Distribution	Installation	Use	End of Life

Materials for recycling	kg	3.43E+01	3.43E+01	0*	0*	0*	0*
Components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*
Materials for energy recovery	kg	0.00E+00	0*	0*	0*	0*	0*
Exported Energy	MJ	0.00E+00	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 EIME v5.5, database version 2016-11.

The use phase is the life cycle phase which has the greatest impact on the majority of environmental indicators (based on compulsory indicators).

According to this environmental analysis, proportionality rules may be used to evaluate the impacts of other products of this range.

The environmental indicators of other products in this family may be proportional extrapolated based on relationships between an amount of a key parameter of the product as compared to the amount of that key parameter within the reference product. Proportionality rules are based on the following key parameters: Manufacturing phase impacts - total mass of product. Distribution phase impacts - total mass of product (including packaging). Installation phase impacts - mass of packaging. Use phase impacts - life time energy use. End of Life impacts - the product mass (excluding packaging).

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 N°	ENVPEP1701005_V2	*Drafting rules*	PCR-ed3-EN-2015 04 02
		Supplemented by	PSR-0010-ed1.1-EN-2015 10 16
		Information and reference documents	www.pep-ecopassport.org
Date of issue	01/2017	*Validity period*	5 years

Independent verification of the declaration and data, in compliance with ISO 14025: 2010

Internal X External

The PCR review was conducted by a panel of experts chaired by Philippe Osset (SOLINNEN)

The elements of the present PEP cannot be compared with elements from another program.

Document in compliance with ISO 14025: 2010 « Environmental labels and declarations. Type III environmental declarations »

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