

# Product Environmental Profile

## Galaxy VS 10-100kW Standalone UPS

10-50kW 208V and 20-100kW 400/480V UPS





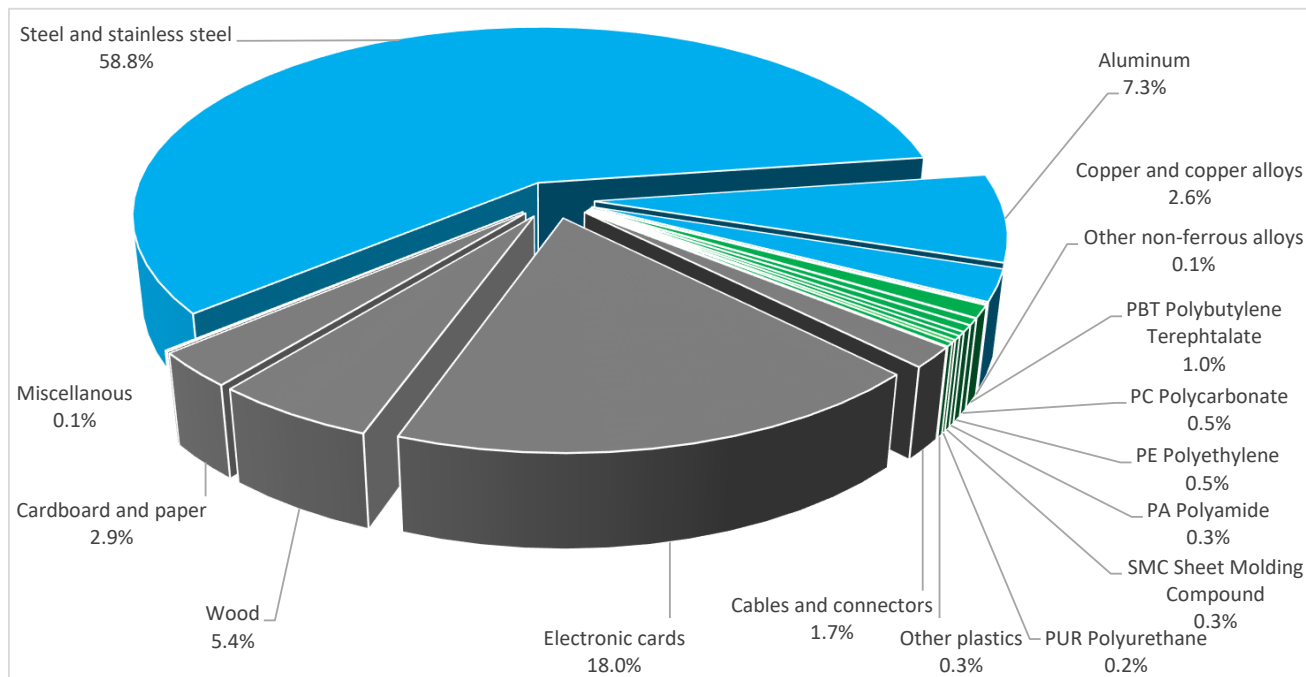
## General information

<b>Representative product</b>	Galaxy VS 10-100kW Standalone UPS - GVSUPS100KD
<b>Description of the product</b>	Double-conversion UPS ensuring crucial servers, equipment racks, and network devices stay powered and active during outages and brownouts. With industry-leading efficiency in normal operating mode and ECONversion mode, the Galaxy VS UPS is modular, lightweight and provides full front service access.
<b>Description of the range</b>	10-50kW 208V and 20-100kW 400/480V UPS 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.
<b>Products covered</b>	GVSUPS100KD GVSUPS20KHS GVSUPS30KHS GVSUPS40KHS GVSUPS50KHS GVSUPS60KHS GVSUPS80KHS GVSUPS100KHS GVSUPS10KFS GVSUPS15KFS GVSUPS25KFS GVSUPS30KFS GVSUPS40KFS GVSUPS50KFS GVSUPS20KGS GVSUPS30KGS GVSUPS40KGS GVSUPS50KGS GVSUPS60KGS GVSUPS80KGS GVSUPS100KGS
<b>Functional unit</b>	To protect the load of 100,000 Watts against input power failure during 15 years and switch to the energy storage system to avoid power outage.



## Constituent materials

<b>Reference product mass</b>	275000 g including the product, its packaging and additional elements and accessories
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Plastics	3.1%
Metals	68.9%
Others	28.1%



## 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 authorised proportions, lead, mercury, cadmium, hexavalent chromium or flame retardants (polybrominated biphenyls - PBB, polybrominated diphenyl ethers - PBDE) as mentioned in the Directive

Products of this range are classified under the RoHS directive as category 9i - Industrial Control and Monitoring Equipment. The product range becomes subject to the substance limitations of European Directive 2015/863 on 22 July 2021.

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 Galaxy VS 10-100kW Standalone UPS presents the following relevant environmental aspects

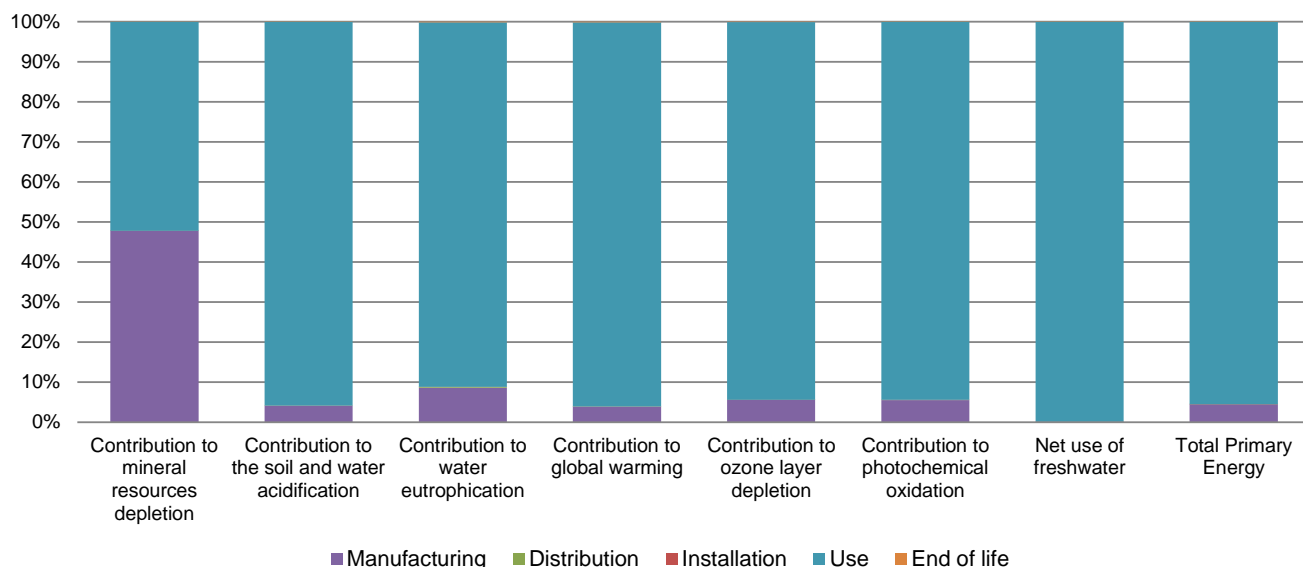
<b>Design</b>	The Galaxy VS UPS features ECO and EConversion modes that increase the UPS's efficiency up to 99%. Designed at a Schneider Electric Design Center that utilizes a design process that conforms to the requirements of the IEC 62430 "Environmentally Conscious Design for Electrical and Electronic Products" standard.
<b>Manufacturing</b>	Manufactured at a Schneider Electric production site ISO14001 certified
<b>Distribution</b>	Weight and volume of the packaging optimized, based on the European Union's packaging directive Packaging weight is 24181.3 g, consisting of wood (61%), cardboard and paper (33%), polyethylene film (4%) and other plastics (1%) Product distribution optimised by setting up local distribution centres
<b>Installation</b>	The Galaxy VS UPS does not require any special installation materials or operations. Installation is to be performed by qualified personnel.
<b>Use</b>	Product maintenance requires monitoring and replacement of components as needed. To align with PSR0010, the power modules are replaced once and the fans are replaced two times. Additionally, it is expected that the dust filter will need to be replaced annually.
<b>End of life</b>	End of life optimized to decrease the amount of waste and allow recovery of the product components and materials This product contains Lithium metal coin batteries (6g), Printed Circuit Boards >10cm <sup>2</sup> (44280g) and Electrolytic Capacitors (5120g) 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 <a href="http://www2.schneider-electric.com/sites/corporate/en/products-services/green-premium/green-premium.page">http://www2.schneider-electric.com/sites/corporate/en/products-services/green-premium/green-premium.page</a>  Recyclability potential: <b>74%</b> 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

<b>Reference life time</b>	15 years			
<b>Installation elements</b>	Transport and disposal of packaging are accounted for during installation. No special installation components needed.			
<b>Use scenario</b>	Power consumption conforms to the requirements in PSR0010 where it is modeled to operate at 25% load for 25% of the time, 50% load for 50% of the time and 75% load for 25% of the time. The UPS is also modeled to operate in normal mode (average efficiency of 97% and annual use of 12,319kWh) 50% of the time and EConversion mode (average efficiency of 99% and annual use of 4,544kWh) the remaining 50% of the time.			
<b>Geographical representativeness</b>	Europe			
<b>Technological representativeness</b>	The means of material production, processing and transport modeled are representative of the technologies used in production.			
<b>Energy model used</b>	<b>Manufacturing</b>	<b>Installation</b>	<b>Use</b>	<b>End of life</b>
	Energy models used: EU-27, France, Portugal, Spain, UK, US, Brazil, China and Japan	Electricity grid mix; AC; consumption mix, at consumer; < 1kV; EU-27	Electricity grid mix; AC; consumption mix, at consumer; < 1kV; EU-27	Electricity grid mix; AC; consumption mix, at consumer; < 1kV; EU-27

Compulsory indicators		Galaxy VS 10-100kW Standalone UPS - GVSUPS100KD					
Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to mineral resources depletion	kg Sb eq	8.22E-01	3.93E-01	0*	0*	4.29E-01	0*
Contribution to the soil and water acidification	kg SO <sub>2</sub> eq	2.81E+02	1.14E+01	1.62E-01	0*	2.70E+02	9.45E-02
Contribution to water eutrophication	kg PO <sub>4</sub> <sup>3-</sup> eq	1.89E+01	1.64E+00	3.73E-02	4.93E-03	1.72E+01	3.56E-02
Contribution to global warming	kg CO <sub>2</sub> eq	6.74E+04	2.61E+03	3.55E+01	1.63E+01	6.47E+04	9.37E+01
Contribution to ozone layer depletion	kg CFC11 eq	4.63E-03	2.59E-04	0*	0*	4.36E-03	3.75E-06
Contribution to photochemical oxidation	kg C <sub>2</sub> H <sub>4</sub> eq	1.60E+01	8.84E-01	1.16E-02	3.80E-03	1.50E+01	8.92E-03

Resources use	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Net use of freshwater	m3	2.25E+05	2.67E+02	0*	0*	2.25E+05	0*
Total Primary Energy	MJ	1.35E+06	6.05E+04	5.02E+02	0*	1.28E+06	4.38E+02



Optional indicators	Galaxy VS 10-100kW Standalone UPS - GVSUPS100KD						
Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to fossil resources depletion	MJ	7.63E+05	2.87E+04	4.98E+02	0*	7.33E+05	3.55E+02
Contribution to air pollution	m <sup>3</sup>	3.35E+06	3.50E+05	1.51E+03	4.03E+02	3.00E+06	3.12E+03
Contribution to water pollution	m <sup>3</sup>	3.12E+06	2.43E+05	5.83E+03	0*	2.87E+06	5.08E+03
Resources use	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Use of secondary material	kg	1.05E+02	7.46E+01	0*	0*	3.07E+01	0*
Total use of renewable primary energy resources	MJ	1.60E+05	1.29E+03	0*	0*	1.59E+05	0*
Total use of non-renewable primary energy resources	MJ	1.19E+06	5.92E+04	5.01E+02	0*	1.13E+06	4.38E+02
Use of renewable primary energy excluding renewable primary energy used as raw material	MJ	1.59E+05	8.35E+02	0*	0*	1.58E+05	0*
Use of renewable primary energy resources used as raw material	MJ	7.58E+02	4.59E+02	0*	0*	2.99E+02	0*
Use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	1.18E+06	5.85E+04	5.01E+02	0*	1.12E+06	4.38E+02
Use of non renewable primary energy resources used as raw material	MJ	1.71E+03	6.99E+02	0*	0*	1.01E+03	0*
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	6.35E+03	3.13E+03	0*	0*	2.85E+03	3.67E+02
Non hazardous waste disposed	kg	2.33E+05	8.70E+02	0*	0*	2.32E+05	0*
Radioactive waste disposed	kg	1.56E+02	5.84E-01	0*	0*	1.55E+02	0*
Other environmental information	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Materials for recycling	kg	3.23E+02	2.42E+01	0*	1.25E+01	9.98E+01	1.86E+02
Components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*
Materials for energy recovery	kg	5.40E+01	0*	0*	0*	3.24E+01	2.16E+01
Exported Energy	MJ	1.68E+01	9.56E-01	0*	9.22E+00	6.62E+00	0*

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

Life cycle assessment performed with EIME version EIME v5.8.1, database version 2018-11 in compliance with ISO14044.

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, by life cycle phase, based on the ratio of the amount of a key parameter of the product, over the amount of that key parameter within the reference product. Proportionality rules are based on the following key parameters for impacts by lifecycle phase: Manufacturing phase impacts - mass of the product (excluding packaging). Distribution phase impacts - total mass of product (including packaging). Installation phase impacts - mass of packaging. Use phase impacts - product lifetime energy consumption\*. End of Life impacts - the product mass (excluding packaging).

\* For the Use phase the abiotic depletion category is a function of the replacement part mass. For all others it is a function of the product energy consumption.

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.

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Verifier accreditation N°	VH25	Supplemented by	PSR-0010-ed1.1-EN-2015 10 16
Date of issue	02/2019	Information and reference documents	<a href="http://www.pep-ecopassport.org">www.pep-ecopassport.org</a>
		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)			
PEP are compliant with XP C08-100-1 :2014			
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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