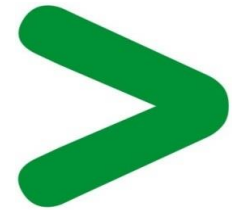


Product Environmental Profile

Galaxy VS UPS 10-100kW with integrated batteries

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

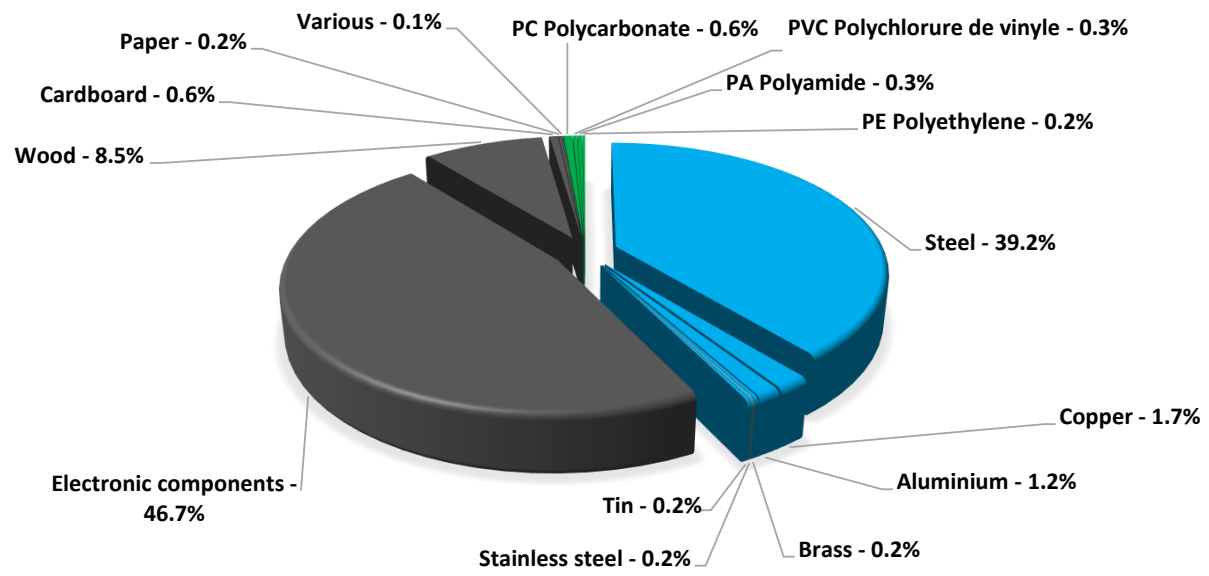


General information

| | |
|-----------------------------------|--|
| Representative product | Galaxy VS UPS 10-100kW with integrated batteries - GVSUPS50KB4D |
| Description of the product | 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. |
| Description of the range | 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. |
| Functional unit | To protect the load of 50,000 Watts against input power failure during 15 years and switch to the energy storage system to avoid power outage. |

Constituent materials

| | |
|-------------------------------|---|
| Reference product mass | 478981 g including the product, its packaging and additional elements and accessories |
|-------------------------------|---|



| | |
|----------|-------|
| Plastics | 1.4% |
| Metals | 42.7% |
| Others | 55.9% |

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

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.

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>

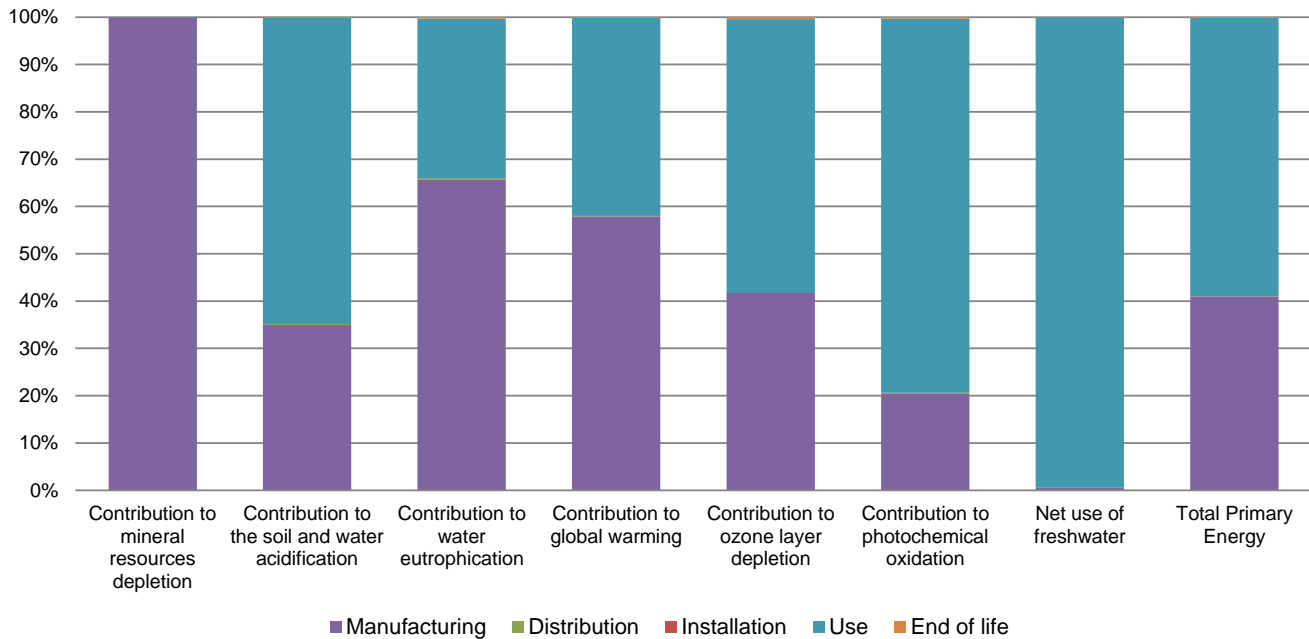
Additional environmental information

| The Galaxy VS UPS 10-100kW with integrated batteries presents the following relevant environmental aspects | |
|--|--|
| 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 40769.4 g, consisting of wood (91%), cardboard and paper (7%) and polyethylene film (2%) Product distribution optimised by setting up local distribution centres |
| Installation | The Galaxy VS UPS does not require any special installation materials or operations. Installation is to be performed by qualified personnel. |
| Use | 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. |
| 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 Lithium metal coin batteries (2g), Printed Circuit Boards >10cm ² (6675g) and Electrolytic Capacitors (240g) 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: 68% 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 life time | 15 years | | | |
| Installation elements | Transport and disposal of packaging are accounted for during installation. No special installation components needed. | | | |
| Use scenario | 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 96.6% and annual use of 7,281.75kWh) 50% of the time and ECOConversion mode (average efficiency of 99% and annual use of 2,190kWh) the remaining 50% of the time. | | | |
| Geographical representativeness | Europe | | | |
| Technological representativeness | 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 ECOConversion mode, the Galaxy VS UPS is modular, lightweight and provides full front service access. | | | |
| Energy model used | Manufacturing | Installation | Use | End of life |
| | Energy model used: India | 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 UPS 10-100kW with integrated batteries - GVSUPS50KB4D | | | | | |
|--|-------------------------------------|---|---------------|--------------|--------------|----------|-------------|
| Impact indicators | Unit | Total | Manufacturing | Distribution | Installation | Use | End of Life |
| Contribution to mineral resources depletion | kg Sb eq | 6.92E+01 | 6.92E+01 | 0* | 0* | 0* | 0* |
| Contribution to the soil and water acidification | kg SO ₂ eq | 2.24E+02 | 7.84E+01 | 2.82E-01 | 0* | 1.45E+02 | 2.66E-01 |
| Contribution to water eutrophication | kg PO ₄ ³⁻ eq | 2.60E+01 | 1.70E+01 | 6.50E-02 | 1.01E-02 | 8.77E+00 | 7.71E-02 |
| Contribution to global warming | kg CO ₂ eq | 8.33E+04 | 4.83E+04 | 6.18E+01 | 3.97E+01 | 3.48E+04 | 1.58E+02 |
| Contribution to ozone layer depletion | kg CFC11 eq | 3.92E-03 | 1.63E-03 | 0* | 0* | 2.27E-03 | 1.58E-05 |
| Contribution to photochemical oxidation | kg C ₂ H ₄ eq | 1.01E+01 | 2.05E+00 | 2.01E-02 | 9.16E-03 | 7.98E+00 | 3.07E-02 |
| Resources use | Unit | Total | Manufacturing | Distribution | Installation | Use | End of Life |
| Net use of freshwater | m ³ | 1.27E+05 | 6.80E+02 | 0* | 0* | 1.26E+05 | 0* |
| Total Primary Energy | MJ | 1.18E+06 | 4.84E+05 | 8.74E+02 | 0* | 6.95E+05 | 1.59E+03 |



| Optional indicators | | Galaxy VS UPS 10-100kW with integrated batteries - GVSUPS50KB4D | | | | | |
|---|----------------|---|---------------|--------------|--------------|----------|-------------|
| Impact indicators | Unit | Total | Manufacturing | Distribution | Installation | Use | End of Life |
| Contribution to fossil resources depletion | MJ | 8.35E+05 | 4.37E+05 | 8.68E+02 | 0* | 3.95E+05 | 1.13E+03 |
| Contribution to air pollution | m ³ | 7.17E+06 | 5.66E+06 | 2.63E+03 | 9.38E+02 | 1.50E+06 | 1.53E+04 |
| Contribution to water pollution | m ³ | 2.24E+06 | 7.84E+05 | 1.02E+04 | 4.49E+02 | 1.44E+06 | 1.05E+04 |
| Resources use | Unit | Total | Manufacturing | Distribution | Installation | Use | End of Life |
| Use of secondary material | kg | 2.79E+00 | 2.79E+00 | 0* | 0* | 0* | 0* |
| Total use of renewable primary energy resources | MJ | 8.98E+04 | 1.38E+03 | 0* | 0* | 8.84E+04 | 0* |
| Total use of non-renewable primary energy resources | MJ | 1.09E+06 | 4.83E+05 | 8.73E+02 | 0* | 6.07E+05 | 1.59E+03 |
| Use of renewable primary energy excluding renewable primary energy used as raw material | MJ | 8.91E+04 | 7.06E+02 | 0* | 0* | 8.84E+04 | 0* |
| Use of renewable primary energy resources used as raw material | MJ | 6.76E+02 | 6.76E+02 | 0* | 0* | 0* | 0* |
| Use of non renewable primary energy excluding non renewable primary energy used as raw material | MJ | 1.09E+06 | 4.82E+05 | 8.73E+02 | 0* | 6.07E+05 | 1.59E+03 |
| Use of non renewable primary energy resources used as raw material | MJ | 9.17E+02 | 9.17E+02 | 0* | 0* | 0* | 0* |
| Use of non renewable secondary fuels | MJ | 0.00E+00 | 0* | 0* | 0* | 0* | 0* |

| Waste categories | Unit | Total | Manufacturing | Distribution | Installation | Use | End of Life |
|----------------------------------|------|----------|---------------|--------------|--------------|----------|-------------|
| Use of renewable secondary fuels | MJ | 0.00E+00 | 0* | 0* | 0* | 0* | 0* |
| Hazardous waste disposed | kg | 6.68E+04 | 6.60E+04 | 0* | 0* | 1.81E+01 | 8.25E+02 |
| Non hazardous waste disposed | kg | 1.31E+05 | 1.65E+03 | 0* | 2.97E+01 | 1.30E+05 | 3.43E+01 |
| Radioactive waste disposed | kg | 8.73E+01 | 6.70E-01 | 0* | 0* | 8.67E+01 | 1.05E-02 |
| Other environmental information | Unit | Total | Manufacturing | Distribution | Installation | Use | End of Life |
| Materials for recycling | kg | 3.34E+02 | 2.03E+01 | 0* | 1.41E+01 | 0* | 3.00E+02 |
| Components for reuse | kg | 0.00E+00 | 0* | 0* | 0* | 0* | 0* |
| Materials for energy recovery | kg | 1.87E+01 | 0* | 0* | 0* | 0* | 1.87E+01 |
| Exported Energy | MJ | 5.81E+01 | 3.49E+01 | 0* | 2.31E+01 | 0* | 0* |

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

Life cycle assessment performed with EIME version EIME v5.8.1, database version 2016-11 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.

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 number | ENVPEP2009014_V1 | Drafting rules | PCR-ed3-EN-2015 04 02 |
| Date of issue | 10/2020 | Supplemented by | PSR-0010-ed1.1-EN-2015 10 16 |
| Validity period | 5 years | Information and reference documents | www.pep-ecopassport.org |
| Independent verification of the declaration and data | | | |
| Internal | X | External | |
| The elements of the present PEP cannot be compared with elements from another program. | | | |
| Document in compliance with ISO 14021:2016 « Environmental labels and declarations - Self-declared environmental claims (Type II environmental labelling) » | | | |

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