

Product Environmental Profile

Galaxy VL UPS

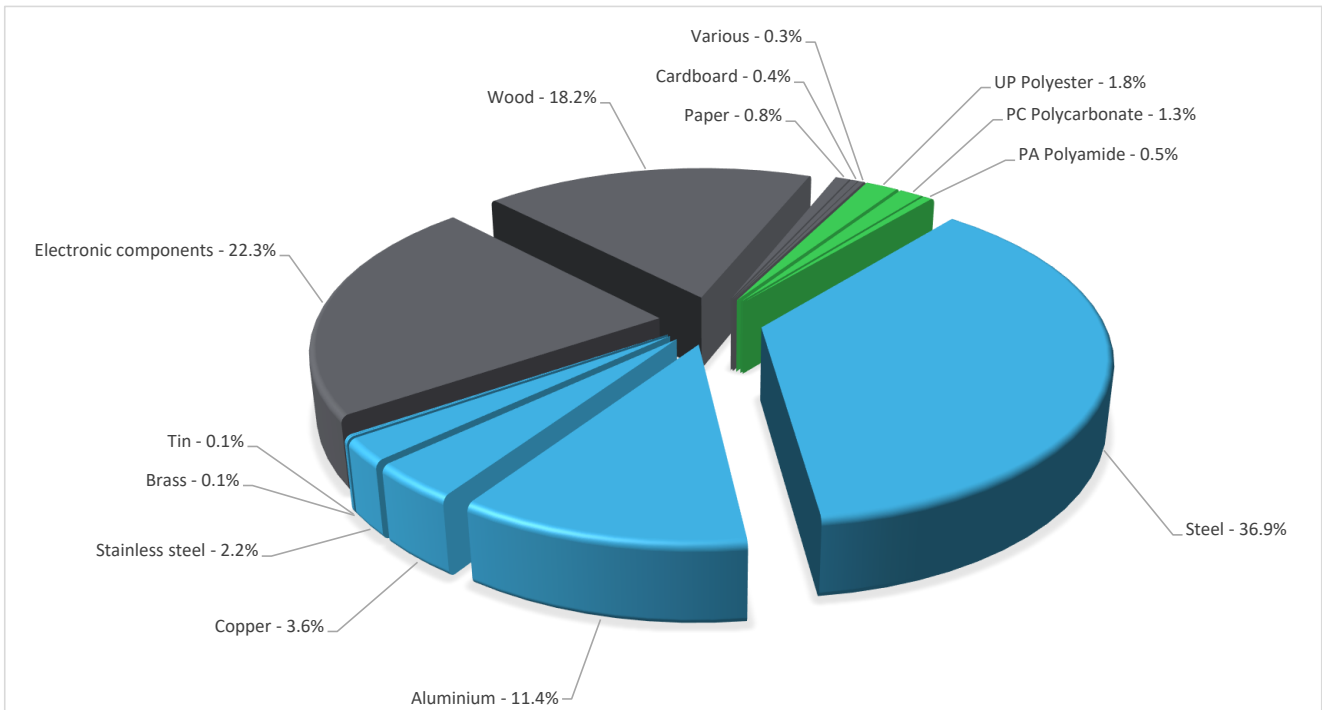


General information

Reference product	Galaxy VL UPS - GVL500KDS																														
Description of the product	Galaxy VL is a highly efficient, compact, modular, and scalable 200-500 kW (400 V or 480 V) 3-phase uninterruptible power supply (UPS) available worldwide that delivers top performance for medium, large, and edge data centers, as well as critical infrastructure in commercial and industrial facilities.																														
Description of the range	Galaxy VL UPS 200-500 kW, 400 or 480V, Start-up 5x8 The representative product is Galaxy VL UPS 500 kW, 400 or 480V, Start-up 5x8 The other products of the range are: GVL200K500DS, GVL300K500DS, GVL400K500DS																														
	<table border="1"> <thead> <tr> <th>Type</th> <th>Net weight (kg)</th> <th>Weight with packaging (kg)</th> <th>Dimension (mm) HxWxD</th> <th>Output performance classification</th> <th>UPS rating (PF=1)</th> </tr> </thead> <tbody> <tr> <td>Galaxy VL UPS 200 kW scalable to 500 kW, 400 or 480V, start-up 5x8</td> <td>550</td> <td>620</td> <td>1970x850x925</td> <td rowspan="4">VFI-SS-111</td> <td>200 kW/kVA</td> </tr> <tr> <td>Galaxy VL UPS 300 kW scalable to 500 kW, 400 or 480V, start-up 5x8</td> <td>626</td> <td>744</td> <td>1970x850x925</td> <td>300 kW/kVA</td> </tr> <tr> <td>Galaxy VL UPS 400 kW scalable to 500 kW, 400 or 480V, start-up 5x8</td> <td>702</td> <td>868</td> <td>1970x850x925</td> <td>400 kW/kVA</td> </tr> <tr> <td>Galaxy VL UPS 500 kW, 400 or 480V, Start-up 5x8</td> <td>778</td> <td>992</td> <td>1970x850x925</td> <td>500 kW/kVA</td> </tr> </tbody> </table>	Type	Net weight (kg)	Weight with packaging (kg)	Dimension (mm) HxWxD	Output performance classification	UPS rating (PF=1)	Galaxy VL UPS 200 kW scalable to 500 kW, 400 or 480V, start-up 5x8	550	620	1970x850x925	VFI-SS-111	200 kW/kVA	Galaxy VL UPS 300 kW scalable to 500 kW, 400 or 480V, start-up 5x8	626	744	1970x850x925	300 kW/kVA	Galaxy VL UPS 400 kW scalable to 500 kW, 400 or 480V, start-up 5x8	702	868	1970x850x925	400 kW/kVA	Galaxy VL UPS 500 kW, 400 or 480V, Start-up 5x8	778	992	1970x850x925	500 kW/kVA			
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Galaxy VL UPS 500 kW, 400 or 480V, Start-up 5x8	778	992	1970x850x925		500 kW/kVA																										
Functional unit	To protect the load of 500 kW against input power failure during 15 years and switch to the energy storage system to avoid power outage																														

Constituent materials

Reference product mass	992 kg	including the product, its packaging and additional elements and accessories
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Plastics	3.60%
Metals	54.30%
Others	42.10%

Substance assessment

RoHS compliance	Products of this range are designed in conformity with the requirements of the RoHS directive (European Directive 2011/65/EU of 8 June 2011) on restriction of lead, mercury, cadmium, hexavalent chromium or flame retardants -PBB&PBDE or phthalates-DEHP, BBP, DBP, DIBP.
REACH compliance	Products of this range are designed in conformity with the requirements of the REACH 1907/2006 regulation and its latest updates.
Battery Directive compliance	The battery within this product range are designed in conformity with the requirements of the Battery and Accumulator Directive (European Directive 2006/66/EC of 26 September 2006).

Details of ROHS and REACH substances information are available on the Schneider-Electric Green Premium website
<https://www.se.com/ww/en/work/support/green-premium/>



Additional environmental information

End Of Life	Recyclability potential:	50%	The recyclability rate was calculated from the recycling rates of each material making up the product with the exception of data using the ESR database. For materials or components using the ESR database or the absence of data the conservative hypothesis "0% recyclability" was used.
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Environmental impacts

Reference service life time	15 years													
Product category	Uninterruptible Power Supply (UPS) - without energy storage system incorporated - P > 10000W													
Installation elements	The product does not need specific tools or services, only packaging of the product needs to be eliminated.													
Use scenario	Power consumption conforms to the requirements in PSR-0010-ed2-EN-2023 12 08_UPS:													
	<table border="1"> <tr> <td>Load rate</td> <td>25%</td> <td>50%</td> <td>75%</td> <td>100%</td> </tr> <tr> <td>Proportion of time at specified load</td> <td>0.25</td> <td>0.5</td> <td>0.25</td> <td>0</td> </tr> </table>				Load rate	25%	50%	75%	100%	Proportion of time at specified load	0.25	0.5	0.25	0
	Load rate	25%	50%	75%	100%									
	Proportion of time at specified load	0.25	0.5	0.25	0									
	The referent UPS is modeled to operate in normal mode (average efficiency of 96.9% and annual use of 66,521 kWh) 100% of the time after 15 years.													
	Type (400V UPS system)		Double conversion		eConversion									
			Average energy efficiency	Electricity consumption (kWh over 15 years)	Average energy efficiency	Electricity consumption (kWh over 15 years)								
	Galaxy VL UPS 200 kW scalable to 500 kW, 400 or 480V, start-up 5x8		97.0%	394,200	98.9%	131,400								
	Galaxy VL UPS 300 kW scalable to 500 kW, 400 or 480V, start-up 5x8		97.0%	591,300	98.9%	197,100								
	Galaxy VL UPS 400 kW scalable to 500 kW, 400 or 480V, start-up 5x8		97.0%	788,400	98.9%	262,800								
Galaxy VL UPS 500 kW, 400 or 480V, Start-up 5x8		96.9%	997,819	98.9%	328,500									
Type (480V UPS system)		Double conversion		eConversion										
		Average energy efficiency	Electricity consumption (kWh over 15 years)	Average energy efficiency	Electricity consumption (kWh over 15 years)									
Galaxy VL UPS 200 kW scalable to 500 kW, 400 or 480V, start-up 5x8		97.0%	377,775	98.8%	142,898									
Galaxy VL UPS 300 kW scalable to 500 kW, 400 or 480V, start-up 5x8		97.0%	564,199	98.8%	214,346									
Galaxy VL UPS 400 kW scalable to 500 kW, 400 or 480V, start-up 5x8		97.0%	765,405	98.8%	282,510									
Galaxy VL UPS 500 kW, 400 or 480V, Start-up 5x8		97.0%	969,075	98.9%	336,713									
Time representativeness	The collected data are representative of the year 2024													
Technological representativeness	The Modules of Technologies such as material production, manufacturing processes and transport technology used in the PEP analysis (LCA EIME in the case) are Similar and représentaive of the actual type of technologies used to make the product.													
Geographical representativeness	Europe													
Energy model used	[A1 - A3]	[A5]	[B6]	[C1 - C4]										
	Electricity Mix; High voltage; 2018; Asia Pacific, APAC	Electricity Mix; Low voltage; 2018; Europe, EU-27	Electricity Mix; Low voltage; 2018; Europe, EU-27	Electricity Mix; Low voltage; 2018; Europe, EU-27										

Detailed results of the optional indicators mentioned in PCRed4 are available in the LCA report and on demand in a digital format - Country Customer Care Center - <http://www.schneider-electric.com/contact>

The calculation result is scientific counting method. For example, $1.37E+06=1.37*10^6=1,370,000$, $1.64E-04=1.64*10^{-4}=0.000164$

Mandatory Indicators		Galaxy VL UPS - GVL500KDS							
Impact indicators	Unit	Total (without Module D)	[A1 - A3] - Manufacturing	[A4] - Distribution	[A5] - Installation	[B1 - B7] - Use	[C1 - C4] - End of life	[D] - Benefits and loads**	
Contribution to climate change	kg CO2 eq	4.33E+05	2.06E+04	1.50E+02	2.59E+02	4.09E+05	2.99E+03	-3.26E+03	
Contribution to climate change-fossil	kg CO2 eq	4.32E+05	2.04E+04	1.50E+02	1.65E+02	4.08E+05	2.97E+03	-3.21E+03	
Contribution to climate change-biogenic	kg CO2 eq	8.80E+02	2.25E+02	0*	9.42E+01	5.46E+02	1.59E+01	-5.93E+01	
Contribution to climate change-land use and land use change	kg CO2 eq	1.88E-02	1.86E-02	0*	1.53E-05	0*	1.88E-04	0.00E+00	
Contribution to ozone depletion	kg CFC-11 eq	4.46E-03	2.70E-03	0*	5.88E-07	1.75E-03	9.38E-06	-4.73E-04	
Contribution to acidification	mol H+ eq	2.50E+03	1.60E+02	9.50E-01	0*	2.33E+03	6.45E+00	-2.57E+01	
Contribution to eutrophication, freshwater	kg (PO4) ³⁻ eq	1.49E+00	1.22E-01	0*	1.06E-03	1.12E+00	2.50E-01	-8.95E-03	
Contribution to eutrophication marine	kg N eq	2.84E+02	1.72E+01	4.45E-01	4.91E-02	2.65E+02	1.65E+00	-1.88E+00	
Contribution to eutrophication, terrestrial	mol N eq	4.19E+03	1.88E+02	4.88E+00	4.82E-01	3.98E+03	1.76E+01	-2.13E+01	
Contribution to photochemical ozone formation - human health	kg COVNM eq	9.19E+02	6.14E+01	1.23E+00	1.54E-01	8.51E+02	5.24E+00	-7.58E+00	
Contribution to resource use, minerals and metals	kg Sb eq	2.63E+00	2.59E+00	0*	0*	2.96E-02	7.60E-03	-5.27E-01	
Contribution to resource use, fossils	MJ	1.08E+07	3.33E+05	2.09E+03	0*	1.04E+07	8.65E+04	-5.82E+04	
Contribution to water use	m3 eq	2.13E+04	6.14E+03	0*	2.23E+01	1.45E+04	6.67E+02	-1.23E+03	

Inventory flows Indicators		Galaxy VL UPS - GVL500KDS						
Inventory flows	Unit	Total (without Module D)	[A1 - A3] - Manufacturing	[A4] - Distribution	[A5] - Installation	[B1 - B7] - Use	[C1 - C4] - End of life	[D] - Benefits and loads
Contribution to use of renewable primary energy excluding renewable primary energy used as raw material	MJ	2.01E+06	9.79E+03	0*	8.44E+02	2.00E+06	0*	-1.43E+03
Contribution to use of renewable primary energy resources used as raw material	MJ	5.35E+03	5.35E+03	0*	0*	0*	0*	-1.20E+03
Contribution to total use of renewable primary energy resources	MJ	2.02E+06	1.51E+04	0*	8.44E+02	2.00E+06	0*	-2.64E+03
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	1.08E+07	3.30E+05	2.09E+03	0*	1.04E+07	8.65E+04	-5.80E+04
Contribution to use of non renewable primary energy resources used as raw material	MJ	3.49E+03	3.49E+03	0*	0*	0*	0*	-1.92E+02
Contribution to total use of non-renewable primary energy resources	MJ	1.08E+07	3.33E+05	2.09E+03	0*	1.04E+07	8.65E+04	-5.82E+04
Contribution to use of secondary material	kg	8.22E-01	8.22E-01	0*	0*	0*	0*	0.00E+00
Contribution to use of renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to use of non renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to net use of freshwater	m³	4.96E+02	1.43E+02	0*	5.19E-01	3.37E+02	1.55E+01	-2.87E+01
Contribution to hazardous waste disposed	kg	8.09E+04	7.28E+04	0*	0*	7.64E+03	4.82E+02	-4.23E+04
Contribution to non hazardous waste disposed	kg	6.91E+04	9.99E+03	0*	1.53E+02	5.88E+04	8.66E+01	-3.95E+03
Contribution to radioactive waste disposed	kg	1.83E+01	6.01E+00	3.75E-03	5.76E-03	1.23E+01	1.04E-02	-2.71E+00
Contribution to components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to materials for recycling	kg	7.89E+02	1.74E+02	0*	6.37E+01	0*	5.51E+02	0.00E+00
Contribution to materials for energy recovery	kg	7.61E-06	7.61E-06	0*	0*	0*	0*	0.00E+00
Contribution to exported energy	MJ	1.08E+02	4.09E+01	0*	6.21E+01	0*	5.34E+00	0.00E+00

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

Contribution to biogenic carbon content of the product kg of C 0.00E+00

Contribution to biogenic carbon content of the associated packaging kg of C 7.58E+01

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

** Net benefits and loads beyond the system boundaries stage (module D): potential for reuse, recovery and/or recycling, expressed as net benefits and impacts. **Not accounted in the Total.**

Life cycle assessment performed with EIME version v6.1, database version 2023-02 in compliance with ISO14044, EF 3.0 method is applied, for biogenic carbon storage, assessment methodology 0/0 is used

According to this environmental analysis, proportionality rules may be used to evaluate the impacts of other products of this range, ratios to apply can be provided upon request

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.

 **Extrapolated data**


400V UPS system		Galaxy VL UPS 200-500 kW				Referent product
kW rating		200	300	400	500	
Product information	Weight with Packaging (kg)	620	744	868	992	
Compulsory environmental indicators Total of Life Cycle Phases UPS in normal mode (double conversion)	Contribution to climate change (kg CO2 eq)	1.77E+05	2.60E+05	3.44E+05	4.33E+05	
	Contribution to Ozone depletion (kg CFC11 eq)	2.38E-03	3.07E-03	3.75E-03	4.46E-03	
	Contribution to Acidification (mol H+ eq)	1.03E+03	1.51E+03	1.99E+03	2.50E+03	
	Contribution to eutrophication, freshwater (kg PO43- eq)	6.76E-01	9.44E-01	1.21E+00	1.49E+00	
	Contribution to eutrophication marine (kg N eq)	1.17E+02	1.72E+02	2.26E+02	2.84E+02	
	Contribution to eutrophication, terrestrial (mol N eq)	1.71E+03	2.52E+03	3.33E+03	4.19E+03	
	Contribution to photochemical ozone formation - human health (kg COVNM eq)	3.79E+02	5.55E+02	7.32E+02	9.19E+02	
	Contribution to resource use, minerals and metals (kgSbeq)	1.63E+00	1.96E+00	2.30E+00	2.63E+00	
	Total use of primary energy (MJ)	5.18E+06	7.69E+06	1.02E+07	1.29E+07	
	Contribution to water use (m3 eq)	9.99E+03	1.37E+04	1.74E+04	2.13E+04	
Environmental indicators Total of Life Cycle Phases UPS in eConversion mode	Contribution to climate change (kg CO2 eq)	6.89E+04	9.88E+04	1.29E+05	1.59E+05	

480V UPS system		Galaxy VL UPS 200-500 kW				Referent product
kW rating		200	300	400	500	
Product information	Weight with Packaging (kg)	620	744	868	992	
Compulsory environmental indicators Total of Life Cycle Phases UPS in normal mode (double conversion)	Contribution to climate change (kg CO2 eq)	4.21E+05	1.70E+05	2.49E+05	3.35E+05	
	Contribution to Ozone depletion (kg CFC11 eq)	4.41E-03	2.35E-03	3.02E-03	3.71E-03	
	Contribution to Acidification (mol H+ eq)	2.43E+03	9.88E+02	1.45E+03	1.94E+03	
	Contribution to eutrophication, freshwater (kg PO43- eq)	1.46E+00	6.57E-01	9.13E-01	1.19E+00	
	Contribution to eutrophication marine (kg N eq)	2.77E+02	1.12E+02	1.64E+02	2.20E+02	
	Contribution to eutrophication, terrestrial (mol N eq)	4.08E+03	1.64E+03	2.41E+03	3.24E+03	
	Contribution to photochemical ozone formation - human health (kg COVNM eq)	8.95E+02	3.65E+02	5.32E+02	7.12E+02	
	Contribution to resource use, minerals and metals (kgSbeq)	2.63E+00	1.63E+00	1.96E+00	2.29E+00	
	Total use of primary energy (MJ)	1.25E+07	4.98E+06	7.35E+06	9.91E+06	
	Contribution to water use (m3 eq)	2.09E+04	9.75E+03	1.33E+04	1.71E+04	
Environmental indicators Total of Life Cycle Phases UPS in eConversion mode	Contribution to climate change (kg CO2 eq)	7.36E+04	1.06E+05	1.37E+05	1.62E+05	

 **Other Additional information**

Operating the Galaxy VL in eConversion mode results in significantly reduced environmental impact, in particular Carbon emissions (up to 63% reduction) compared to operation in Double Conversion mode. This is mainly due to an improved energy efficiency in eConversion of 98.9% (average) compared to an efficiency of 96.9% (average) in Double Conversion mode.

For details about eConversion, consult the Schneider-Electric eConversion page: <https://www.se.com/ww/en/work/products/product-launch/econversion-high-efficiency-ups-mode/>

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Verifier accreditation N°	VH08	Information and reference documents	www.pep-ecopassport.org
Date of issue	03-2024	Validity period	5 years
Independent verification of the declaration and data, in compliance with ISO 14025 : 2006			
Internal External X			
<p>The PCR review was conducted by a panel of experts chaired by Julie Orgelet (DDemain)</p> <p>PEPs are compliant with XP C08-100-1:2016 and EN 50693:2019 or NF E38-500 :2022</p> <p>The components of the present PEP may not be compared with components from any other program.</p> <p>Document complies with ISO 14025:2006 "Environmental labels and declarations. Type III environmental declarations"</p>			

Schneider Electric Industries SAS

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