



93PS three phase UPS with Internal Battery

Representative product	93PS-40(40)-4x9Ah: 93PS 40 kW (40 kW frame) UPS with 2 Power Module and 4 Internal Batteries [BD04AD306A01000000] Product Category: Uninterruptible Power Supply (UPS)																									
Description of the product	The Eaton 93PS has been developed to meet current and future needs for efficiency, resilience and scalability. It provides two operational modes- online Double Conversion Mode (DCM) and Energy Efficiency Mode (ESS). It is the most efficient UPS in its class, offering the lowest Total Cost of Ownership due to its advanced algorithms and energy saving features. It is available in small and large frame sizes and 8-40 kW. Moreover, with internal battery models, the 93PS offers the possibility to have either central or separate battery configurations.																									
Homogeneous Environmental Families Covered	The PEP concerns product offerings from 93PS 40 kW UPS with Internal Battery series as mentioned below: <table><tr><td>93PS-8(40)-2x9Ah</td><td>93PS 8 kW (40 kW frame) UPS with 1 Power Module and 2 Internal Batteries</td></tr><tr><td>93PS-8(40)-3x9Ah</td><td>93PS 8 kW (40 kW frame) UPS with 1 Power Module and 3 Internal Batteries</td></tr><tr><td>93PS-8(40)-4x9Ah</td><td>93PS 8 kW (40 kW frame) UPS with 1 Power Module and 4 Internal Batteries</td></tr><tr><td>93PS-10(40)-2x9Ah</td><td>93PS 10 kW (40 kW frame) UPS with 1 Power Module and 2 Internal Batteries</td></tr><tr><td>93PS-10(40)-3x9Ah</td><td>93PS 10 kW (40 kW frame) UPS with 1 Power Module and 3 Internal Batteries</td></tr><tr><td>93PS-10(40)-4x9Ah</td><td>93PS 10 kW (40 kW frame) UPS with 1 Power Module and 4 Internal Batteries</td></tr><tr><td>93PS-15(40)-2x9Ah</td><td>93PS 15 kW (40 kW frame) UPS with 1 Power Module and 2 Internal Batteries</td></tr><tr><td>93PS-15(40)-3x9Ah</td><td>93PS 15 kW (40 kW frame) UPS with 1 Power Module and 3 Internal Batteries</td></tr><tr><td>93PS-15(40)-4x9Ah</td><td>93PS 15 kW (40 kW frame) UPS with 1 Power Module and 4 Internal Batteries</td></tr><tr><td>93PS-20(40)-2x9Ah</td><td>93PS 20 kW (40 kW frame) UPS with 1 Power Module and 2 Internal Batteries</td></tr><tr><td>93PS-20(40)-3x9Ah</td><td>93PS 20 kW (40 kW frame) UPS with 1 Power Module and 3 Internal Batteries</td></tr><tr><td>93PS-20(40)-4x9Ah</td><td>93PS 20 kW (40 kW frame) UPS with 1 Power Module and 4 Internal Batteries</td></tr></table>		93PS-8(40)-2x9Ah	93PS 8 kW (40 kW frame) UPS with 1 Power Module and 2 Internal Batteries	93PS-8(40)-3x9Ah	93PS 8 kW (40 kW frame) UPS with 1 Power Module and 3 Internal Batteries	93PS-8(40)-4x9Ah	93PS 8 kW (40 kW frame) UPS with 1 Power Module and 4 Internal Batteries	93PS-10(40)-2x9Ah	93PS 10 kW (40 kW frame) UPS with 1 Power Module and 2 Internal Batteries	93PS-10(40)-3x9Ah	93PS 10 kW (40 kW frame) UPS with 1 Power Module and 3 Internal Batteries	93PS-10(40)-4x9Ah	93PS 10 kW (40 kW frame) UPS with 1 Power Module and 4 Internal Batteries	93PS-15(40)-2x9Ah	93PS 15 kW (40 kW frame) UPS with 1 Power Module and 2 Internal Batteries	93PS-15(40)-3x9Ah	93PS 15 kW (40 kW frame) UPS with 1 Power Module and 3 Internal Batteries	93PS-15(40)-4x9Ah	93PS 15 kW (40 kW frame) UPS with 1 Power Module and 4 Internal Batteries	93PS-20(40)-2x9Ah	93PS 20 kW (40 kW frame) UPS with 1 Power Module and 2 Internal Batteries	93PS-20(40)-3x9Ah	93PS 20 kW (40 kW frame) UPS with 1 Power Module and 3 Internal Batteries	93PS-20(40)-4x9Ah	93PS 20 kW (40 kW frame) UPS with 1 Power Module and 4 Internal Batteries
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Functional unit	To protect the load of 40,000 Watts against input power failure for 15 years and provide a backup time of 8 minutes in case of a power outage.
Company information	Eaton Power Quality Oy Koskelontie 25, 02920 Espoo, Finland Email: productstewardship-es@eaton.com

Constituent Materials			
Reference product mass	5.46E+02 kg (with packaging)		
Materials	Category PEP Material	Mass (kg)	Percentage (%)
Battery (Lead-acid)	Others	326.4	59.8%
Steel	Metals	131.7	24.1%
Acrylonitrile Butadiene Styrene	Plastics	20.7	3.8%
Cable (high current)	Others	9.1	1.7%
Wood	Others	6.9	1.3%
Heatsink (Aluminum)	Others	6.2	1.1%
Electronic board (Power)	Others	3.6	0.7%
Polyamide	Plastics	2.8	0.5%
Other metals	Metals	2.5	0.5%
Cardboard	Others	2.2	0.4%
Polybutylene Terephthalate	Plastics	2.0	0.4%
Paper	Others	1.3	0.2%
Polycarbonate	Plastics	0.7	0.1%
Copper	Metals	0.7	0.1%
Polyethylene	Plastics	0.6	0.1%
Miscellaneous	Others	28.5	5.2%
Total		5.46E02	100%

Substance Assessment
<p>The representative product is compliant with the EU-RoHS Directive (2011/65/EU) by application of exemptions and the product contains lead (Pb), Perfluorobutanesulfonic acid (PFBS) and its salts and 1,2-dimethoxyethane which are listed as Substance-of-Very-High-Concern (SVHC) on the Candidate List of the EU-REACH Regulation (1907/2006/EC).</p>

Additional Environmental Information	
Manufacturing	The reference product is assembled at an Eaton plant holding management system certifications according to ISO 14001 standards.
Distribution	Eaton is committed to minimizing weight and volume of product and its associated packaging material with focus to optimize transport efficiency.
Installation	During installation of the product only standard tools are needed, which do not require any additional energy source and no waste other than the obsolete product packaging is generated during this step.
Use	<p>Though maintenance requirements of the UPS have been minimized, the current Product Specific Rule applicable to this kind of product requires the replacement of parts including– manufacturing, delivery to the site of use and waste collection & treatment of replaced components of:</p> <ul style="list-style-type: none"> ○ DC and AC capacitors of filtering (2 times) ○ Fans (3 times) ○ Power supply PCBs (2 times) ○ Batteries (2 times)
End of life	The recyclability rate of the overall product is 66% if properly dismantled prior to further processing at a recycling facility. The rate is calculated 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					
The calculation of the environmental impacts is the result of the Product's Life Cycle Analysis in accordance with ISO 14040/44, covering the entire lifecycle, i.e. "Cradle-to-Grave". System modelling was carried out using the commercial LCA software EIME v5.9.4 with database version CODDE-2022-01.					
Manufacturing Phase	Product is assembled and prepared for shipment at the Eaton facility, Eaton Power Quality Oy Espoo, Finland. Energy model used: Finland				
Distribution Phase	Distribution of the product in its packaging from the Eaton's last logistics platform to the installation place in Europe is considered as per PCR rules.				
Installation Phase	Product is installed in any European country. Hence, packaging waste treatment is considered in this phase considering average values. Energy model used: Europe				
Use Phase	Reference lifetime: 15 years Energy model used: Europe Usage profile: The product operates in two modes. It has an average energy efficiency of 96.0% in Double Conversion mode and 98.5% in Energy Saver System mode. The methodology for the calculation of the electricity consumption is based on Uninterruptible Power Supplies (UPS) PSR with load profile -				
	Operating loads	25%	50%	75%	100%
	Proportion of Time spent at	0.25	0.50	0.25	0.00
	Total energy losses are calculated to be equal to 103.149 MWh in Double Conversion mode and 36.792 MWh in Energy Saver System mode over 15 years. Maintenance is required for Battery, AC/DC capacitors, Fans & PCB as per the maintenance frequency given in PSR.				
End of life Phase	Product disposed according to European WEEE guidelines. Energy model used: Europe				

Environmental Impact considering Double Conversion mode

Environmental Impact Indicators: Mandatory

Environmental impact indicators	Units	Total	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use* (B2)	Use* (B6)	End of Life (C1-C4)
Resource use, minerals and metals (ADPe)	kg Sb eq.	6.30E+00	1.69E+00	5.13E-06	1.48E-07	4.08E+00	3.06E-03	5.25E-01
Resource use, fossils (ADPf)	MJ	1.23E+06	6.52E+04	1.82E+03	2.91E+01	5.64E+04	1.08E+06	3.39E+04
Acidification Potential (AP)	mole of H+ eq.	3.12E+02	2.77E+01	8.25E-01	1.38E-02	3.63E+01	2.41E+02	5.88E+00
Eutrophication, freshwater (Epf)	kg P eq.	1.81E-01	2.13E-02	4.89E-05	6.43E-05	3.51E-02	1.16E-01	8.83E-03
Eutrophication marine (Epm)	kg N eq.	3.79E+01	3.63E+00	3.87E-01	8.13E-03	5.57E+00	2.74E+01	9.21E-01
Eutrophication, terrestrial (Ept)	mol N eq.	5.13E+02	4.00E+01	4.24E+00	3.45E-02	4.81E+01	4.12E+02	8.77E+00
Climate change-Total (GWP)	kg CO ₂ eq.	5.06E+04	3.58E+03	1.30E+02	1.12E+01	3.77E+03	4.23E+04	8.12E+02
Climate change-Biogenic (GWPb)	kg CO ₂ eq.	1.00E+02	3.77E+01	0.00E+00	1.15E-01	4.49E+00	5.64E+01	1.66E+00
Climate change-Fossil (GWPf)	kg CO ₂ eq.	5.05E+04	3.54E+03	1.30E+02	1.11E+01	3.76E+03	4.22E+04	8.10E+02
Climate change-Land use and land use change (GWPlu)	kg CO ₂ eq.	5.21E-04	7.84E-06	0.00E+00	-8.99E-08	3.41E-04	0.00E+00	1.73E-04
Ozone depletion (ODP)	kg CFC-11 eq.	1.94E-03	6.12E-04	2.00E-07	1.93E-07	1.02E-03	1.81E-04	1.23E-04
Photochemical ozone formation - human health (POCP)	kg NMVOC eq.	1.21E+02	1.28E+01	1.07E+00	1.11E-02	1.62E+01	8.80E+01	2.89E+00
Water use (WU)	m ³ eq.	2.95E+04	1.20E+03	4.95E-01	1.74E+00	2.36E+04	1.50E+03	3.20E+03

*Note: B2 (Maintenance) and B6 (energy requirements during the use stage) are considered. Other sub modules in the use stage (B1, B3-B5, B7) are equal to zero. So, it is not listed in the result tables.

Inventory Flow Indicators: Mandatory

Inventory flow indicators	Units	Total	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use* (B2)	Use* (B6)	End of Life (C1-C4)
Use of renewable primary energy excluding renewable primary energy used as raw material	MJ	2.09E+05	1.41E+03	2.42E+00	2.21E+00	5.00E+02	2.07E+05	1.05E+02
Use of renewable primary energy resources used as raw material	MJ	4.76E+02	4.76E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renewable primary energy resources	MJ	2.09E+05	1.88E+03	2.42E+00	2.21E+00	5.00E+02	2.07E+05	1.05E+02
Use of non-renewable primary energy excluding non-renewable primary energy used as raw material	MJ	1.23E+06	6.27E+04	1.82E+03	2.91E+01	5.47E+04	1.08E+06	3.39E+04
Use of non-renewable primary energy resources used as raw material	MJ	4.15E+03	2.51E+03	0.00E+00	0.00E+00	1.64E+03	0.00E+00	0.00E+00
Total use of non-renewable primary energy resources	MJ	1.23E+06	6.52E+04	1.82E+03	2.91E+01	5.64E+04	1.08E+06	3.39E+04
Use of secondary material	kg	3.78E+00	3.78E+00	0.00E+00	0.00E+00	1.70E-03	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of freshwater	m ³	7.60E+02	2.78E+01	1.15E-02	4.06E-02	6.13E+02	3.48E+01	8.41E+01
Components for reuse	kg	2.75E-04	2.75E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	7.62E+02	1.59E+01	0.00E+00	1.52E+00	3.92E+02	0.00E+00	3.53E+02
Materials for energy recovery	kg	3.66E+01	4.08E+00	0.00E+00	3.71E+00	2.84E+01	0.00E+00	4.20E-01
Exported Energy	MJ	4.14E+00	0.00E+00	0.00E+00	3.06E+00	0.00E+00	0.00E+00	1.08E+00
Hazardous waste disposed	kg	1.00E+04	5.71E+03	0.00E+00	3.43E-02	2.55E+03	7.90E+02	9.47E+02

Inventory flow indicators	Units	Total	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use* (B2)	Use* (B6)	End of Life (C1-C4)
Non-hazardous waste disposed	kg	8.87E+03	1.36E+03	4.57E+00	1.73E+01	1.17E+03	6.08E+03	2.42E+02
Radioactive waste disposed	kg	1.89E+00	3.40E-01	3.26E-03	1.29E-03	1.99E-01	1.27E+00	6.93E-02
Biogenic carbon content of the product	kg C	3.93E-01	3.93E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biogenic carbon content of the associated packaging	kg C	3.42E+00	3.42E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*Note: B2 (Maintenance) and B6 (energy requirements during the use stage) are considered. Other sub modules in the use stage (B1, B3-B5, B7) are equal to zero. So, it is not listed in the result tables.

Environmental Impact Indicators: Optional

Environmental impact indicators	Units	Total	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use* (B2)	Use* (B6)	End of Life (C1-C4)
Ecotoxicity, freshwater	CTUe	2.12E+06	1.08E+05	8.77E+01	5.98E+01	1.09E+06	4.55E+05	4.68E+05
Human toxicity, cancer	CTUh-c	6.17E-04	5.82E-04	2.29E-09	9.49E-07	2.16E-05	4.93E-06	7.53E-06
Human toxicity, non-cancer	CTUh-nc	6.74E-03	1.66E-03	2.48E-07	3.46E-08	4.31E-03	1.96E-04	5.75E-04
Ionising radiation, human health	kBq U235 eq.	2.30E+05	6.18E+04	3.17E-01	1.78E-01	1.04E+05	6.29E+04	8.15E+02
Land use	--	1.98E+03	3.74E+01	0.00E+00	1.17E+00	7.87E+02	8.41E+02	3.16E+02
EF-particulate Matter	Disease occurrence	2.34E-03	2.44E-04	6.71E-06	8.24E-08	1.89E-04	1.87E-03	3.23E-05
Total Primary Energy	MJ	1.44E+06	6.71E+04	1.82E+03	3.14E+01	5.69E+04	1.28E+06	3.40E+04

*Note: B2 (Maintenance) and B6 (energy requirements during the use stage) are considered. Other sub modules in the use stage (B1, B3-B5, B7) are equal to zero. So, it is not listed in the result tables.

Environmental Impact considering Energy Saver System (ESS) mode

Environmental Impact Indicators: Mandatory

Environmental impact indicators	Units	Total	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use* (B2)	Use* (B6)	End of Life (C1-C4)
Resource use, minerals and metals (ADPe)	kg Sb eq.	6.30E+00	1.69E+00	5.13E-06	1.48E-07	4.08E+00	1.09E-03	5.25E-01
Resource use, fossils (ADPf)	MJ	5.42E+05	6.52E+04	1.82E+03	2.91E+01	5.64E+04	3.84E+05	3.39E+04
Acidification Potential (AP)	mole of H ⁺ eq.	1.57E+02	2.77E+01	8.25E-01	1.38E-02	3.63E+01	8.60E+01	5.88E+00
Eutrophication, freshwater (Epf)	kg P eq.	1.07E-01	2.13E-02	4.89E-05	6.43E-05	3.51E-02	4.13E-02	8.83E-03
Eutrophication marine (Epm)	kg N eq.	2.03E+01	3.63E+00	3.87E-01	8.13E-03	5.57E+00	9.78E+00	9.21E-01
Eutrophication, terrestrial (Ept)	mol N eq.	2.48E+02	4.00E+01	4.24E+00	3.45E-02	4.81E+01	1.47E+02	8.77E+00
Climate change-Total (GWP)	kg CO ₂ eq.	2.34E+04	3.58E+03	1.30E+02	1.12E+01	3.76E+03	1.51E+04	8.12E+02
Climate change-Biogenic (GWPb)	kg CO ₂ eq.	6.41E+01	3.77E+01	0.00E+00	1.15E-01	4.49E+00	2.01E+01	1.66E+00
Climate change-Fossil (GWPf)	kg CO ₂ eq.	2.33E+04	3.54E+03	1.30E+02	1.11E+01	3.76E+03	1.51E+04	8.10E+02
Climate change-Land use and land use change (GWPlu)	kg CO ₂ eq.	5.21E-04	7.84E-06	0.00E+00	-8.99E-08	3.41E-04	0.00E+00	1.73E-04
Ozone depletion (ODP)	kg CFC-11 eq.	1.82E-03	6.12E-04	2.00E-07	1.93E-07	1.02E-03	6.45E-05	1.23E-04
Photochemical ozone formation - human health (POCP)	kg NMVOC eq.	6.43E+01	1.28E+01	1.07E+00	1.11E-02	1.62E+01	3.14E+01	2.89E+00
Water use (WU)	m ³ eq.	2.85E+04	1.20E+03	4.95E-01	1.74E+00	2.36E+04	5.34E+02	3.20E+03

*Note: B2 (Maintenance) and B6 (energy requirements during the use stage) are considered. Other sub modules in the use stage (B1, B3-B5, B7) are equal to zero. So, it is not listed in the result tables.

Inventory Flow Indicators: Mandatory

Inventory flow indicators	Units	Total	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use* (B2)	Use* (B6)	End of Life (C1-C4)
Use of renewable primary energy excluding renewable primary energy used as raw material	MJ	7.58E+04	1.41E+03	2.42E+00	2.21E+00	4.96E+02	7.38E+04	1.05E+02
Use of renewable primary energy resources used as raw material	MJ	4.76E+02	4.76E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renewable primary energy resources	MJ	7.63E+04	1.88E+03	2.42E+00	2.21E+00	4.96E+02	7.38E+04	1.05E+02
Use of non-renewable primary energy excluding non-renewable primary energy used as raw material	MJ	5.37E+05	6.27E+04	1.82E+03	2.91E+01	5.47E+04	3.84E+05	3.39E+04
Use of non-renewable primary energy resources used as raw material	MJ	4.15E+03	2.51E+03	0.00E+00	0.00E+00	1.64E+03	0.00E+00	0.00E+00
Total use of non-renewable primary energy resources	MJ	5.42E+05	6.52E+04	1.82E+03	2.91E+01	5.64E+04	3.84E+05	3.39E+04
Use of secondary material	Kg	3.78E+00	3.78E+00	0.00E+00	0.00E+00	1.70E-03	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of freshwater	m ³	7.38E+02	2.78E+01	1.15E-02	4.06E-02	6.13E+02	1.24E+01	8.41E+01
Components for reuse	Kg	2.75E-04	2.75E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	Kg	7.62E+02	1.59E+01	0.00E+00	1.52E+00	3.92E+02	0.00E+00	3.53E+02
Materials for energy recovery	Kg	3.66E+01	4.08E+00	0.00E+00	3.71E+00	2.84E+01	0.00E+00	4.20E-01
Exported Energy	MJ	4.14E+00	0.00E+00	0.00E+00	3.06E+00	0.00E+00	0.00E+00	1.08E+00
Hazardous waste disposed	Kg	9.49E+03	5.71E+03	0.00E+00	3.43E-02	2.55E+03	2.82E+02	9.47E+02

Inventory flow indicators	Units	Total	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use* (B2)	Use* (B6)	End of Life (C1-C4)
Non-hazardous waste disposed	Kg	4.96E+03	1.36E+03	4.57E+00	1.73E+01	1.17E+03	2.17E+03	2.42E+02
Radioactive waste disposed	Kg	1.07E+00	3.40E-01	3.26E-03	1.29E-03	1.99E-01	4.54E-01	6.93E-02
Biogenic carbon content of the product	Kg C	3.93E-01	3.93E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biogenic carbon content of the associated packaging	Kg C	3.42E+00	3.42E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*Note: B2 (Maintenance) and B6 (energy requirements during the use stage) are considered. Other sub modules in the use stage (B1, B3-B5, B7) are equal to zero. So, it is not listed in the result tables.

Environmental Impact Indicators: Optional

Environmental impact indicators	Units	Total	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use* (B2)	Use* (B6)	End of Life (C1-C4)
Ecotoxicity, freshwater	CTUe	1.83E+06	1.08E+05	8.77E+01	5.98E+01	1.09E+06	1.62E+05	4.68E+05
Human toxicity, cancer	CTUh-c	6.14E-04	5.82E-04	2.29E-09	9.49E-07	2.16E-05	1.76E-06	7.53E-06
Human toxicity, non-cancer	CTUh-nc	6.62E-03	1.66E-03	2.48E-07	3.46E-08	4.31E-03	6.98E-05	5.75E-04
Ionising radiation, human health	kBq U235 eq.	1.89E+05	6.18E+04	3.17E-01	1.78E-01	1.04E+05	2.24E+04	8.15E+02
Land use	--	1.44E+03	3.74E+01	0.00E+00	1.17E+00	7.87E+02	3.00E+02	3.16E+02
EF-particulate Matter	Disease occurrence	1.14E-03	2.44E-04	6.71E-06	8.24E-08	1.89E-04	6.68E-04	3.23E-05
Total Primary Energy	MJ	6.18E+05	6.71E+04	1.82E+03	3.14E+01	5.69E+04	4.58E+05	3.40E+04

*Note: B2 (Maintenance) and B6 (energy requirements during the use stage) are considered. Other sub modules in the use stage (B1, B3-B5, B7) are equal to zero. So, it is not listed in the result tables.

Conversion factors for Manufacturing, Distribution, Installation, Use (B2 only) and End-of-Life Phase for both DC and ESS modes:

To evaluate the environmental impact of other product covered by this PEP for Manufacturing, Distribution, Installation, Use (B2) and End-of-Life phases, apply the following conversion factors to the Environmental Impact shown below:

Product	Phases	ADPe	ADPf	AP	Ep _f	Epm	Ept	GWP	GWP _b	GWP _f	GWP _{lu}	ODP	POCP	WU
		(kg Sb eq.)	(MJ)	(mol H+ eq.)	(kg P eq.)	(kg N eq.)	(mol N eq.)	(kg CO ₂ eq.)	(kg CO ₂ eq.)	(kg CO ₂ eq.)	(kg CO ₂ eq.)	(kg CFC-11)	(kg NMVOC eq.)	(m ³ eq.)
93PS-40(40)-4x9Ah (Reference product)	Manufacturing	1.0												
	Distribution													
	Installation													
	Use (B2)*													
	End of Life													
93PS-8(40)-2x9Ah,	Manufacturing	0.5	0.7	0.7	0.8	0.7	0.7	0.7	1.0	0.7	0.9	0.6	0.7	0.7
93PS-10(40)-2x9Ah,	Distribution	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.0	0.6	1.0	0.6	0.6	0.6
93PS-15(40)-2x9Ah,	Installation	1.0												
93PS-20(40)-2x9Ah	Use (B2)*	0.5												
	End of Life	0.5	0.8	0.6	0.7	0.6	0.6	0.7	0.8	0.7	0.5	0.5	0.7	0.7
93PS-8(40)-3x9Ah,	Manufacturing	0.7	0.8	0.8	0.9	0.8	0.8	0.8	1.0	0.8	0.9	0.8	0.8	0.8
93PS-10(40)-3x9Ah,	Distribution	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.0	0.8	1.0	0.8	0.8	0.8
93PS-15(40)-3x9Ah,	Installation	1.0												
93PS-20(40)-3x9Ah	Use (B2)*	0.7	0.7	0.7	0.6	0.7	0.7	0.7	0.5	0.7	0.7	0.7	0.7	0.5
	End of Life	0.8	0.9	0.8	0.8	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.8	0.7
93PS-8(40)-4x9Ah,	Manufacturing	1.0	0.8	0.9	1.0	0.9	0.9	0.9	1.0	0.9	0.9	0.9	0.9	0.9
93PS-10(40)-4x9Ah,	Distribution	1.0												
93PS-15(40)-4x9Ah,	Installation	1.0												
93PS-20(40)-4x9Ah	Use (B2)*	1.0	0.8	0.9	0.7	0.8	0.9	0.8	0.5	0.8	1.0	0.9	0.9	0.5
	End of Life	1.0	1.0	1.0	0.9	0.9	1.0	1.0	0.9	1.0	1.0	1.0	1.0	0.7
93PS-8+8(40)-2x9Ah,	Manufacturing	0.6	0.9	0.8	0.9	0.8	0.8	0.9	1.0	0.9	1.0	0.8	0.8	0.8
93PS-10+10(40)-2x9Ah,	Distribution	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0	0.7	1.0	0.7	0.7	0.7
93PS-15+15(40)-2x9Ah,	Installation	1.0												
93PS-20+20(40)-2x9Ah	Use (B2)*	0.5	0.7	0.6	0.8	0.7	0.6	0.7	1.0	0.7	0.5	0.6	0.6	1.0
	End of Life	0.5	0.9	0.6	0.9	0.7	0.7	0.7	0.9	0.7	0.5	0.5	0.7	1.0
93PS-30(40)-3x9Ah,	Manufacturing	0.8	0.9	0.9	0.9	0.9	0.9	0.9	1.0	0.9	1.0	0.9	0.9	0.9
93PS-40(40)-3x9Ah	Distribution	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.0	0.8	1.0	0.8	0.8	0.8
	Installation	1.0												
	Use (B2)*	0.8	0.8	0.8	0.9	0.8	0.8	0.8	1.0	0.8	0.8	0.8	0.8	1.0
	End of Life	0.8	0.9	0.8	0.9	0.9	0.8	0.9	1.0	0.9	0.8	0.8	0.8	1.0
93PS-8+8(40)-4x9Ah,	Manufacturing	1.0												
93PS-10+10(40)-4x9Ah,	Distribution													
93PS-15+15(40)-4x9Ah,	Installation													
93PS-20+20(40)-4x9Ah,	Use (B2)*													
93PS-30(40)-4x9Ah	End of Life													

* **Note:** B2 (Maintenance) and B6 (energy requirements during the use stage) are considered. Other sub modules in the use stage (B1, B3-B5, B7) are equal to zero. So, it is not listed in the result tables.

Conversion factors for Use (B6 only):

To evaluate all the environmental impact of other product covered by this PEP for Use (B6) phase, apply the conversion factors to the Environmental Impact shown below:

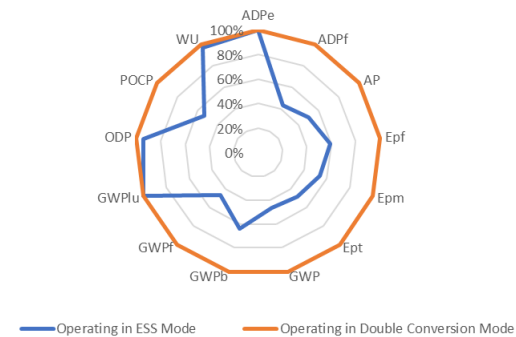
Product	Use (B6)* Double Conversion mode	Use (B6)* Energy Saver System mode
93PS-40(40)-4x9Ah, (Reference Product)	1	1
93PS-8(40)-2x9Ah, 93PS-8(40)-3x9Ah, 93PS-8(40)-4x9Ah, 93PS-8+8(40)-2x9Ah, 93PS-8+8(40)-4x9Ah	0.2	0.3
93PS-10(40)-2x9Ah, 93PS-10(40)-3x9Ah, 93PS-10(40)-4x9Ah, 93PS-10+10(40)-2x9Ah, 93PS-10+10(40)-4x9Ah	0.3	0.3
93PS-15(40)-2x9Ah, 93PS-15(40)-3x9Ah, 93PS-15(40)-4x9Ah, 93PS-15+15(40)-2x9Ah, 93PS-15+15(40)-4x9Ah	0.4	0.5
93PS-20(40)-2x9Ah, 93PS-20(40)-3x9Ah, 93PS-20(40)-4x9Ah, 93PS-20+20(40)-2x9Ah, 93PS-20+20(40)-4x9Ah	0.5	0.6
93PS-30(40)-3x9Ah, 93PS-30(40)-4x9Ah	0.8	0.8
93PS-40(40)-3x9Ah	1.0	1.0

* **Note:** B2 (Maintenance) and B6 (energy requirements during the use stage) are considered. Other sub modules in the use stage (B1, B3-B5, B7) are equal to zero. So, it is not listed in the result tables.

Additional Information


Operating the Eaton 93PS UPS in Energy Saver System mode results in a significantly reduced environmental impact (up to 56 % reduction) compared to operation in Double Conversion Mode (as shown in radar chart to the right). This is mainly due to an improved energy efficiency in ESS of 98.5% (average) compared to an efficiency of 96.0% (average) in Double Conversion mode.

93PS UPS 40 kW Impacts: Double Conversion Vs Energy Saver Mode



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Verifier accreditation N°	VH47	Supplemented by	PSR-0010-ed1.1-EN-2015 10 16
Date of issue	06-2023	Information and reference documents	www.pep-ecopassport.org
		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 Julie ORGELET (DDemain)			
PEPs are compliant with XP C08-100-1:2016 or EN 50693:2019			
The components of the present PEP may not be compared with components from any other program.			
Document in compliance with ISO 14025: 2010 « Environmental labels and declarations. Type III environmental declarations »			