



Eaton 9SX 1-3kVA Rack2U UPS

Representative product	Eaton 9SX 3000i Rack2U (9SX3000IR) Product Category: Uninterruptible Power Systems (UPS) with energy storage system			
Description of the product	Eaton 9SX 1-3kVA Rack2U UPS delivers on-line double conversion protection in convenient 2U form factor. Eaton 9SX 1-3kVA Rack2U UPS is available in different power ratings: 1000VA, 1500VA, 2000VA and 3000VA with inbuilt lead acid battery and available extension battery modules (EBM). It offers high availability, flexibility and advanced protection for infrastructure, industrial, medical, IT, networking, storage, and telecom.			
Product specifications	Power VA & W: 3000VA (2700W) UPS Configuration: Single phase, operating in normal mode/ High Efficiency Mode. UPS performance classification: UPS - VFI $\leq$ 10kW (Online double conversion) Technology of the energy storage system: Valve regulated lead acid batteries (VRLA) Product dimensions (D X W X H): 608 x 438 x 86.5 mm Mass of the equipment: 30.53 kg Power factor: 0.9 Reference service life (Years): 8			
Homogeneous Environmental Families Covered	The PEP concerns product offerings from Eaton 9SX 1-3kVA Rack2U UPS series as mentioned below:			
	Product family	Model	Description	UPS Rating (W)
	9SX 1-3kVA Rack2U UPS	9SX3000IR (Reference)	Eaton 9SX 3000i Rack2U	2700
		9SX1000IR	Eaton 9SX 1000i Rack2U	900
		9SX1000IR + 1*9SXEBM36R	Eaton 9SX 1000i Rack2U + 1 * Eaton 9SX EBM 36V Rack2U	900
		9SX1000IR + 2*9SXEBM36R	Eaton 9SX 1000i Rack2U + 2 * Eaton 9SX EBM 36V Rack2U	900
		9SX1000IR + 3*9SXEBM36R	Eaton 9SX 1000i Rack2U + 3 * Eaton 9SX EBM 36V Rack2U	900
		9SX1000IR + 4*9SXEBM36R	Eaton 9SX 1000i Rack2U + 4 * Eaton 9SX EBM 36V Rack2U	900
		9SX1500IR	Eaton 9SX 1500i Rack2U	1350
		9SX1500IR + 1*9SXEBM48R	Eaton 9SX 1500i Rack2U + 1 * Eaton 9SX EBM 48V Rack2U	1350
				Backup time at full load (mins)
				3.5
				6
				29
				53
				80
				108
				5.5
				28

	9SX1500IR + 2*9SXEBM48R	Eaton 9SX 1500i Rack2U + 2 * Eaton 9SX EBM 48V Rack2U	1350	51
	9SX1500IR + 3*9SXEBM48R	Eaton 9SX 1500i Rack2U + 3 * Eaton 9SX EBM 48V Rack2U	1350	77
	9SX1500IR + 4*9SXEBM48R	Eaton 9SX 1500i Rack2U + 4 * Eaton 9SX EBM 48V Rack2U	1350	104
	9SX2000IR	Eaton 9SX 2000i Rack2U	1800	4.5
	9SX2000IR + 1*9SXEBM72R	Eaton 9SX 2000i Rack2U + 1 * Eaton 9SX EBM 72V Rack2U	1800	30
	9SX2000IR + 2*9SXEBM72R	Eaton 9SX 2000i Rack2U + 2 * Eaton 9SX EBM 72V Rack2U	1800	58
	9SX2000IR + 3*9SXEBM72R	Eaton 9SX 2000i Rack2U + 3 * Eaton 9SX EBM 72V Rack2U	1800	88
	9SX2000IR + 4*9SXEBM72R	Eaton 9SX 2000i Rack2U + 4 * Eaton 9SX EBM 72V Rack2U	1800	118
	9SX3000IR + 1*9SXEBM72R	Eaton 9SX 3000i Rack2U + 1 * Eaton 9SX EBM 72V Rack2U	2700	20
	9SX3000IR + 2*9SXEBM72R	Eaton 9SX 3000i Rack2U + 2 * Eaton 9SX EBM 72V Rack2U	2700	36
	9SX3000IR + 3*9SXEBM72R	Eaton 9SX 3000i Rack2U + 3 * Eaton 9SX EBM 72V Rack2U	2700	54
	9SX3000IR + 4*9SXEBM72R	Eaton 9SX 3000i Rack2U + 4 * Eaton 9SX EBM 72V Rack2U	2700	73
Functional unit	"To ensure the supply of power without interruption to equipment with load of 100 watts for a RSL of 1 years, including a backup time capacity of 5 minutes during power shortages."			
Declared unit	"To ensure the supply of power without interruption to equipment with load of 2700 watts for a RSL of 8 years, including a backup time capacity of 3.5 minutes (at full load condition) during power shortages."			
Company information	Eaton Industries France SAS; Email: productstewardship-es@eaton.com			

Constituent Materials of			
Reference Product:	3.66E+01 kg (with packaging)		
Materials	Category PEP Material	Mass (kg)	Percentage (%)
Other	Lead Acid Battery	1.52E+01	41.50%
Metals	Steel	7.44E+00	20.34%
Other	Electronics	6.10E+00	16.68%
Other	Cardboard	2.68E+00	7.33%
Other	Wooden Pallet	1.92E+00	5.26%
Other	Kraft Liner	7.35E-01	2.01%
Plastics	Polyurethane	6.56E-01	1.79%
Metals	Copper	3.52E-01	0.96%
Plastics	Polyethylene Terephthalate	3.16E-01	0.86%
Plastics	Acrylonitrile butadiene styrene	1.62E-01	0.44%
Plastics	Polyvinyl chloride	1.38E-01	0.38%
Plastics	Low-density polyethylene	1.34E-01	0.37%
Metals	Stainless Steel	1.33E-01	0.36%
Metals	Nickel	1.17E-01	0.32%
Metals	Zinc	1.17E-01	0.32%
Other	Miscellaneous	3.89E-01	1.06%
Total		3.66E+01	100.0%

Substance Assessment	
The representative product is compliant with the EU-RoHS Directive (2011/65/EU) by application of exemptions and the product contains lead, lead monoxide and tetrabromobisphenol-A, which are listed as Substance-of-Very-High-Concern (SVHC) on the Candidate List of the EU-REACH Regulation (1907/2006/EC).	

Additional Environmental Information	
Manufacturing	The reference product is assembled at an Eaton plant (LianZheng Electronic (ShenZhen) Co., Ltd.) 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	Product consumes energy during useful life which is considered to be 8 years (as per actual designed life). During the reference service life of product, product requires maintenance one replacement of the battery.
End of life	The Overall Recyclability of product is equal to 63.64% based on the method described in IEC/TR 62635, Edition 1.0/2012-10 "Guidelines for end-of-life information provided by manufacturers and recyclers and for recyclability rate calculation of electrical and electronic equipment".

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" including the following life cycle phases: production, distribution, installation, use and end of life. System modelling was carried out using the commercial LCA software EIME v6.3.0.1 with database version CODDE-2024-04 - updated on 2024-06-04. Indicators Set used: PEF EF 3.1 (Compliance: PEP ed.4, EN15804+A2) v2.0 and PSR-0010-ed2.0-EN 2023 06 01	
Manufacturing Phase	Product is assembled and prepared for shipment at the Eaton facility (Lianzheng Electronic (Shenzhen) Co., Ltd.) Upstream transportation of the product from manufacturing plant location to the Eaton warehouse location in Rheinbach is considered in the manufacturing stage. Energy model used: China & Europe
Distribution Phase	Customer location is assumed to be Europe. Intracontinental transport of 3500 km by lorry is considered as transport scenario from Eaton location to end user for this study based on actual data.
Installation Phase	Product is installed in any European country. Hence, packaging waste treatment is considered in this phase considering country specific statistics as per PSR. Energy model used: Europe
Use Phase	Reference lifetime: 8 years Energy model used: Europe. Usage profile: It has an average energy efficiency of 96.998% in High Efficiency Mode and 91.46% in Normal mode. The methodology for the calculation of the electricity consumption is based on Uninterruptible Power Supplies (UPS) PSR.

	Operating loads	25%	50%	75%	100%	
	Proportion of Time spent at	0.00	0.30	0.40	0.30	
	Total energy losses are calculated to be equal to 12.82 kWh over the 8 years for Normal Mode. Products require maintenance one replacement of the battery during its use life.					
End of life Phase	Product disposed according to European WEEE guidelines. Energy model used: Europe					
Module-D	Module D is calculated according to PCR-ed4-EN-2021 09 06 based on the materials recycled and the modelled end-of-life scenario. It expresses the net benefits and loads beyond the boundaries of the system and are not to be included in the life cycle totals.					

All environmental impacts are calculated for the declared unit, then data should be divided by the Factor calculated with below formulas to get functional unit result.

Factor for use stage energy consumption B6:

$$\frac{\text{Declared Unit Power (2700 W)} * \text{Declared Unit Lifetime (8 year)}}{100 \text{ W} * 1 \text{ year}} = 216$$

Factor for all other stages (excepted B6 of use stage):

$$\frac{\text{Declared Unit Power (2700 W)} * \text{Declared Unit Lifetime (8 year)} * \text{Declared Unit Backuptime (3.5 min)}}{100 \text{ W} * 1 \text{ year} * 5 \text{ min}} = 151.2$$

Environmental Impact for Functional Unit

Environmental Impact Indicators: Mandatory

Mandatory environmental impact indicators	Units	Sum	A1-A3 - Manufacturing	A4 - Distribution	A5 - Installation	B1-B7 – Use*	C1-C4 - End of life	B2 - Maintenance	B6 - Operational energy use	D - Benefits and loads beyond the system boundaries
Climate change - total	kg CO2 eq.	2.32E+01	2.19E+00	5.43E-02	5.48E-02	2.07E+01	1.96E-01	9.91E-01	1.97E+01	-3.09E-01
Climate change - fossil fuels	kg CO2 eq.	2.32E+01	2.23E+00	5.43E-02	2.86E-02	2.07E+01	1.92E-01	9.88E-01	1.97E+01	-3.40E-01
Climate change - biogenics	kg CO2 eq.	3.26E-02	-3.67E-02	2.22E-07	2.61E-02	3.86E-02	4.56E-03	2.29E-03	3.63E-02	3.06E-02
Climate change - land use and land use transformation	kg CO2 eq.	9.24E-07	2.84E-07	8.22E-08	1.53E-09	5.41E-07	1.53E-08	5.41E-07	0.00E+00	0.00E+00
Ozone depletion	kg eq. CFC-11	6.07E-07	2.80E-07	6.59E-10	5.45E-10	2.97E-07	2.90E-08	2.01E-07	9.55E-08	-7.68E-08
Acidification (AP)	mole of H+ eq.	1.30E-01	1.77E-02	8.58E-05	1.10E-04	1.09E-01	2.31E-03	8.30E-03	1.01E-01	-3.87E-03
Freshwater eutrophication	kg P eq.	6.31E-05	4.95E-06	2.03E-07	3.47E-07	5.52E-05	2.44E-06	3.27E-06	5.19E-05	-1.31E-04
Marine aquatic eutrophication	kg of N eq.	1.72E-02	2.24E-03	1.56E-05	3.83E-05	1.38E-02	1.08E-03	1.49E-03	1.23E-02	-4.58E-04
Terrestrial eutrophication	mole of N eq.	2.34E-01	2.48E-02	1.71E-04	3.25E-04	2.07E-01	1.57E-03	9.43E-03	1.98E-01	-5.06E-03
Photochemical ozone formation	kg of NMVOC eq.	5.09E-02	7.99E-03	5.52E-05	7.21E-05	4.21E-02	6.17E-04	3.41E-03	3.87E-02	-1.77E-03
Depletion of abiotic resources - elements	kg eq. Sb	1.15E-03	6.15E-04	1.94E-08	1.76E-09	5.31E-04	1.79E-07	5.24E-04	6.97E-06	-3.83E-04
Depletion of abiotic resources - fossil fuels	MJ	5.57E+02	3.55E+01	9.65E-01	3.80E-01	5.17E+02	3.66E+00	1.91E+01	4.98E+02	-6.04E+00
Water scarcity	m3 of eq.. deprivation worldwide	4.67E+01	8.65E-01	1.96E-03	2.03E-03	1.37E+01	3.22E+01	1.21E+01	1.51E+00	-3.39E+01

***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	Sum	A1-A3 - Manufacturing	A4 - Distribution	A5 - Installation	B1-B7 – Use*	C1-C4 - End of life	B2 - Maintenance	B6 - Operational energy use	D - Benefits and loads beyond the system boundaries
Use of renewable primary energy, excluding renewable primary energy resources used as raw materials	MJ	1.33E+02	1.05E+00	3.04E-03	1.03E-01	1.32E+02	1.45E-01	1.93E-01	1.32E+02	-4.83E-02
Use of renewable primary energy resources used as raw materials	MJ	6.81E-01	6.81E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.10E-01
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.34E+02	1.73E+00	3.04E-03	1.03E-01	1.32E+02	1.45E-01	1.93E-01	1.32E+02	-4.58E-01
Use of non-renewable primary energy, excluding non-renewable primary energy resources used as raw materials	MJ	5.56E+02	3.46E+01	9.65E-01	3.80E-01	5.16E+02	3.66E+00	1.87E+01	4.98E+02	-5.80E+00
Use of non-renewable primary energy resources used as raw materials	MJ	1.24E+00	8.84E-01	0.00E+00	0.00E+00	3.60E-01	0.00E+00	3.60E-01	0.00E+00	-2.32E-01
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	5.57E+02	3.55E+01	9.65E-01	3.80E-01	5.17E+02	3.66E+00	1.91E+01	4.98E+02	-6.04E+00
Use of secondary materials	kg	1.59E-06	1.23E-06	0.00E+00	0.00E+00	3.52E-07	0.00E+00	3.52E-07	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	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	0.00E+00	0.00E+00
Net use of fresh water	m3	1.25E+00	2.01E-02	4.55E-05	5.11E-05	3.55E-01	8.74E-01	3.19E-01	3.55E-02	-8.09E-01
Hazardous waste disposed of	kg	3.93E+00	2.17E+00	2.27E-04	6.60E-03	1.42E+00	3.35E-01	5.58E-01	8.64E-01	-7.00E-03
Non-hazardous waste disposed of	kg	4.32E+00	8.37E-01	5.04E-03	7.37E-03	3.45E+00	1.85E-02	1.21E-01	3.33E+00	-1.95E-02
Radioactive waste disposed of	kg	1.20E-03	3.29E-04	3.99E-06	1.77E-06	8.50E-04	1.42E-05	8.61E-05	7.64E-04	-1.18E-05

Inventory flow indicators	Units	Sum	A1-A3 - Manufacturing	A4 - Distribution	A5 - Installation	B1-B7 - Use*	C1-C4 - End of life	B2 - Maintenance	B6 - Operational energy use	D - Benefits and loads beyond the system boundaries
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	6.09E-03	9.85E-08	0.00E+00	6.09E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	9.24E-10	5.59E-10	0.00E+00	0.00E+00	3.64E-10	0.00E+00	3.64E-10	0.00E+00	0.00E+00
Exported energy	MJ by energy vector	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biogenic carbon content of the product	kg of C.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biogenic carbon content of the associated packaging	kg of C.	1.48E-02	1.48E-02	0.00E+00	0.00E+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

Optional Environmental impact indicators	Units	Sum	A1-A3 - Manufacturing	A4 - Distribution	A5 - Installation	B1-B7 - Use	C1-C4 - End of life	B2 - Maintenance	B6 - Operational energy use	D - Benefits and loads beyond the system boundaries
Emission of fine particles	incidence of diseases	9.77E-07	1.11E-07	7.36E-10	7.05E-10	8.55E-07	8.83E-09	4.24E-08	8.13E-07	-2.23E-08
Ionizing radiation, human health	kBq of U235 eq.	1.29E+02	5.12E+01	1.92E-03	7.43E-03	7.74E+01	4.38E-02	4.91E+01	2.83E+01	-7.65E-02
Ecotoxicity, fresh water	CTUe	8.13E+01	2.21E+01	1.58E+00	4.98E-01	5.45E+01	2.62E+00	1.72E+01	3.72E+01	-2.68E+00
Human toxicity, cancer effects	CTUh	1.76E-07	1.95E-08	1.06E-11	2.70E-09	8.02E-08	7.40E-08	7.77E-08	2.48E-09	-6.05E-09
Human toxicity, non-cancer effects	CTUh	1.10E-06	5.22E-07	2.03E-10	1.21E-10	5.61E-07	1.24E-08	5.02E-07	5.92E-08	-4.07E-07
Impacts related to land use/soil quality	-	1.06E+00	6.31E-02	2.32E-04	1.86E-04	7.07E-01	2.89E-01	1.61E-01	5.46E-01	-4.20E-01
Total use of primary energy during the life cycle	MJ	6.91E+02	3.72E+01	9.68E-01	4.83E-01	6.49E+02	3.80E+00	1.93E+01	6.29E+02	-6.49E+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 considering for Declared Unit

Environmental Impact Indicators: Mandatory

Mandatory environmental impact indicators	Units	Sum	A1-A3 - Manufacturing	A4 - Distribution	A5 - Installation	B1-B7 - Use*	C1-C4 - End of life	B2 - Maintenance	B6 - Operational energy use	D - Benefits and loads beyond the system boundaries
Climate change - total	kg CO2 eq.	4.79E+03	3.32E+02	8.22E+00	8.28E+00	4.41E+03	2.97E+01	1.50E+02	4.26E+03	-4.68E+01
Climate change - fossil fuels	kg CO2 eq.	4.78E+03	3.37E+02	8.22E+00	4.33E+00	4.40E+03	2.90E+01	1.49E+02	4.25E+03	-5.14E+01
Climate change - biogenics	kg CO2 eq.	7.28E+00	-5.55E+00	3.36E-05	3.95E+00	8.18E+00	6.90E-01	3.47E-01	7.84E+00	4.63E+00
Climate change - land use and land use transformation	kg CO2 eq.	1.40E-04	4.30E-05	1.24E-05	2.31E-07	8.18E-05	2.31E-06	8.18E-05	0.00E+00	0.00E+00
Ozone depletion	kg eq. CFC-11	9.80E-05	4.23E-05	9.96E-08	8.24E-08	5.11E-05	4.38E-06	3.04E-05	2.06E-05	-1.16E-05
Acidification (AP)	mole of H+ eq.	2.61E+01	2.68E+00	1.30E-02	1.67E-02	2.31E+01	3.49E-01	1.25E+00	2.18E+01	-5.86E-01
Freshwater eutrophication	kg P eq.	1.29E-02	7.48E-04	3.07E-05	5.24E-05	1.17E-02	3.69E-04	4.94E-04	1.12E-02	-1.99E-02
Marine aquatic eutrophication	kg of N eq.	3.39E+00	3.38E-01	2.35E-03	5.79E-03	2.88E+00	1.63E-01	2.26E-01	2.66E+00	-6.93E-02
Terrestrial eutrophication	mole of N eq.	4.82E+01	3.74E+00	2.58E-02	4.92E-02	4.41E+01	2.37E-01	1.43E+00	4.27E+01	-7.65E-01
Photochemical ozone formation	kg of NMVOC eq.	1.02E+01	1.21E+00	8.35E-03	1.09E-02	8.88E+00	9.32E-02	5.16E-01	8.36E+00	-2.67E-01
Depletion of abiotic resources - elements	kg eq. Sb	1.74E-01	9.29E-02	2.93E-06	2.66E-07	8.07E-02	2.70E-05	7.92E-02	1.51E-03	-5.79E-02
Depletion of abiotic resources - fossil fuels	MJ	1.17E+05	5.37E+03	1.46E+02	5.74E+01	1.10E+05	5.53E+02	2.88E+03	1.07E+05	-9.13E+02
Water scarcity	m3 of eq.. deprivation worldwide	7.16E+03	1.31E+02	2.96E-01	3.07E-01	2.16E+03	4.87E+03	1.84E+03	3.26E+02	-5.13E+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	Sum	A1-A3 - Manufacturing	A4 - Distribution	A5 - Installation	B1-B7 - Use	C1-C4 - End of life	B2 - Maintenance	B6 - Operational energy use	D - Benefits and loads beyond the system boundaries
Use of renewable primary energy, excluding renewable primary energy resources used as raw materials	MJ	2.87E+04	1.59E+02	4.60E-01	1.56E+01	2.85E+04	2.19E+01	2.91E+01	2.84E+04	-7.30E+00
Use of renewable primary energy resources used as raw materials	MJ	1.03E+02	1.03E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.20E+01
Total use of renewable primary energy resources (primary energy and primary energy resources)	MJ	2.88E+04	2.62E+02	4.60E-01	1.56E+01	2.85E+04	2.19E+01	2.91E+01	2.84E+04	-6.93E+01

Inventory flow indicators	Units	Sum	A1-A3 - Manufacturing	A4 - Distribution	A5 - Installation	B1-B7 - Use	C1-C4 - End of life	B2 - Maintenance	B6 - Operational energy use	D - Benefits and loads beyond the system boundaries
used as raw materials)										
Use of non-renewable primary energy, excluding non-renewable primary energy resources used as raw materials	MJ	1.16E+05	5.23E+03	1.46E+02	5.74E+01	1.10E+05	5.53E+02	2.83E+03	1.07E+05	-8.77E+02
Use of non-renewable primary energy resources used as raw materials	MJ	1.88E+02	1.34E+02	0.00E+00	0.00E+00	5.45E+01	0.00E+00	5.45E+01	0.00E+00	-3.51E+01
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.17E+05	5.37E+03	1.46E+02	5.74E+01	1.10E+05	5.53E+02	2.88E+03	1.07E+05	-9.13E+02
Use of secondary materials	kg	2.40E-04	1.87E-04	0.00E+00	0.00E+00	5.32E-05	0.00E+00	5.32E-05	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	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	0.00E+00	0.00E+00
Net use of fresh water	m3	1.91E+02	3.05E+00	6.89E-03	7.73E-03	5.59E+01	1.32E+02	4.83E+01	7.67E+00	-1.22E+02
Hazardous waste disposed of	kg	6.51E+02	3.28E+02	3.44E-02	9.98E-01	2.71E+02	5.06E+01	8.43E+01	1.87E+02	-1.06E+00
Non-hazardous waste disposed of	kg	8.69E+02	1.26E+02	7.62E-01	1.11E+00	7.37E+02	2.79E+00	1.83E+01	7.19E+02	-2.94E+00
Radioactive waste disposed of	kg	2.31E-01	4.98E-02	6.04E-04	2.68E-04	1.78E-01	2.15E-03	1.30E-02	1.65E-01	-1.78E-03
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	9.21E-01	1.49E-05	0.00E+00	9.21E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	1.40E-07	8.46E-08	0.00E+00	0.00E+00	5.51E-08	0.00E+00	5.51E-08	0.00E+00	0.00E+00
Exported energy	MJ by energy vector	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biogenic carbon content of the product	kg of C.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biogenic carbon content of the associated packaging	kg of C.	2.23E+00	2.23E+00	0.00E+00	0.00E+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

Optional Environmental impact indicators	Units	Sum	A1-A3 - Manufacturing	A4 - Distribution	A5 - Installation	B1-B7 - Use	C1-C4 - End of life	B2 - Maintenance	B6 - Operational energy use	D - Benefits and loads beyond the system boundaries
Emission of fine particles	incidence of diseases	2.00E-04	1.68E-05	1.11E-07	1.07E-07	1.82E-04	1.34E-06	6.41E-06	1.76E-04	-3.37E-06
Ionizing radiation, human health	kBq of U235 eq.	2.13E+04	7.74E+03	2.91E-01	1.12E+00	1.35E+04	6.63E+00	7.42E+03	6.12E+03	-1.16E+01
Ecotoxicity, fresh water	CTUe	1.47E+04	3.34E+03	2.40E+02	7.52E+01	1.06E+04	3.97E+02	2.60E+03	8.05E+03	-4.04E+02
Human toxicity, cancer effects	CTUh	2.68E-05	2.95E-06	1.61E-09	4.08E-07	1.23E-05	1.12E-05	1.17E-05	5.35E-07	-9.14E-07
Human toxicity, non-cancer effects	CTUh	1.69E-04	7.89E-05	3.07E-08	1.83E-08	8.87E-05	1.88E-06	7.59E-05	1.28E-05	-6.15E-05
Impacts related to land use/soil quality	-	1.96E+02	9.54E+00	3.51E-02	2.81E-02	1.42E+02	4.37E+01	2.43E+01	1.18E+02	-6.35E+01
Total use of primary energy during the life cycle	MJ	1.45E+05	5.63E+03	1.46E+02	7.30E+01	1.39E+05	5.75E+02	2.91E+03	1.36E+05	-9.82E+02

***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.

Other Products covered in homogeneous family of Eaton 9SX 1-3kVA Rack2U UPS and the relevant data are shown in the below table:

Product family	Model	Description	UPS Rating (VA)	Power factor (pf)	UPS Rating (W)	Backup time at full load (mins)	UPS efficiency (Normal Mode) [%]	Use phase losses (Normal Mode) (kWh)	Product Net weight (Actual) kg	Packaging weight (Actual) kg
Eaton 9SX 1-3kVA Rack2U UPS	9SX3000IR (Reference)	Eaton 9SX 3000i Rack2U	3000	0.9	2700	3.5	91.460	12082	30.53	6.18
	9SX1000IR	Eaton 9SX 1000i Rack2U	1000	0.9	900	6	87.770	5641	18.52	4.17
	9SX1000IR + 1*9SXEBM36R	Eaton 9SX 1000i Rack2U + 1 * Eaton 9SX EBM 36V Rack2U	1000	0.9	900	29	87.770	5641	42.81	7.94
	9SX1000IR + 2*9SXEBM36R	Eaton 9SX 1000i Rack2U + 2 * Eaton 9SX EBM 36V Rack2U	1000	0.9	900	53	87.770	5641	67.1	11.71
	9SX1000IR + 3*9SXEBM36R	Eaton 9SX 1000i Rack2U + 3 * Eaton 9SX EBM 36V Rack2U	1000	0.9	900	80	87.770	5641	91.39	15.48
	9SX1000IR + 4*9SXEBM36R	Eaton 9SX 1000i Rack2U + 4 * Eaton 9SX EBM 36V Rack2U	1000	0.9	900	108	87.770	5641	115.68	19.25
	9SX1500IR	Eaton 9SX 1500i Rack2U	1500	0.9	1350	5.5	90.700	6487	21.51	4.12
	9SX1500IR + 1*9SXEBM48R	Eaton 9SX 1500i Rack2U + 1 * Eaton 9SX EBM 48V Rack2U	1500	0.9	1350	28	90.700	6487	50.35	8.22
	9SX1500IR + 2*9SXEBM48R	Eaton 9SX 1500i Rack2U + 2 * Eaton 9SX EBM 48V Rack2U	1500	0.9	1350	51	90.700	6487	79.19	12.32
	9SX1500IR + 3*9SXEBM48R	Eaton 9SX 1500i Rack2U + 3 * Eaton 9SX EBM 48V Rack2U	1500	0.9	1350	77	90.700	6487	108.03	16.42
	9SX1500IR + 4*9SXEBM48R	Eaton 9SX 1500i Rack2U + 4 * Eaton 9SX EBM 48V Rack2U	1500	0.9	1350	104	90.700	6487	136.87	20.52
	9SX2000IR	Eaton 9SX 2000i Rack2U	2000	0.9	1800	4.5	91.010	8424	29.16	5.59
	9SX2000IR + 1*9SXEBM72R	Eaton 9SX 2000i Rack2U + 1 * Eaton 9SX EBM 72V Rack2U	2000	0.9	1800	30	91.010	8424	71.47	12.04
	9SX2000IR + 2*9SXEBM72R	Eaton 9SX 2000i Rack2U + 2 * Eaton 9SX EBM 72V Rack2U	2000	0.9	1800	58	91.010	8424	113.78	18.49
	9SX2000IR + 3*9SXEBM72R	Eaton 9SX 2000i Rack2U + 3 * Eaton 9SX EBM 72V Rack2U	2000	0.9	1800	88	91.010	8424	156.09	24.94

Product family	Model	Description	UPS Rating (VA)	Power factor (pf)	UPS Rating (W)	Backup time at full load (mins)	UPS efficiency (Normal Mode) [%]	Use phase losses (Normal Mode) (kWh)	Product Net weight (Actual) kg	Packaging weight (Actual) kg
	9SX2000IR + 4*9SXEBM72R	Eaton 9SX 2000i Rack2U + 4 * Eaton 9SX EBM 72V Rack2U	2000	0.9	1800	118	91.010	8424	198.4	31.39
	9SX3000IR + 1*9SXEBM72R	Eaton 9SX 3000i Rack2U + 1 * Eaton 9SX EBM 72V Rack2U	3000	0.9	2700	20	91.460	12082	72.84	12.63
	9SX3000IR + 2*9SXEBM72R	Eaton 9SX 3000i Rack2U + 2 * Eaton 9SX EBM 72V Rack2U	3000	0.9	2700	36	91.460	12082	115.15	19.08
	9SX3000IR + 3*9SXEBM72R	Eaton 9SX 3000i Rack2U + 3 * Eaton 9SX EBM 72V Rack2U	3000	0.9	2700	54	91.460	12082	157.46	25.53
	9SX3000IR + 4*9SXEBM72R	Eaton 9SX 3000i Rack2U + 4 * Eaton 9SX EBM 72V Rack2U	3000	0.9	2700	73	91.460	12082	199.77	31.98

To evaluate the environmental impact of other product covered by this PEP, apply the following conversion factors to the Environmental Impact shown above. The extrapolation factors are calculated based on the PSR0010 section 3.6.:

Conversion Factors for Manufacturing, Distribution, Installation, Use and End-of-Life Phase for all environmental impacts for declared unit impacts:

Model	A1-A3 Manufacturing	A4 Distribution	A5 Installation	B2 Maintenance	B6 Use Phase (Normal Mode)	B6 Use Phase (High Efficiency)	C1-C4 End-of Life	D - Module
9SX3000IR (Reference Declared Unit)	1.00	1.00	1.00	1.00	1.00	0.34	1.00	1.00
9SX1000IR	0.62	0.62	0.67	0.62	0.47	0.24	0.61	0.62
9SX1000IR + 1*9SXEBM36R	1.38	1.38	1.28	1.38	0.47	0.24	1.40	1.38
9SX1000IR + 2*9SXEBM36R	2.15	2.15	1.89	2.15	0.47	0.24	2.20	2.15
9SX1000IR + 3*9SXEBM36R	2.91	2.91	2.50	2.91	0.47	0.24	2.99	2.91
9SX1000IR + 4*9SXEBM36R	3.68	3.68	3.11	3.68	0.47	0.22	3.79	3.68
9SX1500IR	0.70	0.70	0.67	0.70	0.54	0.22	0.70	0.70
9SX1500IR + 1*9SXEBM48R	1.60	1.60	1.33	1.60	0.54	0.22	1.65	1.60
9SX1500IR + 2*9SXEBM48R	2.49	2.49	1.99	2.49	0.54	0.22	2.59	2.49
9SX1500IR + 3*9SXEBM48R	3.39	3.39	2.66	3.39	0.54	0.22	3.54	3.39
9SX1500IR + 4*9SXEBM48R	4.29	4.29	3.32	4.29	0.54	0.22	4.48	4.29
9SX2000IR	0.95	0.95	0.90	0.95	0.70	0.30	0.96	0.95
9SX2000IR + 1*9SXEBM72R	2.27	2.27	1.95	2.27	0.70	0.30	2.34	2.27
9SX2000IR + 2*9SXEBM72R	3.60	3.60	2.99	3.60	0.70	0.30	3.73	3.60
9SX2000IR + 3*9SXEBM72R	4.93	4.93	4.04	4.93	0.70	0.30	5.11	4.93
9SX2000IR + 4*9SXEBM72R	6.26	6.26	5.08	6.26	0.70	0.30	6.50	6.26
9SX3000IR + 1*9SXEBM72R	2.33	2.33	2.04	2.33	1.00	0.34	2.39	2.33

Model	A1-A3 Manufacturing	A4 Distribution	A5 Installation	B2 Maintenance	B6 Use Phase (Normal Mode)	B6 Use Phase (High Efficiency)	C1-C4 End-of Life	D - Module
9SX3000IR + 2*9SXEBM72R	3.66	3.66	3.09	3.66	1.00	0.34	3.77	3.66
9SX3000IR + 3*9SXEBM72R	4.98	4.98	4.13	4.98	1.00	0.34	5.16	4.98
9SX3000IR + 4*9SXEBM72R	6.31	6.31	5.17	6.31	1.00	0.34	6.54	6.31

To get functional unit impacts, the declared unit results of specific part numbers need to be divided by the below factors calculated as per PSR0010 section 3.1.3:

Model	Factor for B6 Phase	Factor for other phases Except B6
9SX3000IR (Reference)	216	151.2
9SX1000IR	72	86.4
9SX1000IR + 1*9SXEBM36R	72	417.6
9SX1000IR + 2*9SXEBM36R	72	763.2
9SX1000IR + 3*9SXEBM36R	72	1152
9SX1000IR + 4*9SXEBM36R	72	1555.2
9SX1500IR	108	118.8
9SX1500IR + 1*9SXEBM48R	108	604.8
9SX1500IR + 2*9SXEBM48R	108	1101.6
9SX1500IR + 3*9SXEBM48R	108	1663.2
9SX1500IR + 4*9SXEBM48R	108	2246.4
9SX2000IR	144	129.6
9SX2000IR + 1*9SXEBM72R	144	864
9SX2000IR + 2*9SXEBM72R	144	1670.4
9SX2000IR + 3*9SXEBM72R	144	2534.4
9SX2000IR + 4*9SXEBM72R	144	3398.4
9SX3000IR + 1*9SXEBM72R	216	864
9SX3000IR + 2*9SXEBM72R	216	1555.2
9SX3000IR + 3*9SXEBM72R	216	2332.8
9SX3000IR + 4*9SXEBM72R	216	3153.6

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		Validity period	5 years
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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 and EN 50693:2019 The components of the present PEP may not be compared with components from any other program.			
Document complies with ISO 14025: 2006 « Environmental labels and declarations. Type III environmental declarations »			