



Eaton 5PX 1-3kVA Gen2 UPS

Representative product	Eaton 5PX 3000i RT3U G2 (5PX3000IRT3UG2) Product Category: Uninterruptible Power Systems (UPS) with energy storage system			
Description of the product	Eaton 5PX 1-3kVA Gen-2 tower/Rack is a compact footprint for users who needs continuous power supply like in clinics, hospitals, financial institutions, businesses or IT installations. Eaton 5PX 1-3kVA Gen2 is available in different power ratings: 1000VA, 1500VA, 2200VA and 3000VA with Valve Regulated Lead Acid (VRLA) batteries. These 5PX UPS's have Power Factor of 1 and comes with rotatable Graphical LCA Display			
Product specifications	Power VA & W: 3000VA (3000W) UPS Configuration: Basic Single UPS, Single phase, operating in normal mode. UPS performance classification: UPS - VI (Line-interactive) Technology of the energy storage system: Valve regulated lead acid batteries (VRLA) Product dimensions (D X W X H): 483 x 438 x 129 mm (19", 3U) Mass of the equipment: 33.58 kg (Actual net weight) Power factor: 1 Reference service life (Years): 8			
Homogeneous Environmental Families Covered	The PEP concerns product offerings from Eaton 5PX 1-3kVA Gen2 series as mentioned below:			
	Model	Description	UPS Rating (W)	Backup time at typical load (min)
	5PX3000IRT3UG2 (Reference)	Eaton 5PX 3000i RT3U G2	3000	3
	5PX1000IRT2UG2	Eaton 5PX 1000i RT2U G2	1000	6
	5PX1500IRT2UG2	Eaton 5PX 1500i RT2U G2	1500	5
	5PX1500IRTNG2	Eaton 5PX 1500i RT2U Netpack G2	1500	5
	5PX2200IRT2UG2	Eaton 5PX 2200i RT2U G2	2200	3.5
	5PX2200IRT3UG2	Eaton 5PX 2200i RT3U G2	2200	3.5
	5PX3000IRT2UG2	Eaton 5PX 3000i RT2U G2	3000	3
	5PX3000IRTNG2	Eaton 5PX 3000i RT2U Netpack G2	3000	3
	5PX1000IRT2UG2 + 5PXEBM48RT2UG2	Eaton 5PX 1000i RT2U G2 + Eaton 5PX EBM 48V RT2U G2	1000	36
	5PX1500IRT2UG2 + 5PXEBM48RT2UG2	Eaton 5PX 1500i RT2U G2 + Eaton 5PX EBM 48V RT2U G2	1500	25
	5PX2200IRT2UG2 + 5PXEBM72RT2UG2	Eaton 5PX 2200i RT2U G2 + Eaton 5PX EBM 72V RT2U G2	2200	23
5PX2200IRT3UG2 + 5PXEBM72RT3UG2	Eaton 5PX 2200i RT3U G2 + Eaton 5PX EBM 72V RT3U G2	2200	23	
5PX3000IRT2UG2 + 5PXEBM72RT2UG2	Eaton 5PX 3000i RT2U G2 + Eaton 5PX EBM 72V RT2U G2	3000	17	

	5PX3000IRT3UG2 + 5PXEBM72RT3UG2	Eaton 5PX 3000i RT3U G2 + Eaton 5PX EBM 72V RT3U G2	3000	17
	5PX1000IRT2UG2 + 4 * 5PXEBM48RT2UG2	Eaton 5PX 1000i RT2U G2 + 4 * Eaton 5PX EBM 48V RT2U G2	1000	148
	5PX1500IRT2UG2 + 4 * 5PXEBM48RT2UG2	Eaton 5PX 1500i RT2U G2 + 4 * Eaton 5PX EBM 48V RT2U G2	1500	95
	5PX2200IRT2UG2 + 4 * 5PXEBM72RT2UG2	Eaton 5PX 2200i RT2U G2 + 4 * Eaton 5PX EBM 72V RT2U G2	2200	95
	5PX2200IRT3UG2 + 4 * 5PXEBM72RT3UG2	Eaton 5PX 2200i RT3U G2 + 4 * Eaton 5PX EBM 72V RT3U G2	2200	95
	5PX3000IRT2UG2 + 4 * 5PXEBM72RT2UG2	Eaton 5PX 3000i RT2U G2 + 4 * Eaton 5PX EBM 72V RT2U G2	3000	67
	5PX3000IRT3UG2 + 4 * 5PXEBM72RT3UG2	Eaton 5PX 3000i RT3U G2 + 4 * Eaton 5PX EBM 72V RT3U G2	3000	67
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 3000 watts for a RSL of 8 years, including a backup time capacity of 3 minutes (at full load condition) during power shortages."			
Company information	Eaton Industries France SAS Email: productstewardship-es@eaton.com			

Constituent Materials			
Reference Product:	4.24E+01 kg (with packaging)		
PEP Material Category	Material	Mass (kg)	Percentage (%)
Other	Lead Acid Battery	1.50E+01	35.4%
Metals	Steel	9.83E+00	23.2%
Other	Electronics	7.16E+00	16.9%
Other	Cardboard	4.72E+00	11.1%
Other	Wood	2.57E+00	6.1%
Other	Printed Wire Board	5.39E-01	1.3%
Other	Paper	4.56E-01	1.1%
Plastics	Acrylonitrile butadiene styrene (ABS)	3.80E-01	0.9%
Metals	Copper	3.64E-01	0.9%
Plastics	Polyvinyl chloride (PVC)	2.98E-01	0.7%
Plastics	Polybutylene Terephthalate (PBT)	1.91E-01	0.5%
Plastics	Low Density Polyethylene (LDPE)	1.67E-01	0.4%
Plastics	High impact polystyrene (HIPS)	1.58E-01	0.4%
Plastics	Polyamide (PA)	9.05E-02	0.2%
Metals	Stainless Steel	6.96E-02	0.2%
Other	Miscellaneous	3.53E-01	0.8%
Total		4.24E+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 (Pb), cadmium 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 one time of DC filtering capacitors, AC filtering capacitors, Fans, Power supply PCB and battery replacement needs to be considered during its RSL.
End of life	Recyclability of product is equal to 61% 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											
<p>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.</p> <p>System modelling was carried out using the commercial LCA software EIME v6.3.1-3 with database version CODDE-2024-04 - updated on 2024-06-04.</p> <p>Indicators Set used: PEF EF 3.1 (Compliance: PEP ed.4, EN15804+A2) v2.0 and PSR-0010-ed2.0-EN 2023 06 01</p>											
Manufacturing Phase	<p>Product is assembled and prepared for shipment at the Eaton facility (Lianzheng Electronic (Shenzhen) Co., Ltd.)</p> <p>Upstream transportation of the product from manufacturing plant location to the Eaton warehouse location in Rheinbach is considered in the manufacturing stage.</p> <p>Energy model used: China & Europe</p>										
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 the PCR-4-ed4-EN-2021 09 06.										
Installation Phase	<p>Product is installed in any European country. Hence, packaging waste treatment is considered in this phase considering country specific statistics as per PSR.</p> <p>Energy model used: Europe</p>										
Use Phase	<p>Reference lifetime: 8 years</p> <p>Energy model used: Europe.</p> <p>Usage profile: It has an average energy efficiency of 98.35% in Normal mode. The methodology for the calculation of the electricity consumption is based on Uninterruptible Power Supplies (UPS) PSR.</p> <table border="1"> <tbody> <tr> <td>Operating loads</td> <td>25%</td> <td>50%</td> <td>75%</td> <td>100%</td> </tr> <tr> <td>Proportion of Time spent at</td> <td>0.00</td> <td>0.30</td> <td>0.40</td> <td>0.30</td> </tr> </tbody> </table> <p>Total energy losses are calculated to be equal to 2621 kWh over the 8 years for Normal Mode. Product requires one time of DC filtering capacitors, AC filtering capacitors, Fans, Power supply PCB and battery replacement needs to be considered during its RSL.</p>	Operating loads	25%	50%	75%	100%	Proportion of Time spent at	0.00	0.30	0.40	0.30
Operating loads	25%	50%	75%	100%							
Proportion of Time spent at	0.00	0.30	0.40	0.30							

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:

$$\frac{\text{Declared Unit Power (3000 W)} * \text{Declared Unit Lifetime (8 year)}}{100 W * 1 year} = \mathbf{240}$$

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

$$\frac{\text{Declared Unit Power (3000 W)} * \text{Declared Unit Lifetime (8 year)} * \text{Declared Unit Backuptime (3 min)}}{100 W * 1 year * 5 min} = \mathbf{144}$$

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.	6.78E+00	1.63E+00	6.60E-02	1.25E-01	4.74E+00	2.26E-01	8.86E-01	3.85E+00	-3.89E-01
Climate change - fossil fuels	kg CO2 eq.	6.74E+00	1.69E+00	6.60E-02	4.30E-02	4.73E+00	2.19E-01	8.85E-01	3.84E+00	-4.36E-01
Climate change - biogenics	kg CO2 eq.	3.79E-02	-5.94E-02	2.70E-07	8.15E-02	8.45E-03	7.35E-03	1.37E-03	7.08E-03	4.70E-02
Climate change - land use and land use transformation	kg CO2 eq.	1.31E-06	6.97E-07	9.98E-08	2.05E-09	4.98E-07	1.21E-08	4.98E-07	0.00E+00	0.00E+00
Ozone depletion	kg eq. CFC-11	4.49E-07	2.25E-07	8.00E-10	7.67E-10	1.90E-07	3.22E-08	1.72E-07	1.87E-08	-8.22E-08
Acidification (AP)	mole of H+ eq.	4.76E-02	1.62E-02	1.04E-04	1.45E-04	2.80E-02	3.14E-03	8.29E-03	1.97E-02	-4.83E-03
Freshwater eutrophication	kg P eq.	2.14E-05	4.20E-06	2.47E-07	5.56E-07	1.29E-05	3.49E-06	2.74E-06	1.01E-05	-1.82E-04
Marine aquatic eutrophication	kg of N eq.	7.56E-03	2.06E-03	1.89E-05	5.71E-05	3.77E-03	1.65E-03	1.37E-03	2.40E-03	-5.67E-04
Terrestrial eutrophication	mole of N eq.	7.49E-02	2.23E-02	2.07E-04	4.56E-04	5.01E-02	1.85E-03	1.15E-02	3.86E-02	-6.26E-03
Photochemical ozone formation	kg of NMVOC eq.	1.94E-02	7.17E-03	6.70E-05	1.03E-04	1.13E-02	7.32E-04	3.75E-03	7.56E-03	-2.17E-03
Depletion of abiotic resources - elements	kg eq. Sb	1.15E-03	6.47E-04	2.35E-08	2.88E-09	5.01E-04	2.28E-07	5.00E-04	1.36E-06	-3.99E-04
Depletion of abiotic resources - fossil fuels	MJ	1.48E+02	2.87E+01	1.17E+00	5.56E-01	1.14E+02	4.10E+00	1.65E+01	9.72E+01	-7.13E+00
Water scarcity	m3 of eq.. deprivation worldwide	5.47E+01	6.27E-01	2.38E-03	3.47E-03	6.65E+00	4.75E+01	6.35E+00	2.95E-01	-6.34E+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	2.68E+01	5.83E-01	3.69E-03	1.38E-01	2.59E+01	2.10E-01	1.97E-01	2.57E+01	-2.32E-01
Use of renewable primary energy resources used as raw materials	MJ	9.85E-01	9.85E-01	0.00E+00	0.00E+00	2.88E-04	0.00E+00	2.88E-04	0.00E+00	-6.31E-01
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	2.78E+01	1.57E+00	3.69E-03	1.38E-01	2.59E+01	2.10E-01	1.98E-01	2.57E+01	-8.63E-01
Use of non-renewable primary energy, excluding non-renewable primary energy resources used as raw materials	MJ	1.47E+02	2.79E+01	1.17E+00	5.56E-01	1.13E+02	4.10E+00	1.62E+01	9.72E+01	-6.96E+00
Use of non-renewable primary energy resources used as raw materials	MJ	1.16E+00	8.85E-01	0.00E+00	0.00E+00	2.78E-01	0.00E+00	2.78E-01	0.00E+00	-1.72E-01
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.48E+02	2.87E+01	1.17E+00	5.56E-01	1.14E+02	4.10E+00	1.65E+01	9.72E+01	-7.13E+00
Use of secondary materials	kg	4.05E-07	2.90E-07	0.00E+00	0.00E+00	1.15E-07	0.00E+00	1.15E-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	1.47E+00	1.46E-02	5.53E-05	2.65E-04	1.74E-01	1.28E+00	1.67E-01	6.93E-03	-1.59E+00
Hazardous waste disposed of	kg	2.40E+00	1.30E+00	2.76E-04	8.16E-03	8.35E-01	2.49E-01	6.67E-01	1.69E-01	-7.64E-03
Non-hazardous waste disposed of	kg	1.82E+00	1.02E+00	6.12E-03	1.18E-02	7.65E-01	1.87E-02	1.15E-01	6.50E-01	-2.81E-02
Radioactive waste disposed of	kg	3.59E-04	1.23E-04	4.85E-06	2.92E-06	2.14E-04	1.41E-05	6.51E-05	1.49E-04	-1.60E-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	3.52E-02	2.20E-07	0.00E+00	3.52E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	1.40E-09	1.27E-09	0.00E+00	0.00E+00	1.31E-10	0.00E+00	1.31E-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.	1.70E-02	1.70E-02	0.00E+00	0.00E+00	8.46E-06	0.00E+00	8.46E-06	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	3.09E-07	9.36E-08	8.94E-10	9.65E-10	2.02E-07	1.09E-08	4.36E-08	1.59E-07	-2.92E-08
Ionizing radiation, human health	kBq of U235 eq.	7.75E+01	3.72E+01	2.33E-03	1.82E-02	4.03E+01	4.53E-02	3.47E+01	5.53E+00	-5.91E-02
Ecotoxicity, fresh water	CTUe	5.09E+01	2.28E+01	1.92E+00	7.08E-01	2.24E+01	3.05E+00	1.51E+01	7.27E+00	-3.23E+00
Human toxicity, cancer effects	CTUh	1.87E-07	2.47E-08	1.29E-11	4.24E-09	8.10E-08	7.68E-08	8.05E-08	4.84E-10	-8.29E-09
Human toxicity, non-cancer effects	CTUh	1.04E-06	5.17E-07	2.47E-10	1.55E-10	5.01E-07	1.88E-08	4.90E-07	1.16E-08	-4.27E-07
Impacts related to land use/soil quality	-	6.20E-01	7.52E-03	2.82E-04	1.91E-04	1.97E-01	4.15E-01	9.04E-02	1.07E-01	-6.40E-01
Total use of primary energy during the life cycle	MJ	1.76E+02	3.03E+01	1.18E+00	6.94E-01	1.40E+02	4.31E+00	1.66E+01	1.23E+02	-7.99E+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.	1.35E+03	2.35E+02	9.50E+00	1.79E+01	1.05E+03	3.26E+01	1.28E+02	9.24E+02	-5.60E+01
Climate change - fossil fuels	kg CO2 eq.	1.34E+03	2.43E+02	9.50E+00	6.19E+00	1.05E+03	3.16E+01	1.27E+02	9.22E+02	-6.28E+01
Climate change - biogenics	kg CO2 eq.	6.14E+00	-8.56E+00	3.89E-05	1.17E+01	1.90E+00	1.06E+00	1.97E-01	1.70E+00	6.77E+00
Climate change - land use and land use transformation	kg CO2 eq.	1.88E-04	1.00E-04	1.44E-05	2.96E-07	7.17E-05	1.75E-06	7.17E-05	0.00E+00	0.00E+00
Ozone depletion	kg eq. CFC-11	6.64E-05	3.23E-05	1.15E-07	1.10E-07	2.92E-05	4.64E-06	2.47E-05	4.48E-06	-1.18E-05
Acidification (AP)	mole of H+ eq.	8.75E+00	2.33E+00	1.50E-02	2.09E-02	5.93E+00	4.52E-01	1.19E+00	4.73E+00	-6.96E-01
Freshwater eutrophication	kg P eq.	4.05E-03	6.05E-04	3.55E-05	8.01E-05	2.83E-03	5.03E-04	3.95E-04	2.43E-03	-2.62E-02
Marine aquatic eutrophication	kg of N eq.	1.32E+00	2.97E-01	2.72E-03	8.22E-03	7.74E-01	2.37E-01	1.97E-01	5.77E-01	-8.17E-02
Terrestrial eutrophication	mole of N eq.	1.45E+01	3.21E+00	2.99E-02	6.57E-02	1.09E+01	2.66E-01	1.65E+00	9.26E+00	-9.01E-01
Photochemical ozone formation	kg of NMVOC eq.	3.52E+00	1.03E+00	9.65E-03	1.48E-02	2.36E+00	1.05E-01	5.41E-01	1.81E+00	-3.13E-01
Depletion of abiotic resources - elements	kg eq. Sb	1.65E-01	9.31E-02	3.39E-06	4.15E-07	7.23E-02	3.29E-05	7.20E-02	3.27E-04	-5.75E-02
Depletion of abiotic resources - fossil fuels	MJ	3.07E+04	4.14E+03	1.69E+02	8.01E+01	2.57E+04	5.90E+02	2.37E+03	2.33E+04	-1.03E+03
Water scarcity	m3 of eq.. deprivation worldwide	7.91E+03	9.02E+01	3.42E-01	4.99E-01	9.86E+02	6.83E+03	9.15E+02	7.08E+01	-9.14E+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	6.33E+03	8.39E+01	5.32E-01	1.99E+01	6.20E+03	3.03E+01	2.84E+01	6.17E+03	-3.33E+01
Use of renewable primary energy resources used as raw materials	MJ	1.42E+02	1.42E+02	0.00E+00	0.00E+00	4.14E-02	0.00E+00	4.14E-02	0.00E+00	-9.09E+01
Total use of renewable primary energy resources (primary energy and primary energy resources)	MJ	6.48E+03	2.26E+02	5.32E-01	1.99E+01	6.20E+03	3.03E+01	2.85E+01	6.17E+03	-1.24E+02

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	3.05E+04	4.01E+03	1.69E+02	8.01E+01	2.56E+04	5.90E+02	2.33E+03	2.33E+04	-1.00E+03
Use of non-renewable primary energy resources used as raw materials	MJ	1.68E+02	1.28E+02	0.00E+00	0.00E+00	4.01E+01	0.00E+00	4.01E+01	0.00E+00	-2.48E+01
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	3.07E+04	4.14E+03	1.69E+02	8.01E+01	2.57E+04	5.90E+02	2.37E+03	2.33E+04	-1.03E+03
Use of secondary materials	kg	5.83E-05	4.17E-05	0.00E+00	0.00E+00	1.65E-05	0.00E+00	1.65E-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	2.13E+02	2.10E+00	7.97E-03	3.82E-02	2.57E+01	1.85E+02	2.41E+01	1.66E+00	-2.29E+02
Hazardous waste disposed of	kg	3.61E+02	1.88E+02	3.97E-02	1.17E+00	1.36E+02	3.59E+01	9.60E+01	4.05E+01	-1.10E+00
Non-hazardous waste disposed of	kg	3.25E+02	1.47E+02	8.82E-01	1.70E+00	1.72E+02	2.70E+00	1.65E+01	1.56E+02	-4.05E+00
Radioactive waste disposed of	kg	6.60E-02	1.77E-02	6.99E-04	4.21E-04	4.52E-02	2.02E-03	9.38E-03	3.58E-02	-2.30E-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	5.07E+00	3.17E-05	0.00E+00	5.07E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	2.02E-07	1.83E-07	0.00E+00	0.00E+00	1.89E-08	0.00E+00	1.89E-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.	2.45E+00	2.45E+00	0.00E+00	0.00E+00	1.22E-03	0.00E+00	1.22E-03	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	5.97E-05	1.35E-05	1.29E-07	1.39E-07	4.44E-05	1.57E-06	6.28E-06	3.81E-05	-4.21E-06
Ionizing radiation, human health	kBq of U235 eq.	1.17E+04	5.36E+03	3.36E-01	2.62E+00	6.33E+03	6.52E+00	5.00E+03	1.33E+03	-8.51E+00
Ecotoxicity, fresh water	CTUe	8.02E+03	3.28E+03	2.77E+02	1.02E+02	3.92E+03	4.40E+02	2.18E+03	1.75E+03	-4.66E+02
Human toxicity, cancer effects	CTUh	2.69E-05	3.56E-06	1.86E-09	6.11E-07	1.17E-05	1.11E-05	1.16E-05	1.16E-07	-1.19E-06
Human toxicity, non-cancer effects	CTUh	1.51E-04	7.45E-05	3.55E-08	2.24E-08	7.33E-05	2.71E-06	7.05E-05	2.78E-06	-6.16E-05
Impacts related to land use/soil quality	-	9.95E+01	1.08E+00	4.07E-02	2.75E-02	3.86E+01	5.97E+01	1.30E+01	2.56E+01	-9.21E+01
Total use of primary energy during the life cycle	MJ	3.71E+04	4.37E+03	1.69E+02	1.00E+02	3.19E+04	6.21E+02	2.40E+03	2.95E+04	-1.15E+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.

Other Products covered in homogeneous family of Eaton 5PX 3000i RT 3U G2 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 5PX 1-3kVA Gen2	5PX3000IRT3UG2 (Reference)	Eaton 5PX 3000i RT3U G2	3000	1	3000	3	98.349	2621	33.58	9.25
	5PX1000IRT2UG2	Eaton 5PX 1000i RT2U G2	1000	1	1000	6	98.077	971	22.17	5.02
	5PX1500IRT2UG2	Eaton 5PX 1500i RT2U G2	1500	1	1500	5	98.434	1206	25.39	4.74
	5PX1500IRTNG2	Eaton 5PX 1500i RT2U Netpack G2	1500	1	1500	5	98.434	1206	25.39	4.74
	5PX2200IRT2UG2	Eaton 5PX 2200i RT2U G2	2200	1	2200	3.5	98.337	1887	30.69	7.19
	5PX2200IRT3UG2	Eaton 5PX 2200i RT3U G2	2200	1	2200	3.5	98.337	1887	30.12	7.38
	5PX3000IRT2UG2	Eaton 5PX 3000i RT2U G2	3000	1	3000	3	98.349	2621	33.83	6.92
	5PX3000IRTNG2	Eaton 5PX 3000i RT2U Netpack G2	3000	1	3000	3	98.349	2621	33.83	6.92
	5PX1000IRT2UG2 + 5PXEBM48RT2UG2	Eaton 5PX 1000i RT2U G2 + Eaton 5PX EBM 48V RT2U G2	1000	1	1000	36	98.077	971	52.37	8.95
	5PX1500IRT2UG2 + 5PXEBM48RT2UG2	Eaton 5PX 1500i RT2U G2 + Eaton 5PX EBM 48V RT2U G2	1500	1	1500	25	98.434	1206	55.59	8.67
	5PX2200IRT2UG2 + 5PXEBM72RT2UG2	Eaton 5PX 2200i RT2U G2 + Eaton 5PX EBM 72V RT2U G2	2200	1	2200	23	98.337	1887	73.16	14.05
	5PX2200IRT3UG2 + 5PXEBM72RT3UG2	Eaton 5PX 2200i RT3U G2 + Eaton 5PX EBM 72V RT3U G2	2200	1	2200	23	98.337	1887	71.92	14.75
	5PX3000IRT2UG2 + 5PXEBM72RT2UG2	Eaton 5PX 3000i RT2U G2 + Eaton 5PX EBM 72V RT2U G2	3000	1	3000	17	98.349	2621	76.3	13.78
5PX3000IRT3UG2 + 5PXEBM72RT3UG2	Eaton 5PX 3000i RT3U G2 + Eaton 5PX EBM 72V RT3U G2	3000	1	3000	17	98.349	2621	75.38	16.62	
5PX1000IRT2UG2 + 4*5PXEBM48RT2UG2	Eaton 5PX 1000i RT2U G2 + 4 * Eaton 5PX EBM 48V RT2U G2	1000	1	1000	148	98.077	971	142.97	20.74	

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
	5PX1500IRT2UG2 + 4*5PXEBM48RT2UG2	Eaton 5PX 1500i RT2U G2 + 4 * Eaton 5PX EBM 48V RT2U G2	1500	1	1500	95	98.434	1206	146.19	20.46
	5PX2200IRT2UG2 + 4*5PXEBM72RT2UG2	Eaton 5PX 2200i RT2U G2 + 4 * Eaton 5PX EBM 72V RT2U G2	2200	1	2200	95	98.337	1887	200.57	34.63
	5PX2200IRT3UG2 + 4*5PXEBM72RT3UG2	Eaton 5PX 2200i RT3U G2 + 4 * Eaton 5PX EBM 72V RT3U G2	2200	1	2200	95	98.337	1887	197.32	36.86
	5PX3000IRT2UG2 + 4*5PXEBM72RT2UG2	Eaton 5PX 3000i RT2U G2 + 4 * Eaton 5PX EBM 72V RT2U G2	3000	1	3000	67	98.349	2621	203.71	34.36
	5PX3000IRT3UG2 + 4*5PXEBM72RT3UG2	Eaton 5PX 3000i RT3U G2 + 4 * Eaton 5PX EBM 72V RT3U G2	3000	1	3000	67	98.349	2621	200.78	38.73

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 PSR 10 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 Use Phase	B6 Use Phase (Normal Mode)	C1-C4 End-of Life	D - Module
5PX3000IRT3UG2 (Reference)	1.00	1.00	1.00	1.00	1.00	1.00	1.00
5PX1000IRT2UG2	0.63	0.63	0.54	0.63	0.37	0.66	0.63
5PX1500IRT2UG2	0.70	0.70	0.51	0.70	0.46	0.76	0.70
5PX1500IRTNG2	0.70	0.70	0.51	0.70	0.46	0.76	0.70
5PX2200IRT2UG2	0.88	0.88	0.78	0.88	0.72	0.91	0.88
5PX2200IRT3UG2	0.88	0.88	0.80	0.88	0.72	0.90	0.88
5PX3000IRT2UG2	0.95	0.95	0.75	0.95	1.00	1.01	0.95
5PX3000IRTNG2	0.95	0.95	0.75	0.95	1.00	1.01	0.95
5PX1000IRT2UG2 + 5PXEBM48RT2UG2	1.43	1.43	0.97	1.43	0.37	1.56	1.43
5PX1500IRT2UG2 + 5PXEBM48RT2UG2	1.50	1.50	0.94	1.50	0.46	1.66	1.50
5PX2200IRT2UG2 + 5PXEBM72RT2UG2	2.04	2.04	1.52	2.04	0.72	2.18	2.04
5PX2200IRT3UG2 + 5PXEBM72RT3UG2	2.02	2.02	1.59	2.02	0.72	2.14	2.02
5PX3000IRT2UG2 + 5PXEBM72RT2UG2	2.10	2.10	1.49	2.10	1.00	2.27	2.10
5PX3000IRT3UG2 + 5PXEBM72RT3UG2	2.15	2.15	1.80	2.15	1.00	2.24	2.15
5PX1000IRT2UG2 + 4 * 5PXEBM48RT2UG2	3.82	3.82	2.24	3.82	0.37	4.26	3.82
5PX1500IRT2UG2 + 4 * 5PXEBM48RT2UG2	3.89	3.89	2.21	3.89	0.46	4.35	3.89

Model	A1-A3 Manufacturing	A4 Distribution	A5 Installation	B2 Use Phase	B6 Use Phase (Normal Mode)	C1-C4 End-of Life	D - Module
5PX2200IRT2UG2 + 4 * 5PXEBM72RT2UG2	5.49	5.49	3.74	5.49	0.72	5.97	5.49
5PX2200IRT3UG2 + 4 * 5PXEBM72RT3UG2	5.47	5.47	3.98	5.47	0.72	5.88	5.47
5PX3000IRT2UG2 + 4 * 5PXEBM72RT2UG2	5.56	5.56	3.71	5.56	1.00	6.07	5.56
5PX3000IRT3UG2 + 4 * 5PXEBM72RT3UG2	5.59	5.59	4.19	5.59	1.00	5.98	5.59

To get functional unit impacts, the declared unit results of specific part numbers need to be divided by below factors calculated as per PSR10 section 3.1.3:

Model	Factor for B6 Phase	Factor for other phases Except B6
5PX3000IRT3UG2 (Reference)	240	144
5PX1000IRT2UG2	80	96
5PX1500IRT2UG2	120	120
5PX1500IRTNG2	120	120
5PX2200IRT2UG2	176	123.2
5PX2200IRT3UG2	176	123.2
5PX3000IRT2UG2	240	144
5PX3000IRTNG2	240	144
5PX1000IRT2UG2 + 5PXEBM48RT2UG2	80	576
5PX1500IRT2UG2 + 5PXEBM48RT2UG2	120	600
5PX2200IRT2UG2 + 5PXEBM72RT2UG2	176	809.6
5PX2200IRT3UG2 + 5PXEBM72RT3UG2	176	809.6
5PX3000IRT2UG2 + 5PXEBM72RT2UG2	240	816
5PX3000IRT3UG2 + 5PXEBM72RT3UG2	240	816
5PX1000IRT2UG2 + 4 * 5PXEBM48RT2UG2	80	2368
5PX1500IRT2UG2 + 4 * 5PXEBM48RT2UG2	120	2280
5PX2200IRT2UG2 + 4 * 5PXEBM72RT2UG2	176	3344
5PX2200IRT3UG2 + 4 * 5PXEBM72RT3UG2	176	3344
5PX3000IRT2UG2 + 4 * 5PXEBM72RT2UG2	240	3216
5PX3000IRT3UG2 + 4 * 5PXEBM72RT3UG2	240	3216

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		<i>Validity period</i>	5 years
Independent verification of the declaration and data, in compliance with ISO 14025: 2006			
Internal	X	External	
The PCR review was conducted by a panel of experts chaired by Julie ORGELET (DDemain)			
<i>PEPs are compliant with XP C08-100-1:2016 and EN 50693:2019</i> <i>The components of the present PEP may not be compared with components from any other program.</i>			
<i>Document complies with ISO 14025: 2006 « Environmental labels and declarations. Type III environmental declarations »</i>			