

# Product Environmental Profile

## PowerLogic PFC Box





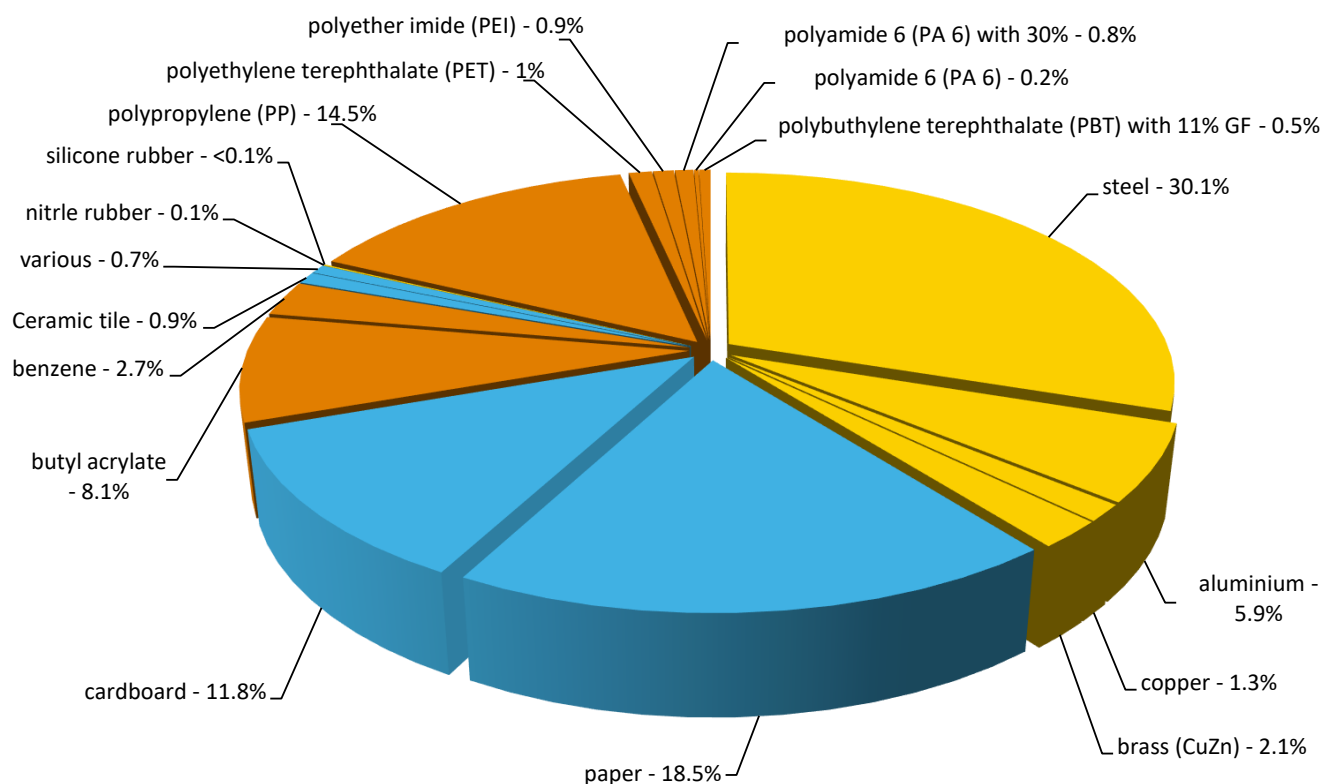
## General information

Representative product	PowerLogic PFC Box -BLRBE500A600B44
Description of the product	<p>PFC Box capacitors are low voltage metal box capacitors specially designed to deliver reliable performance in Standard, Heavy-duty and most severe operating conditions, in fixed and automatic Power Factor correction systems, in networks with frequently switched loads and harmonic disturbances.</p> <ul style="list-style-type: none"> <li>• Technical data: <ul style="list-style-type: none"> <li>- High life expectancy up to 160,000 hours for Box Energy range, 130,000 hours for Box Heavy duty range and 100,000 hours for Box standard duty respectively.</li> <li>- Voltage up to 830 V</li> <li>- High power ratings up to 100 kvar</li> <li>- Operating temperature up to 70 °C for Box Energy and 55°C for Box Heavy duty and Standard duty</li> <li>- High inrush current withstand up to 350 x In for Box Energy and 250 and 200 x In for Heavy duty and Standard duty respectively</li> <li>- Stand-alone equipment</li> <li>- Direct connection to a machine, in harsh environmental conditions</li> <li>- Compliant with standards IEC 60831-1 and -2.</li> </ul> </li> </ul> <p>PFC Box capacitors must be selected depending on the working conditions expected during their lifetime. Since the harmonics are caused by non-linear loads, an indicator for the magnitude of harmonics is the ratio NLL of the total power of non-linear loads to the power supply transformer rating.</p>
Functional unit	PFC Box capacitor supplies the rated reactive energy at rated supply voltage both in 50 & 60Hz to improve the power factor in the networks according to the IEC 60831- Part 1&2



## Constituent materials

Reference product mass	15730g including the product, its packaging and additional elements and accessories
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## Substance assessment

Products of this range are designed in conformity with the requirements of the RoHS directive (European Directive 2011/65/EU of 8 June 2011) and do not contain, or only contain in the authorised proportions, lead, mercury, cadmium, hexavalent chromium or flame retardants (polybrominated biphenyls - PBB, polybrominated diphenyl ethers - PBDE) as mentioned in the Directive

As the products of the range are designed in accordance with the RoHS Directive (European Directive 2002/95/EC of 27 January 2003), they can be incorporated without any restriction in an assembly or an installation subject to this Directive.

Details of ROHS and REACH substances information are available on the Schneider-Electric Green Premium website

<http://www2.schneider-electric.com/sites/corporate/en/products-services/green-premium/green-premium.page>



## Additional environmental information

The PowerLogic PFC Box presents the following relevant environmental aspects

Design	Reactive energy management ensures better utilization of electrical machines, optimized electrical conductor sizes and reduced penalties from the utilities. Availability of more energy at utilities ensures in the reduction of total Co2 emissions for a sustainable future. Utility power bills are typically reduced by 5 % to 10 %.
Manufacturing	Manufactured at a Schneider Electric production site ISO14001 certified
Distribution	Weight and volume of the packaging optimized, based on the European Union's packaging directive Packaging weight is 1834 g, consisting of Cardboard (99%), PE film (1%) Packaging recycled materials is 100% of total packaging mass. Product distribution optimised by setting up local distribution centres
Installation	PFC Box capacitor need to follow the instruction as per the installation guide available along with every product. This document can be downloaded from internet also for the customers. It is very important to keep the environmental condition and ventilation needs of this product as per what is mentioned in the instruction manual
Use	The user must ensure regular maintenance of the contactor and CB of all stages. The periodic maintenance interval recommended is <3 months >> Every month current, voltage, temperature and terminal tightness of capacitor to be checked and recorded >> Electrical equipment should be installed, operated, serviced and maintained only by qualified person
End of life	End of life optimized to decrease the amount of waste and allow recovery of the product components and materials  This product contains Connecting wire (85g), Resistor (30g) that should be separated from the stream of waste so as to optimize end-of-life treatment.  The location of these components and other recommendations are given in the End of Life Instruction document which is available on the Schneider-Electric Green Premium website <a href="http://www2.schneider-electric.com/sites/corporate/en/products-services/green-premium/green-premium.page">http://www2.schneider-electric.com/sites/corporate/en/products-services/green-premium/green-premium.page</a>  Recyclability potential: <b>56%</b> Based on "ECO'DEEE recyclability and recoverability calculation method" (version V1, 20 Sep. 2008 presented to the French Agency for Environment and Energy Management: ADEME).

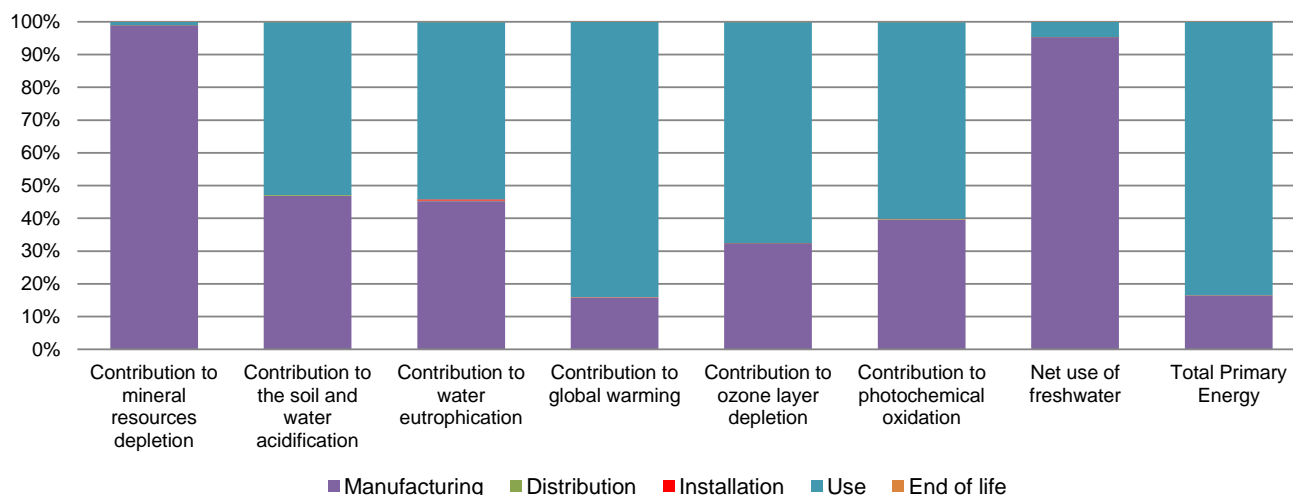


## Environmental impacts

Reference life time	10 years
Product category	Passive products - continuous operation
Installation elements	No special components needed
Use scenario	Product dissipation is 25 W full load, loading rate is 30% and service uptime percentage is 100%  The product is in active mode for ~80% in fixed compensation applications and 50% in automatic PF control applications with a power use of <0.5W/KVAr

<b>Geographical representativeness</b>	South Asia			
<b>Technological representativeness</b>	<p>PFC Box capacitors are low voltage metal box capacitors specially designed to deliver reliable performance in Standard, Heavy-duty and most severe operating conditions, in fixed and automatic Power Factor correction systems, in networks with frequently switched loads and harmonic disturbances.</p> <ul style="list-style-type: none"> <li>• Technical data: <ul style="list-style-type: none"> <li>- High life expectancy up to 160,000 hours for Box Energy range, 130,000 hours for Box Heavy duty range and 100,000 hours for Box standard duty respectively.</li> <li>- Voltage up to 830 V</li> <li>- High power ratings up to 100 kvar</li> <li>- Operating temperature up to 70 °C for Box Energy and 55°C for Box Heavy duty and Standard duty</li> <li>- High inrush current withstand up to 350 x In for Box Energy and 250 and 200 x In for Heavy duty and Standard duty respectively</li> <li>- Stand-alone equipment</li> <li>- Direct connection to a machine, in harsh environmental conditions</li> <li>- Compliant with standards IEC 60831-1 and -2.</li> </ul> </li> </ul> <p>PFC Box capacitors must be selected depending on the working conditions expected during their lifetime. Since the harmonics are caused by non-linear loads, an indicator for the magnitude of harmonics is the ratio NLL of the total power of non-linear loads to the power supply transformer rating.</p>			
<b>Energy model used</b>	<b>Manufacturing</b>	<b>Installation</b>	<b>Use</b>	<b>End of life</b>
	Energy model used: India	Electricity mix; AC; consumption mix, at consumer; 230V; IN	Electricity mix; AC; consumption mix, at consumer; 230V; IN	Electricity mix; AC; consumption mix, at consumer; 230V; IN

Compulsory indicators		PowerLogic PFC Box - BLRBE500A600B44					
Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to mineral resources depletion	kg Sb eq	1.18E-03	1.16E-03	0*	0*	1.32E-05	0*
Contribution to the soil and water acidification	kg SO <sub>2</sub> eq	5.02E+00	2.35E+00	9.27E-03	0*	2.65E+00	4.07E-03
Contribution to water eutrophication	kg PO <sub>4</sub> <sup>3-</sup> eq	1.29E+00	5.85E-01	2.13E-03	4.90E-03	7.00E-01	1.00E-03
Contribution to global warming	kg CO <sub>2</sub> eq	3.02E+03	4.75E+02	2.03E+00	2.53E+00	2.54E+03	1.54E+00
Contribution to ozone layer depletion	kg CFC11 eq	1.04E-04	3.38E-05	0*	0*	7.05E-05	9.59E-08
Contribution to photochemical oxidation	kg C <sub>2</sub> H <sub>4</sub> eq	5.64E-01	2.23E-01	6.61E-04	6.05E-04	3.39E-01	4.33E-04
Resources use	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Net use of freshwater	m3	5.92E+01	5.65E+01	0*	0*	2.77E+00	0*
Total Primary Energy	MJ	4.66E+04	7.64E+03	2.72E+01	0*	3.89E+04	1.98E+01



Optional indicators		PowerLogic PFC Box - BLRBE500A600B44					
Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to fossil resources depletion	MJ	4.65E+04	6.75E+03	2.85E+01	0*	3.97E+04	1.85E+01
Contribution to air pollution	m³	3.14E+05	6.34E+04	8.63E+01	0*	2.51E+05	1.44E+02
Contribution to water pollution	m³	1.59E+05	3.13E+04	3.34E+02	1.36E+02	1.27E+05	2.48E+02
Resources use	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Use of secondary material	kg	3.36E+00	3.36E+00	0*	0*	0*	0*
Total use of renewable primary energy resources	MJ	2.19E+03	3.69E+02	0*	0*	1.82E+03	0*
Total use of non-renewable primary energy resources	MJ	4.44E+04	7.28E+03	2.72E+01	0*	3.71E+04	1.98E+01
Use of renewable primary energy excluding renewable primary energy used as raw material	MJ	2.14E+03	3.18E+02	0*	0*	1.82E+03	0*
Use of renewable primary energy resources used as raw material	MJ	5.05E+01	5.05E+01	0*	0*	0*	0*
Use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	4.42E+04	7.05E+03	2.72E+01	0*	3.71E+04	1.98E+01
Use of non renewable primary energy resources used as raw material	MJ	2.23E+02	2.23E+02	0*	0*	0*	0*
Use of non renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*
Use of renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*
Waste categories	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Hazardous waste disposed	kg	2.02E+02	1.07E+02	0*	0*	7.58E+01	1.98E+01
Non hazardous waste disposed	kg	4.74E+02	5.15E+01	7.21E-02	1.84E+00	4.21E+02	6.22E-02
Radioactive waste disposed	kg	8.37E-02	5.37E-02	5.14E-05	0*	2.99E-02	9.89E-05
Other environmental information	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Materials for recycling	kg	8.80E+00	1.12E+00	0*	0*	0*	7.68E+00
Components for reuse	kg	2.20E-02	0*	0*	0*	0*	2.20E-02
Materials for energy recovery	kg	6.48E-02	7.18E-03	0*	0*	0*	5.76E-02
Exported Energy	MJ	4.58E-03	0*	0*	4.58E-03	0*	0*

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

Life cycle assessment performed with EIME version EIME v5.5, database version 2015-04.

The use phase is the life cycle phase which has the greatest impact on the majority of environmental indicators (based on compulsory indicators).

Please note that the values given above are only valid within the context specified and cannot be used directly to draw up the environmental assessment of an installation.

Registration N°	ENVPEP130301EN_V3-EN	Drafting rules	PCR-ed3-EN-2015 04 02
Date of issue	12/2022		
Validity period	5 years	Information and reference documents	<a href="http://www.pep-ecopassport.org">www.pep-ecopassport.org</a>
Independent verification of the declaration and data, in compliance with ISO 14025 : 2010			
Internal	X	External	
The elements of the present PEP cannot be compared with elements from another program.			
Document in compliance with ISO 14025 : 2010 « Environmental labels and declarations. Type III environmental declarations »			

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Published by Schneider Electric

ENVPEP130301EN\_V3-EN

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12/2022