

# Product Environmental Profile

## UPS Trimod High Efficiency



### LEGRAND'S ENVIRONMENTAL COMMITMENTS

**• Incorporate environmental management into our industrial sites**

Of all Legrand sites worldwide, over 85% are ISO 14001-certified (sites belonging to the Group for more than five years).

**• Offer our customers environmentally friendly solutions**

Develop innovative solutions to help our customers design more energy efficient, better managed and more environmentally friendly installations.


**• Involve the environment in product design and provide informations in compliance with ISO 14025**

Reduce the environmental impact of products over their whole life cycle.

Provide our customers with all relevant information (composition, consumption, end of life, etc.).



### REFERENCE PRODUCT

<b>Function</b>	To protect the load of 10 kW against input power failure during 10 years and provide a backup time of 3 minutes in case of a power outage in conformity to EN 62040-1, EN 62040-2 and EN 62040-3.
<b>Reference Product</b>	<div style="text-align: center;">  </div> <p style="text-align: center;">LG-310431 + 3 x LG-310869 + 4 x LG-310875</p> <p style="text-align: center;">VFI monomode UPS - Trimod High Efficiency 10kVA - 10kW - high cabinet 1650x414x628mm</p>

The company reserves the right to change specifications and designs without notice. All illustrations, descriptions, dimensions and weights in the document are for guidance and cannot be held binding on the company.



### PRODUCTS CONCERNED

The environmental data is representative of the following products: the total Trimod HE offer, as presented in all relevant catalogues (list available on request at the Customer Service).

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## ■ CONSTITUENT MATERIALS

This Reference Product contains no substances prohibited by the regulations applicable at the time of its introduction to the market. It respects the restrictions on use of hazardous substances as defined in the RoHS directive 2011/65/EU.

<b>Total weight of Reference Product</b>		<b>200 Kg</b> (with unit packaging)			
Plastics as % of weight		Metals as % of weight		Other as % of weight	
Polyamide	1,7 %	Steel	42,9 %	Batteries / accumulators	25,2 %
ABS	1,1 %	Aluminium	4,0 %	Electronic cardboards	2,8 %
Polycarbonate	0,2 %	Copper alloys	0,5 %	Cable / electric wire	1,8 %
PVC	0,1 %			Packaging as % of weight	
				Paper / cardboard	11,2 %
				Wood	7,3 %
				Steel	0,7 %
				Polyethylene	0,3 %
				Other	0,2 %
<b>Total plastics</b>	<b>3,1 %</b>	<b>Total metals</b>	<b>47,4 %</b>	<b>Total other and packaging</b>	<b>49,5 %</b>

Estimated recycled material content: 37 % by mass.



## ■ MANUFACTURE

This Reference Product comes from a site that observes the applicable legislation for industrial sites.



## ■ DISTRIBUTION

Products are distributed from logistics centres located with a view to optimize transport efficiency. The Reference Product is therefore transported over an average distance of 780 km by road from our warehouse to the local point of distribution into the European market.

Packaging is compliant with european directive 2004/12/EU concerning packaging and packaging waste. At their end of life, its recyclability rate is 96 % (in % of packaging weight).



## ■ INSTALLATION

For the installation of the product, only standard tools are needed.



## ■ USE

Under normal conditions of use, this product requires maintenance. In particular these are the components considered to be substituted during 10 years:

- DC and AC capacitors of filtering (and related PCB);
- Fans (2 times);
- Power supply PCB;
- Batteries.

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## END OF LIFE

The product end-of-life factors are taken into account during the design phase. Dismantling and sorting of components or materials is made as easy as possible with a view to recycling or failing that, another form of reuse.

### • Recyclability rate:

Calculated using the method described in technical report IEC/TR 62635, the recyclability rate of the product is estimated at 84 %. This value is based on data collected from a technological channel operating on an industrial basis. It does not pre-validate the effective use of this channel for the end of life of this product.

Separated into:

- plastic materials (excluding packaging) : 3 %
- metal materials (excluding packaging) : 47 %
- other materials (excluding packaging) : 15 %
- packaging (all types of materials) : 19 %



## ENVIRONMENTAL IMPACTS

The evaluation of environmental impacts examines the stages of the Reference Product life cycle: manufacturing, distribution, installation, use and end-of-life. It is representative from products marketed and used in Europe, in compliance with the local current standards.

For each phase, the following modelling elements were taken in account:

<b>Manufacture</b>	Materials and components of the product, all transport for the manufacturing, the packaging and the waste generated by the manufacturing.
<b>Distribution</b>	Transport between the last Group distribution centre and an average delivery point in the sales area.
<b>Installation</b>	The end of life of the packaging.
<b>Use</b>	<ul style="list-style-type: none"> <li>• Product category: active product.</li> <li>• Use scenario: consumption of 31930 kW during the 10 years working life due to an average energy efficiency of 95,2 %. The substitution of the maintenance components as indicated in the Use paragraph. This modelling duration does not constitute a minimum durability requirement.</li> <li>• Energy model: Electricity Mix, Europe 27 - 2002.</li> </ul>
<b>End of life</b>	The default end of life scenario maximizing the impacts.
<b>Software and database used</b>	EIME V5 and its database «CODDE-2015-04»

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## SELECTION OF ENVIRONMENTAL IMPACTS

	Total for Life cycle		Raw material and manufacture		Distribution		Installation		Use		End of life	
	Value	Unit	Value	%	Value	%	Value	%	Value	%	Value	%
<b>Global warming</b>	2.00E+04	kgCO <sub>2</sub> eq.	9.14E+02	5%	7.76E+00	< 1%	2.25E+00	< 1%	1.91E+04	95%	2.10E+01	< 1%
<b>Ozone depletion</b>	4.80E-03	kgCFC-11 eq.	1.53E-04	3%	1.57E-08	< 1%	1.28E-08	< 1%	4.65E-03	97%	4.19E-07	< 1%
<b>Acidification of soils and water</b>	1.45E+02	kgSO <sub>2</sub> eq.	2.13E+00	1%	3.49E-02	< 1%	1.06E-02	< 1%	1.43E+02	98%	8.24E-02	< 1%
<b>Water eutrophication</b>	5.94E+00	kg[PO <sub>4</sub> ] <sup>3-</sup> eq.	3.69E-01	6%	8.02E-03	< 1%	8.50E-03	< 1%	5.45E+00	92%	1.08E-01	2%
<b>Photochemical ozone formation</b>	6.99E+00	kgC <sub>2</sub> H <sub>4</sub> eq.	2.12E-01	3%	2.48E-03	< 1%	7.54E-04	< 1%	6.77E+00	97%	6.35E-03	< 1%
<b>Depletion of abiotic resources - elements</b>	7.27E-01	kgSb eq.	4.12E-01	57%	3.11E-07	< 1%	9.64E-08	< 1%	3.15E-01	43%	1.21E-06	< 1%
<b>Total use of primary energy</b>	3.55E+05	MJ	2.58E+04	7%	1.04E+02	< 1%	2.96E+01	< 1%	3.29E+05	93%	2.30E+02	< 1%
<b>Net use of fresh water</b>	6.22E+01	m <sup>3</sup>	1.04E+01	17%	6.95E-04	< 1%	5.65E-04	< 1%	5.18E+01	83%	1.47E-02	< 1%
<b>Depletion of abiotic resources - fossil fuels</b>	2.09E+05	MJ	1.16E+04	6%	1.09E+02	< 1%	3.14E+01	< 1%	1.97E+05	94%	2.92E+02	< 1%
<b>Water pollution</b>	1.01E+06	m <sup>3</sup>	1.27E+05	13%	1.28E+03	< 1%	3.53E+02	< 1%	8.79E+05	87%	2.55E+03	< 1%
<b>Air pollution</b>	1.25E+06	m <sup>3</sup>	2.84E+05	23%	3.18E+02	< 1%	2.17E+02	< 1%	9.61E+05	77%	2.11E+03	< 1%

The values of the 27 impacts defined in the PCR-ed3-EN-2015 04 02 are available in the digital database of pep-ecopassport.org website.

For the products covered by the PEP other than the Reference Product, the environmental impacts of the Manufacturing, Distribution, Intallation and End of Life are directly proportional to the accumulators mass; the impacts of the Use phase are directly proportional to the dissipated power.

Registration N°: LGRP-00318-V01.01-EN	Drafting rules: PEP-PCR-ed3-EN-2015 04 02 Supplemented by PSR-0010-ed1.1-2015 10 16
Verifier accreditation N°: VH02	Information and reference documents : <a href="http://www.pep-ecopassport.org">www.pep-ecopassport.org</a>
Date of issue: 12-2016	Validity period: 5 years
Independent verification of the declaration and data, in compliance with ISO 14025:2010 Internal <input checked="" type="checkbox"/> External <input type="checkbox"/>	
The PCR review was conducted by a panel of experts chaired by Philippe Osset (SOLINNEN)	
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»	
Environmental data in alignment with EN 15804 : 2012 + A1 : 2013	

