

# Product Environmental Profile

## KEOR HP - ON LINE – Double Conversion - Triphased UPS




### 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

Function	To protect the load of 90 000 Watts against input power failure during 15 years and switch to the energy storage system to avoid power outage.
Reference Product	 Cat.No 960430 KEOR HP 100 kVA - ON LINE – Double Conversion UPS Product dimensions is 1670x815x825 A x L x P (mm); redundancy 1) 2) 3) ; power factor = 0,99, location of the manufacturing plant : Italy; Mass without energy storage system e.g. batteries without packaging : 625 kg; Input Dependency Characteristics according to IEC 62040-3 : VFI, VFD Multimode

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:

Catalogue Numbers
960430 960431 960432 960433 960434 960435 960436 960437 960438 960439 310263 310264 310265 310266 310267 310268 310269



### ■ 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.

Total weight of Reference Product		660 819g (with unit packaging)			
Plastics as % of weight		Metals as % of weight		Other as % of weight	
ABS	0.3%	Steel	14.2%	PWB	68.9%
PBT	0.2%	Al	5.7%	Electric cables	5.0%
Others plastics	0.2%	Others metals	<0.1%	Others electric components	0.1%
PC	<0.1%			LCD screen	<0.1%
PA	<0.1%				
				Packaging as % of weight	
				Wood	3.0%
				Paper	2.4%
				PE	<0.1%
Total plastics		Total metals		Total other and packaging	
0.7%		19.9%		79.4%	

Estimated recycled material content: 11% by mass.



### ■ MANUFACTURE

This Reference Product comes from a site that has initiated an environmental certification.



### ■ 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 market in Europe.

Packaging is compliant with european directive 2004/12/EU concerning packaging and packaging waste. At their end of life, its recyclability rate is 97 % (in % of packaging weight).



### ■ INSTALLATION

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



### ■ USE

Under normal conditions of use, this type of Product requires maintenance during the lifetime of the UPS : 2 AC&DC Capacitors of filtering, 3 Fan, 2 Power supply PCB.

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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. This product falls within the scope of the WEEE directive (2012/19/EU). Therefore it must be processed through local WEEE recycling/recovery channels.

• Components to process specifically :

In accordance with the stipulations of this directive, the following components must be extracted and processed via specific channels in compliance with the WEEE Directive 2012/19/EU: PWB > 10cm<sup>2</sup> : 456 186 g

• Extended producer responsibility :

The sale of this product is subject to a contribution to eco-organisations in each country responsible for managing end-of-life products in the field of application of the European Waste Electronic and Electrical Equipment Directive.

• Recyclability rate:

Calculated using the method described in technical report IEC/TR 62635, the recyclability rate of the product is estimated at 69%. 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) : 1 %
- metal materials (excluding packaging) : 20 %
- other materials (excluding packaging) : 43%
- packaging (all types of materials) : 5 %



## 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:

Manufacture	Materials and components of the product, all transport for the manufacturing, the packaging and the waste generated by the manufacturing.
Distribution	Transport between the last Group distribution centre and an average delivery point in the sales area.
Installation	The end of life of the packaging.
Use	<ul style="list-style-type: none"> <li>• Product category: product with output power P &gt; 10000W, VFI, as described in PSR-0010-ed1.1-EN-2015 10 16</li> <li>• Use scenario: for a 15 years working life, The average energy efficiency is 94 %. This modelling duration does not constitute a minimum durability requirement. The methodology for the calculation of the electricity consumption is based on the ENERGY STAR® Program Requirements Product Specification for Uninterruptible Power Supplies (UPSs), Eligibility Criteria Version 1.0. Input power factor is = 0.99 and redundancy : UPS that cannot tolerate any failures while maintaining Normal Mode operation. Input Dependency Characteristics according to IEC 62040-3 : VFI, VFD Multimode.</li> <li>• Energy model: Electricity Mix; Europe 27, year 2002</li> </ul>
End of life	The default end of life scenario maximizing the impacts.
Software and database used	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	%
Global warming	2.03E+05	kg~CO <sub>2</sub> eq.	7.11E+03	4%	3.92E+01	< 1%	1.94E+00	< 1%	1.96E+05	96%	6.80E+01	< 1%
Ozone depletion	4.86E-02	kg~CFC-11 eq.	1.19E-03	2%	2.78E-05	< 1%	8.63E-09	< 1%	4.74E-02	97%	1.58E-06	< 1%
Acidification of soils and water	1.48E+03	kgSO <sub>2</sub> eq.	1.07E+01	< 1%	1.05E-01	< 1%	9.11E-03	< 1%	1.47E+03	99%	2.62E-01	< 1%
Water eutrophication	5.80E+01	kg~PO <sub>4</sub> <sup>3-</sup> eq.	2.19E+00	4%	2.83E-02	< 1%	6.02E-03	< 1%	5.55E+01	96%	3.18E-01	< 1%
Photochemical ozone formation	7.24E+01	kg~C <sub>2</sub> H <sub>4</sub> eq.	2.36E+00	3%	2.28E-03	< 1%	6.45E-04	< 1%	7.00E+01	97%	2.04E-02	< 1%
Depletion of abiotic resources - elements	7.22E-01	kgSb eq.	5.06E-01	70%	7.18E-09	< 1%	8.11E-08	< 1%	2.16E-01	30%	4.19E-06	< 1%
Total use of primary energy	3.50E+06	MJ	1.31E+05	4%	4.84E+02	< 1%	2.58E+01	< 1%	3.37E+06	96%	7.32E+02	< 1%
Net use of fresh water	5.61E+02	m <sup>3</sup>	4.70E+01	8%	4.71E-02	< 1%	3.90E-04	< 1%	5.14E+02	92%	5.46E-02	< 1%
Depletion of abiotic resources - fossil fuels	2.12E+06	MJ	1.02E+05	5%	4.95E+02	< 1%	2.72E+01	< 1%	2.02E+06	95%	9.61E+02	< 1%
Water pollution	8.91E+06	m <sup>3</sup>	6.08E+05	7%	5.79E+03	< 1%	3.10E+02	< 1%	8.28E+06	93%	7.93E+03	< 1%
Air pollution	9.89E+06	m <sup>3</sup>	1.26E+06	13%	1.38E+03	< 1%	1.60E+02	< 1%	8.62E+06	87%	7.54E+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 products covered by the PEP other than the Reference product, the environmental impacts of each phase of the lifecycle are calculated with:

- Manufacturing phase is proportional to the mass of the product,
- Installation, Distribution and End of Life phases are the same value,
- Use phase is proportional to the output power.

Registration N°: LGRP-0525-V01.01-EN	Drafting rules: «PEP-PCR-ed3-EN-2015 04 02» Supplemented by «PSR-0010-ed1.1-FR-2015 10 16»
Verifier accreditation N°: VH02	Information and reference documents : www.pep-ecopassport.org
Date of issue: 10-2017	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	

