128 av. du Maréchal-de-Lattre-de-Tassigny
87045 Limoges Cedex France
Tel. +33 (0) 5 55 06 87 87
Fax. + 33 (0) 5 55 06 88 88

Your usual Sales office
www.legrand.com

Product Environmental Profile

Daker Dk Plus-conventional UPS - Single phase On-line double conversion VFI with batteries

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 up to 5000 Watts against input power failure during 8 years and provide a backup time of 6 minutes for a typical application in case of a power outage. Product dimensions is 440x176x680; AxLxP (mm). On-line double UPS convertible VFI-SS-111; monophased equipped with batteries; power factor>0.99; Location of the manufacturing plant : China; Technology of energy storage system by batteries; Input Dependency Characteristics according to IEC 62040-3 :VFI, Mulitimode; Redundancy : N+0; Mass without energy storage system = 27 kg; Mass of energy storage system if incorporated=29 kg (without packaging).
Reference Product	
	Cat.No 310173
	DAKER DK Plus Single-phase conventional - 5000 VA

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
310171, 310172 310173

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PEP ecopassport®

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	**59244 g** (with unit packaging)

Plastics as % of weight		**Metals as % of weight**		**Other as % of weight**	
ABS	**0.3%**	Steel	**27.1%**	Batteries	**48.8%**
PBT	**0.1%**	Al	**1.8%**	PWB	**15.5%**
		Copper alloys	**0.2%**	Electric cables	**0.6%**
		Other metal	**<0.1%**	LCD sceen	**0.1%**
				Others electric components	**<0.1%**
				Packaging as % of weight	
				Paper	**4.6%**
				PS	**0.7%**
				PE	**0.2**
Total plastics	**0.4%**	**Total metals**	**29.1%**	**Total other and packaging**	**70.5%**

Estimated recycled material content: 41% by mass.

MANUFACTURE

This Reference Product comes from sites that have received ISO14001 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 84 % (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 : 1 AC&DC Capacitors of filtering, 1 Fan and 1 Power supply PCB and 1 battery (lead acid battery)

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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^2 : 9204 g + Lead Accumulator* : 29000 g

(*) Hazardous waste as defined by European Commission decision 2000/532/EU.

• Extended productor responsability :

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 68%. 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) : 0 %
- metal materials (excluding packaging) : 29 %
- other materials (excluding packaging) : 34 %
- 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	• product with output power 1500 W< P ≤5000 W as described in PSR-0010-ed1.1-EN-2015 10 16 • Use scenario: for a 8 years working life, The average energy efficiency is 90 %. This modelling duration does not constitute a minimum durabilty 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 = 0.62 and redundancy : UPS that cannot tolerate any failures while maintaining Normal Mode operation. No redundancy. • Energy model: Electricity Mix; Europe 27, year 2002
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	
Global warming	**1.39E+04**	**kg~CO_2 eq.**	3.82E+02	**3%**	2.30E+00	**< 1%**	2.32E-01	**< 1%**	1.35E+04	**97%**	5.78E+00	**< 1%**
Ozone depletion	**3.35E-03**	**kg~CFC-11 eq.**	7.28E-05	**2%**	4.66E-09	**< 1%**	2.75E-09	**< 1%**	3.28E-03	**98%**	1.26E-07	**< 1%**
Acidification of soils and water	**1.02E+02**	**kgSO2 eq.**	7.50E-01	**< 1%**	1.03E-02	**< 1%**	1.07E-03	**< 1%**	1.02E+02	**99%**	2.25E-02	**< 1%**
Water eutrophication	**4.03E+00**	**kg~PO_4^{3-}eq.**	1.70E-01	**4%**	2.37E-03	**< 1%**	1.17E-03	**< 1%**	3.83E+00	**95%**	2.81E-02	**< 1%**
Photochemical ozone formation	**4.90E+00**	**kg~C_2H_4 eq.**	7.62E-02	**2%**	7.34E-04	**< 1%**	7.72E-05	**< 1%**	4.82E+00	**98%**	1.74E-03	**< 1%**
Depletion of abiotic resources - elements	**1.78E-01**	**kgSb eq.**	1.57E-01	**88%**	9.21E-08	**< 1%**	1.14E-08	**< 1%**	2.10E-02	**12%**	3.47E-07	**< 1%**
Total use of primary energy	**2.42E+05**	**MJ**	8.80E+03	**4%**	3.08E+01	**< 1%**	2.89E+00	**< 1%**	2.33E+05	**96%**	6.28E+01	**< 1%**
Net use of fresh water	**3.88E+01**	**m^3**	3.16E+00	**8%**	2.06E-04	**< 1%**	1.08E-04	**< 1%**	3.56E+01	**92%**	4.39E-03	**< 1%**
Depletion of abiotic resources - fossil fuels	**1.45E+05**	**MJ**	5.19E+03	**4%**	3.23E+01	**< 1%**	3.25E+00	**< 1%**	1.39E+05	**96%**	8.13E+01	**< 1%**
Water pollution	**6.38E+05**	**m^3**	6.78E+04	**11%**	3.78E+02	**< 1%**	3.33E+01	**< 1%**	5.69E+05	**89%**	6.86E+02	**< 1%**
Air pollution	**7.17E+05**	**m^3**	1.25E+05	**17%**	9.43E+01	**< 1%**	2.88E+01	**< 1%**	5.91E+05	**82%**	6.16E+02	**< 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 310173, the environmental impacts of each phase of the lifecycle are asimilated to the impacts of the Reference Product :

- Manufacturing, Distribution, Installation and End of Life phases are proportional to the mass of the product

- Utilisation phase : for ref 310171, the impacts indicator are multiplied by 0.4 and for ref 310172, the impacts indicator are multiplied by 0.5

Registration N°: LGRP-00427-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: 07-2017	Validity period: 5 years
Independent verification of the declaration and data, in compliance with ISO 14025:2010 Internal ☒ External ☐	
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	