

# Product Environmental Profile

## RCD add-on module DX<sup>3</sup> with metering/ measuring unit



### LEGRAND'S ENVIRONMENTAL COMMITMENTS

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

Of all Legrand sites worldwide, over 80% are ISO 14001-certified (sites belonging to the Group for more than five years).

• **Involve the environment in product design**

Provide our customers with all relevant informations (composition, consumption, end of life, etc.).  
Reduce the environmental impact of products over their whole life cycle.

• **Offer our customers environmentally friendly solutions**

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



### REFERENCE PRODUCT

<p><b>Function</b></p>	<p>The product has to be associated to MCBs DX<sup>3</sup>, 1,5 modules per pole width, with breaking capacity 10000A/16 kA, 25 kA, 36 kA or 50 kA and protects people against direct and indirect electric shocks and installations against insulation faults, enabling, in addition, the measurement of the main electrical quantities (depending on the version: voltage, current, residual current, power energy, frequency, power factor, THD, the historical of causes of recent trips). PCR category: active product. Life span considered for the study: 10 years.</p>
<p><b>Reference Products</b></p>	<div style="text-align: center;">  <p>LG-410659</p> <p>RCD add-on module DX<sup>3</sup> with metering/measuring unit - 400 V ~ - 125 A- 4P - HPI Type - 30-3000 mA</p> </div>

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.



### CONCERNED PRODUCTS

The environmental data for the Reference Product represent the following Catalogue Numbers:

<ul style="list-style-type: none"> <li>• <b>LG-410659</b></li> </ul>
<ul style="list-style-type: none"> <li>• LG-410657</li> <li>• LG-410658</li> </ul>

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### ■ CONSTITUENT MATERIALS

This product contains no substances prohibited by the regulations applicable at the time of its introduction to the market. At the date of publication of this document, this product contains no substances to which the RoHS directives apply (2002/95/EC and review 2011/65/EC) and no substances appearing on the list of candidates for authorisation of the European REACH regulation.

<b>Total weight of Reference Products:</b>		<b>2057 g</b> (unit packaging included)			
Plastics as % of weight		Metals as % of weight		Others as % of weight	
Polycarbonates (PC)	14,0 %	Copper	21,3 %	Glass fiber	1,3 %
Polyamide 6 (PA6)	2,0 %	Steel	4,0 %	Other	0,6 %
Polyamide 66 (PA66)	1,6 %	Aluminium	0,4 %	Packaging as % of weight	
Epoxy resin	0,8 %	Nickel	0,4 %	Cardboard	49,6 %
ABS	0,3 %	Tin	0,4 %	Paper	1,1 %
Other plastics	0,9 %	Other metals	0,9 %	Ink	0,4 %
<b>Total plastics</b>	<b>19,6 %</b>	<b>Total metals</b>	<b>27,4 %</b>	<b>Total other and packaging</b>	<b>53,0 %</b>

Estimated recycled material content: 52 % by weight



### ■ MANUFACTURE

These products come from sites that have received ISO14001 certification.



### ■ DISTRIBUTION

The Group's products are distributed from logistics centres located to optimize transport efficiency.

The Reference Product is therefore transported over an average distance of 780 km, essentially by road, representing a marketing in Europe.

Packaging is compliant with Directive 2004/12/EC concerning packaging and packaging waste. At the end of product life, the theoretical recycling potential is 99 % and their energy recovery potential is 99 % (as % of packaging weight).



### ■ INSTALLATION

Installation components not delivered with the product are not taken into account.



### ■ USE

#### ■ Servicing and maintenance:

Under normal conditions of use, this type of product requires no servicing or maintenance.

#### ■ Consumable

No consumables are necessary to use the products.

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### END OF LIFE

- **Non-hazardous waste contained in the product:** 1007 g
- **Lithium batteries in the product:** 2 g

- **Hazardous waste contained in the product:**

This product contains no hazardous waste

- **Theoretical recycling potential:**

The theoretical recycling potential of a product is the percentage of material that can be recycled using existing techniques. It takes no account of the existence or lack of recycling services, which are highly dependent on the local situation.

This product contains 96 % by weight of potentially recyclable materials (excluding packaging):

- Plastic materials : 40 %
- Metal materials : 56 %

- **Energy recovery potential:**

Energy recovery consists in using the calories contained in waste by burning it and recovering the energy produced, for example, to heat buildings or to produce electricity. The process uses the convertible energy contained in the waste.

35 % of the product mass can be recycled with energy recovery.



### ENVIRONMENTAL IMPACTS

The evaluation of environmental impacts examines the stages of the Reference Product life cycle: manufacturing, distribution, installation, use and end of life of the product marketed and used in Europe. The following modelling elements were taken into account:

<b>Manufacture</b>	Unit packaging taken into account.
<b>Distribution</b>	Transport between the last Group distribution centre and an average delivery to the sales area.
<b>Installation</b>	Installation components not delivered with the product are not taken into account.
<b>Use</b>	<ul style="list-style-type: none"> <li>• Maintenance: under normal conditions of use, this type of product requires no servicing or maintenance. No consumables are necessary to use the products.</li> <li>• Product category: active product.</li> <li>• Use scenario: ten-year working life. Stand-by mode power: 4.572 W for 99,99 % of the time; active mode power: 4,6 W for 0,01 % of the time. This modelling duration does not constitute a minimum durability requirement.</li> <li>• Energy model: Electricity Europe 2005.</li> </ul>
<b>End of life</b>	In view of the data available on the date of creation of the document, and in accordance with the requirements of the PCR of the « PEP ecopassport » programme, was counted transport of the Reference Product by road only once, over a distance of 1000 km, to a processing site at end of life.
<b>Software used</b>	EIME V5 and its database «Legrand-2012-10-31 version 3» developed from database «CODDE-2012-07».

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### ENVIRONMENTAL IMPACTS

		Total for Life cycle		Raw material and manufacture		Distribution		Installation		Use		End of life	
		Value	Unit	Value	%	Value	%	Value	%	Value	%	Value	%
Mandatory indicators	Contribution to greenhouse effect	2.41E+02	kg-CO <sub>2</sub> eq.	1.23E+01	5%	1.99E-01	< 1%	0.00E+00	0%	2.29E+02	95%	7.60E-02	< 1%
	Damage to the ozone layer	2.14E-05	kg-CFC-11 eq.	8.79E-06	41%	1.41E-07	< 1%	0.00E+00	0%	1.24E-05	58%	5.39E-08	< 1%
	Eutrophication of water	3.04E-03	kg-PO <sub>4</sub> <sup>3-</sup> eq.	2.50E-03	82%	3.32E-06	< 1%	0.00E+00	0%	5.38E-04	18%	1.27E-06	< 1%
	Photochemical ozone formation	8.39E-02	kg-C <sub>2</sub> H <sub>4</sub> eq.	3.62E-03	4%	1.73E-04	< 1%	0.00E+00	0%	8.00E-02	95%	6.61E-05	< 1%
	Acidification of the air	3.40E-02	kg-H <sup>+</sup> eq.	3.24E-03	10%	2.63E-05	< 1%	0.00E+00	0%	3.07E-02	90%	1.01E-05	< 1%
	Total energy consumed	4.77E+03	MJ	2.34E+02	5%	2.52E+00	< 1%	0.00E+00	0%	4.53E+03	95%	9.63E-01	< 1%
	Consumption of water	8.66E+02	dm <sup>3</sup>	2.11E+02	24%	2.39E-01	< 1%	0.00E+00	0%	6.55E+02	76%	9.14E-02	< 1%

Optional indicators	Depletion of natural resources	1.01E-13	years <sup>-1</sup>	9.59E-14	95%	3.44E-18	< 1%	0.00E+00	0%	5.15E-15	5%	1.31E-18	< 1%
	Toxicity of the air	4.48E+07	m <sup>3</sup>	6.85E+06	15%	3.89E+04	< 1%	0.00E+00	0%	3.79E+07	85%	1.49E+04	< 1%
	Toxicity of the water	7.16E+01	m <sup>3</sup>	5.83E+00	8%	2.78E-02	< 1%	0.00E+00	0%	6.57E+01	92%	1.06E-02	< 1%
	Production of hazardous waste	4.17E+00	kg	3.72E-01	9%	7.42E-05	< 1%	0.00E+00	0%	3.80E+00	91%	2.84E-05	< 1%

The environmental impacts of the Reference Product are representative of the products covered by the PEP, which therefore constitute a homogeneous environmental family.

Extrapolation rule: the environmental impacts of the articles of the homogeneous family are the same as those of the Reference Product for all the life cycle phases.

The values of these impacts are valid for the context specified in this document. They must not be used directly to draw up the environmental balance sheet for the installation.

Registration number: LGRP-2013-95-v1-en	Drafting rule: PEP-PCR-ed2.1-FR-2012 12 11
Authorisation number of checker: VH02	Programme information: <a href="http://www.pep-ecopassport.org">www.pep-ecopassport.org</a>
Date of issue: June 2013	Validity period: 4 years
Independent verification of the declaration and data, in accordance with ISO 14025:2006 Interne <input checked="" type="checkbox"/> Externe <input type="checkbox"/>	
In accordance with ISO 14025 :2006 Type III environmental declaration	
The critical review of the PCR was conducted by a panel of experts chaired by J.Chevalier (CSTB)	
The elements of the present PEP cannot be compared with elements from another program	

