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Product Environmental Profile

Indoor self-contained emergency lighting luminaires LED

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 information (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 design more energy efficient, better managed and more environmentally friendly installations.

REFERENCE PRODUCT

Function	Facilitate evacuation of the public, by ensuring illumination of 70 lumens for 1 hour, in order to avoid any risk of panic and to guarantee the visibility of any obstacles along the evacuation routes / entrance halls leading to the exit doors, in the event of their electrical power supply failure. This function shall be ensured for 10 years by its self-contained power supply.
Reference Product	
	Cat.No 6 616 01
	EMERGENCY LUMINAIRE U21 - STD NON MAINTAINED - 1 H - 70 LM - LED.

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 are representative of the following products:

Cat. Numbers	Lumen (lm)	Autonomy	Consumption (W)	IP	IK
6 616 01	70	1H	1,3	IP 42	IK 07
6 616 02	100		1,9		
6 616 05	160		2		
6 616 08	200		2,2		
6 616 09	350		2,8		
6 616 11	90	3H	2,9		

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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 does not contain substances covered by the RoHS Directive (2002/95/EC and its revision 2011/65/EC). It contains none of the 138 candidate list of the REACH regulation dated 19/12/2012.

Total weight of Reference Product	**499 g** (with unit packaging)

Plastics as % of weight		**Metals as % of weight**		**Other as % of weight**	
PC	**55,7 %**	Copper alloys	**2,2 %**	Electronic cards	**20,2 %**
PP	**0,4 %**	Steel	**0,2 %**	Accumulators	**9,3 %**
PS	**0,2 %**				
PE	**0,1 %**				
				Packaging as % of weight	
				Paper (Packaging)	**11,6 %**
Total plastics	**56,5 %**	**Total metals**	**2,4 %**	**Total other and packaging**	**41,1 %**

Estimated recycled material content: 13 % by mass.

Pour les produits autres que le Produit de Référence, les tableaux des matériaux suivant s'appliquent :

Weight of the product 6 616 02	**551 g** (with unit packaging)

Plastics as % of weight		**Metals as % of weight**		**Other as % of weight**	
PC	**50,5 %**	Copper alloys	**2,0 %**	Electronic cards	**18,6 %**
PP	**0,4 %**	Steel	**0,2 %**	Accumulators	**17,0 %**
PS	**0,2 %**				
PE	**0,1 %**				
				Packaging as % of weight	
				Paper (Packaging)	**11,0 %**
Total plastics	**51,2 %**	**Total metals**	**2,2 %**	**Total other and packaging**	**46,6 %**

Estimated recycled material content: 14 % by mass.

Weight of the product 6 616 05	**593 g** (with unit packaging)

Plastics as % of weight		**Metals as % of weight**		**Other as % of weight**	
PC	**46,7 %**	Copper alloys	**1,9 %**	Accumulators	**23,3 %**
PP	**0,3 %**	Steel	**0,2 %**	Electronic cards	**17,1 %**
PS	**0,2 %**				
PE	**0,1 %**				
				Packaging as % of weight	
				Paper (Packaging)	**10,2 %**
Total plastics	**47,4 %**	**Total metals**	**2,1 %**	**Total other and packaging**	**50,6 %**

Estimated recycled material content: 14 % by mass.

Weight of the product 6 616 08	**592 g** (with unit packaging)

Plastics as % of weight		**Metals as % of weight**		**Other as % of weight**	
PC	**47,0 %**	Copper alloys	**1,9 %**	Accumulators	**23,4 %**
PP	**0,3 %**	Steel	**0,2 %**	Electronic cards	**17,1 %**
PS	**0,2 %**				
PE	**0,1 %**				
				Packaging as % of weight	
				Paper (Packaging)	**9,8 %**
Total plastics	**47,6 %**	**Total metals**	**2,1 %**	**Total other and packaging**	**50,3 %**

Estimated recycled material content: 13 % by mass.

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CONSTITUENT MATERIALS (CONTINUED)

Weight of the product 6 616 09	**656 g** (with unit packaging)

Plastics as % of weight		**Metals as % of weight**		**Other as % of weight**	
PC	**42,7 %**	Copper alloys	**1,7 %**	Accumulators	**28,3 %**
PP	**0,3 %**	Steel	**0,2 %**	Electronic cards	**17,4 %**
PS	**0,2 %**				
PE	**< 0,1 %**				
				Packaging as % of weight	
				Paper (Packaging)	**9,3 %**
Total plastics	**43,2 %**	**Total metals**	**1,9 %**	**Total other and packaging**	**54,9 %**

Estimated recycled material content: 14 % by mass.

Weight of the product 6 616 11	**643 g** (with unit packaging)

Plastics as % of weight		**Metals as % of weight**		**Other as % of weight**	
PC	**43,6 %**	Copper alloys	**1,7 %**	Accumulators	**28,9 %**
PP	**0,3 %**	Steel	**0,2 %**	Electronic cards	**16,1 %**
PS	**0,2 %**				
PE	**< 0,1 %**				
				Packaging as % of weight	
				Paper (Packaging)	**9,1 %**
Total plastics	**44,1 %**	**Total metals**	**1,9 %**	**Total other and packaging**	**54,0 %**

Estimated recycled material content: 14 % by mass.

MANUFACTURE

The Reference Product comes from sites that, in their majority, 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 truck from our warehouse to the local point of distribution into the market in Europe.

Packaging is compliant with European directive 2004/12/EC concerning packaging and packaging waste. At their end of life the recyclability rate is 100 % (in % of packaging weight).

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INSTALLATION

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

USE

Servicing and maintenance:
changing 2 battery packs: the modeling is based on a lifetime of batteries 4 years, twice the battery pack below on a modeled life of 10 years (in addition with batteries supplied in the product).

Cat. Numbers	Quantity	Type of batteries	Weight	Weight of product	% of the reference product's weight
6 616 01	1	Battery AA Ni-Cd 0.8 Ah 2.4 V HT stick with connector (Ref 0 610 87)	47 g	499 g	9 %
6 616 02		Battery Cs Ni-Cd 1.5 Ah 2.4 V HT stick with connector (Ref 0 610 92)	95 g	551 g	17 %
6 616 05		Battery Cs Ni-Cd 1.5 Ah 3.6 V HT stick with connector	140 g	593 g	24 %
6 616 08			140 g	592 g	24 %
6 616 09		Battery Cs Ni-Cd 1.5 Ah 4.8 V HT stick with connector (Ref 0 610 93)	186 g	656 g	28 %
6 616 11			186 g	643 g	29 %

Consumable:
no consumables are necessary to use this type of product.

END OF LIFE

Development teams integrate product end-of-life factors in 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.

• **Elements to process specifically**:
This product falls within the scope of the WEEE directive (2002/96/EC). Therefore it must be processed through local WEEE recovery/recycling channels. In accordance with the requirements of this Directive, the following components must be removed and sent to specific channels for processing which comply with the WEEE Directive:

- accu NiCd : 47 g*
- PWB > 10cm² (intermediaire) : 102 g
- plastic parts with brominated flame retardant : 0 g

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

• **End of life channels**:
In France the sale of products falling with the scope of the European Directive on Waste Electrical and Electronic Equipment (WEEE) is subject to a contribution to the eco-organisations Recylum and ERP, responsible for the end of life management of products.

• **Recyclability rate:**
Calculated using the method described in technical report IEC/TR 62635, the recyclability rate of the product is estimated at 85 %. 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 end-of-life electrical and electronic products.

Separated into:

- plastic materials (excluding packaging) : 54 %
- metal materials (excluding packaging) : 2 %
- other materials (excluding packaging) : 17 %
- packaging (all types of materials) : 12 %

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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 of products marketed and used in France in compliance with NF C 15-100 and associated product standards.

The following modelling elements were taken into account:

<table>
<tr><td>Manufacture</td><td>Unit packaging taken into account. As required by the "PEP ecopassport" programme all transport for the manufacturing of the Reference Product, including materials and components, has been taken in account.</td></tr>
<tr><td>Distribution</td><td>Transport between the last Group distribution centre and an average delivery to the sales area.</td></tr>
<tr><td>Installation</td><td>Installation components not delivered with the product are not taken into account.</td></tr>
<tr><td>Use</td><td>• Changing 2 battery packs: the modeling is based on a lifetime of batteries 4 years, twice the battery pack below on a modeled life of 10 years (in addition with batteries supplied in the product).
<table>
<tr><th>Cat. Numbers</th><th>Quantity</th><th>Type of batteries</th><th>Weight</th><th>Weight of product</th><th>% of the reference product's weight</th></tr>
<tr><td>6 616 01</td><td rowspan="6">1</td><td>Battery AA Ni-Cd 0.8 Ah 2.4 V HT stick with connector (Ref 0 610 87)</td><td>47 g</td><td>499 g</td><td>9 %</td></tr>
<tr><td>6 616 02</td><td>Battery Cs Ni-Cd 1.5 Ah 2.4 V HT stick with connector (Ref 0 610 92)</td><td>95 g</td><td>551 g</td><td>17 %</td></tr>
<tr><td>6 616 05</td><td rowspan="2">Battery Cs Ni-Cd 1.5 Ah 3.6 V HT stick with connector</td><td>140 g</td><td>593 g</td><td>24 %</td></tr>
<tr><td>6 616 08</td><td>140 g</td><td>592 g</td><td>24 %</td></tr>
<tr><td>6 616 09</td><td rowspan="2">Battery Cs Ni-Cd 1.5 Ah 4.8 V HT stick with connector (Ref 0 610 93)</td><td>186 g</td><td>656 g</td><td>28 %</td></tr>
<tr><td>6 616 11</td><td>186 g</td><td>643 g</td><td>29 %</td></tr>
</table>
• No consumables are necessary to use this type of product.
• Product category: active product.
• Use scenario: for a 10 years working life, in continuous operation at 100 % rated load 1.3 W 230 V~ for 100 % of the time. This modelling duration does not constitute a minimum durabilty requirement.
• Energy model: Europe-EU 27 ; electricity mixte AC, final consumer - 2002.</td></tr>
<tr><td>End of life</td><td>In view of the data avalaible on the date of creation of the document, and in accordance with the requirements of the PCR of the «PEP ecopassport» programme, transport of the Reference Product by road only once, over a distance of 1000 km, to a processing site at end of life was counted.</td></tr>
<tr><td>Software used</td><td>EIME V5 and its database «Legrand-2012-08-22 version 2» made from the database «CODDE-2012-07»</td></tr>
</table>

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ENVIRONMENTAL IMPACTS (continued)

		Total for Life cycle		Raw material and manufacture		Distribution		Installation		Use		End of life	
Mandatory indicators	**Global warming**	**7,28E+04**	**g~CO_2 eq.**	4,52E+03	**6 %**	4,67E+01	**< 1 %**	0,00E+00	**0 %**	6,82E+04	**94 %**	3,85E+01	**< 1 %**
	Ozone depletion	**1,58E-02**	**g~CFC-11 eq.**	4,03E-04	**3 %**	3,30E-05	**< 1 %**	0,00E+00	**0 %**	1,54E-02	**97 %**	2,73E-05	**< 1 %**
	Water eutrophication	**3,54E+02**	**g~PO_4^{3-}eq.**	3,51E+02	**99 %**	7,77E-04	**< 1 %**	0,00E+00	**0 %**	2,56E+00	**< 1 %**	6,41E-04	**< 1 %**
	Photochemical ozone creation	**6,42E+00**	**g~C_2H_4 eq.**	1,81E+00	**28 %**	4,05E-02	**< 1 %**	0,00E+00	**0 %**	4,54E+00	**71 %**	3,35E-02	**< 1 %**
	Air acidification	**1,63E+01**	**g~H+ eq.**	1,00E+00	**6 %**	5,95E-03	**< 1 %**	0,00E+00	**0 %**	1,53E+01	**94 %**	5,09E-03	**< 1 %**
	Total energy depletion	**1,46E+03**	**MJ**	7,53E+01	**5 %**	5,90E-01	**< 1 %**	0,00E+00	**0 %**	1,38E+03	**95 %**	4,87E-01	**< 1 %**
	Water depletion	**2,59E+02**	**dm^3**	4,11E+01	**16 %**	5,60E-02	**< 1 %**	0,00E+00	**0 %**	2,18E+02	**84 %**	4,63E-02	**< 1 %**
Optional indicators	**Raw material depletion**	**1,38E-13**	**$year^{-1}$**	6,21E-14	**45 %**	8,05E-19	**< 1 %**	0,00E+00	**0 %**	7,56E-14	**55 %**	6,64E-19	**< 1 %**
	Air toxicity	**1,91E+07**	**m^3**	1,37E+06	**7 %**	8,80E+03	**< 1 %**	0,00E+00	**0 %**	1,77E+07	**93 %**	7,53E+03	**< 1 %**
	Water toxicity	**1,03E+03**	**m^3**	1,00E+03	**97 %**	6,51E-03	**< 1 %**	0,00E+00	**0 %**	3,01E+01	**3 %**	5,37E-03	**< 1 %**
	Hazardous waste production	**7,55E-02**	**kg**	6,11E-02	**81 %**	1,74E-05	**< 1 %**	0,00E+00	**0 %**	1,44E-02	**19 %**	1,43E-05	**< 1 %**

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

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ECO-SOLUTION

Reference rate 6 616 01	Phase of Installation doesn't present significant difference with the Reference Product	Reference rate 6 616 02		
IP 42 - IK 07 - 70 lm - 1 H		IP 42 - IK 07 - 100 lm - 1H		
All indicators		Manufacturing	Use	Distribution and End of Life
1	Global Warming Potential	1,1	1,5	1,1
	Ozone Depletion Potential	1,2	1,5	
	Water Eutrophication	1	1,9	
	Photochemical Ozone Creation Potential	1,1	1,5	
	Air Acidification	1,4		
	Energy Depletion	1,2		
	Water Depletion	1,6	1,6	
	Raw Material Depletion		2	
	Air toxicity	1,3	1,5	
	Water Toxicity	1		
	Hazardous Waste Production		1,6	

Reference rate 6 616 01	Phase of Installation doesn't present significant difference with the Reference Product	Reference rate 6 616 05		
IP 42 - IK 07 - 70 lm - 1 H		IP 42 - IK 07 - 160 lm - 1H		
All indicators		Manufacturing	Use	Distribution and End of Life
1	Global Warming Potential	1,2	1,6	1,2
	Ozone Depletion Potential	1,3	1,5	
	Water Eutrophication	1	2,6	
	Photochemical Ozone Creation Potential	1,3	1,7	
	Air Acidification	1,8	1,6	
	Energy Depletion	1,3		
	Water Depletion	2,1	1,8	
	Raw Material Depletion	2,2	3	
	Air toxicity	1,6	1,6	
	Water Toxicity	1	1,5	
	Hazardous Waste Production	1,1	1,8	

Reference rate 6 616 01	Phase of Installation doesn't present significant difference with the Reference Product	Reference rate 6 616 08		
IP 42 - IK 07 - 70 lm - 1 H		IP 42 - IK 07 - 200 lm - 1H		
All indicators		Manufacturing	Use	Distribution and End of Life
1	Global Warming Potential	1,2	1,7	1,2
	Ozone Depletion Potential			
	Water Eutrophication	1	2,7	
	Photochemical Ozone Creation Potential	1,2	1,8	
	Air Acidification	1,7	1,7	
	Energy Depletion	1,3		
	Water Depletion	2,1	1,9	
	Raw Material Depletion	2,2	3	
	Air toxicity	1,6	1,8	
	Water Toxicity	1	1,7	
	Hazardous Waste Production	1,1	2,0	

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ECO-SOLUTION (CONTINUED)

Reference rate 6 616 01	Phase of Installation doesn't present significant difference with the Reference Product	Reference rate 6 616 09		
IP 42 - IK 07 - 70 lm - 1 H		IP 42 - IK 07 - 350 lm - 1H		
All indicators		Manufacturing	Use	Distribution and End of Life
1	Global Warming Potential	1,4	2,2	1,3
	Ozone Depletion Potential	1,3		
	Water Eutrophication	1	3,5	
	Photochemical Ozone Creation Potential	1,4	2,3	
	Air Acidification	2,1	2,2	
	Energy Depletion	1,5		
	Water Depletion	2,6	2,5	
	Raw Material Depletion	2,8	3,9	
	Air toxicity	2	2,2	
	Water Toxicity	1		
	Hazardous Waste Production	1,2	2,5	

Reference rate 6 616 01	Phase of Installation doesn't present significant difference with the Reference Product	Reference rate 6 616 11		
IP 42 - IK 07 - 70 lm - 1 H		IP 42 - IK 07 - 90 lm - 3H		
All indicators		Manufacturing	Use	Distribution and End of Life
1	Global Warming Potential	1,3	2,3	1,3
	Ozone Depletion Potential	1,2	2,2	
	Water Eutrophication	1	3,5	
	Photochemical Ozone Creation Potential	1,3	2,4	
	Air Acidification	2,1	2,3	
	Energy Depletion	1,4		
	Water Depletion	2,6	2,6	
	Raw Material Depletion	2,8	3,9	
	Air toxicity	1,9	2,3	
	Water Toxicity	1	2,2	
	Hazardous Waste Production	1,1	2,6	

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-2015-251-V1-EN	Drafting rule: PCR : PEP-PCR-ed 2.1-FR-2012 12 11 supplemented by PSR : PSR-0007-ed1-FR-2013 04 09
Authorisation number of checker: VH23	Programme information: **www.pep-ecopassport.org**
Date of issue: 10-2015	Validity period: 4 years
Independent verification of the declaration and data, in accordance with ISO 14025:2006 Internal ☒ External ☐	
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 programme	