Legrand North America
Data Communications Division
125 Eugene O'Neill Drive
New London, CT 06320
1.877.BY.LEGRAND (295.3472)
www.legrand.us

Product Environmental Profile

Ortronics® Breakout Harness Assemblies

LEGRAND COMPANY OVERVIEW

• Designed to Be Better – Our Commitment to Sustainability
At Legrand®, our sustainability commitment translates into greater benefits and tangible value for our customers, business partners, employees, and the broader community.

• Better Performance
We provide building solutions to meet many building performance goals from sustainability and energy efficiency to productivity and occupant well being. The right choice in network and electrical infrastructure can play a key role in many facets of building performance. Our products help ensure electrical safety. They offer choice and flexibility in space design. They are designed to reduce installation time and material waste on site. Because we know buildings consume a great deal of energy, we offer a range of products and solutions that reduce energy consumption from lighting to plug load to data centers.

• Better Solutions
We offer a wide range of innovative solutions for the building, while constantly evolving our design and development processes to improve the environmental profile of our products. Through active monitoring and research, we serve as an expert resource for market trends and building and product performance standards to keep our customers at the top of their game.

• Better Operations
We focus on operational excellence because we believe optimizing the way we manage energy, water and waste is not only good for the environment, it's good for business. As part of the Department of Energy's Better Building, Better Plants Challenge (BBBP) Legrand has reduced its energy intensity by over 30% across 14 sites in the United States in just three years. Integrating sustainability into the way we run our operations makes us more competitive – and a better business partner.

For information on Legrand PEP's and other sustainability initiatives, scan the QR code to be brought to our Product Sustainability page.

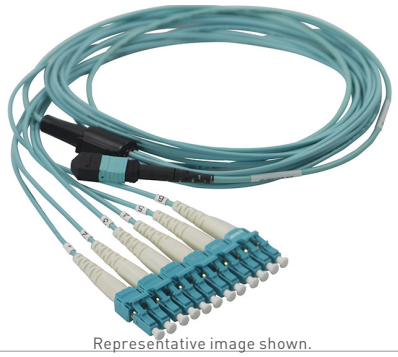
LEGRAND'S ENVIRONMENTAL COMMITMENTS

• Incorporate environmental management into our industrial sites
Of all Legrand sites worldwide, over 85% are ISO 14001 certified (sites belonging to Legrand 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
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	Connects trunk cable to another device and provides the transition from MTP connectors to LC connectors. Transmits a communication signal on 1 m according to TIA-568-C.3-2009 for multimode (OM3) fiber, during a 10 year typical lifetime.
Reference Product	 Representative image shown.
	Part Number: OR-H3TFMNNZ1MPZ01M
	HiLOC harness assembly, breakout legs not staggered, plenum

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PEP ecopassport®

PRODUCTS CONCERNED

The environmental data is representative of the following products:

HiLOC™ Harnesses
OR-H A B C E D YP XL ZP XXL
- A = performance tier
- B = fiber count and polarity
- C = fiber type
- E = cable jacket material
- D = end A stagger
- YP and ZP = ends A and B connector types
- XL and XXL = length of ends A and B (meters or feet)

Harness Cable Assemblies
OR-C A B C E D YP XL ZP XXL
- A = performance tier
- B = fiber count and polarity
- C = fiber type
- E = cable jacket material
- D = end A stagger
- YP and ZP = ends A and B connector types
- XL and XXL = length of ends A and B (meters or feet)

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/CE.

Total weight of Reference Product (with unit packaging)	**5.2 oz (148 g)**

Plastics as % of weight		**Metals as % of weight**		**Other as % of weight**	
PVC	**41.1%**	Aluminum	**2.0%**	Optical Fiber Cable	**20.3%**
PC-ABS	**3.8%**	Copper Alloy	**0.4%**	Ceramic	**<0.1%**
PP	**3.1%**	Stainless Steel	**0.3%**		
PBT + 30% glass filled	**0.8%**				
PEI	**3.2%**				
TPE	**7.0%**			**Packaging as % of weight**	
Aramid Fiber	**6.1%**			PE (low density)	**7.5%**
Other plastics	**0.4%**			Paper	**4.0%**
Total plastics	**65.5%**	**Total metals**	**2.7%**	**Total other and packaging**	**31.8%**

Estimated recycled material content: 4% of weight.

MANUFACTURING

The Reference Product comes from sites that have received ISO 14001 certification.

DISTRIBUTION

Products are distributed from logistics centers located to optimize transport efficiency. Information on the distance of distribution is not available so the PCR hypothesis for "Intercontinental transport", 2175 miles (3500 km) by heavy truck, was used. This represents transportation of the Reference Product from our warehouse to the local point of distribution in the North American market.

INSTALLATION

No electricity is required for installing the Reference Product.

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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 this type of product.

END OF LIFE

Development teams integrate product end-of-life factors in the design phase.

• **Hazardous waste* contained in the product:** no hazardous waste
(*) Hazardous waste as defined by European Commission decision 2000/532/EC.

• **Recycling rate:**
Calculated using the method described in the IEC/TR 62635 technical report, the recyclability rate of the product is estimated as 55%. This value is based on data collected from a technological channel using industrial procedures. It does not pre-validate the effective use of this channel for end-of-life electrical and electronic products.

Separated into:	(% mass of Reference Product without packaging)
- plastic materials (excluding packaging):	52%
- metal materials (excluding packaging):	3%
- other materials (excluding packaging):	0%
Recycling rate of packaging (all types of materials):	34% (% mass of packaging)

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 North America.

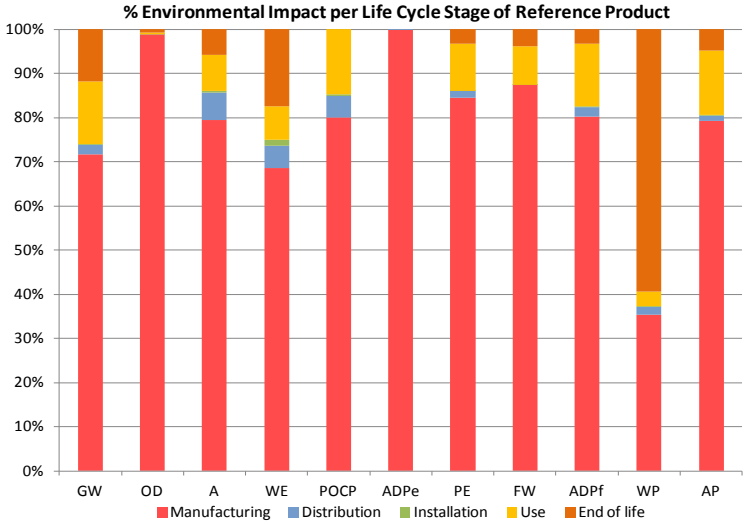
The following modelling elements were taken into account:

Manufacturing	Packaging taken into account up to first level packaging. As required by the PEP ecopassport program, all transport for the manufacturing of the Reference Product, including materials and components, has been taken into account. The waste generated during manufacturing phase has been taken into account.
Distribution	Transport between the last distribution center and an average delivery to the sales area.
Installation	The end-of-life of the packaging (0.6 oz or 17 g) is taken into account at this phase.
Use	• Under normal conditions of use, this type of product requires no servicing or maintenance. • No consumables are necessary to use this type of product. • Use scenario: 10 year working life operating 100% of the time, according to the data center application defined in Annex 1 of the wires, cables and accessories specific rules (PSR0001). This modelling duration does not constitute a minimum durability requirement. The power consumption considered for the use scenario of the patch cord is the insertion loss from the connectors, 0.109mW per fiber as stated in the LCA report. This value is derived from the PSR0001 draft. • Energy model: Electricity(US) - 2009
End of life	In accordance with the PSR0001 end of life scope, the Reference Product is transported locally 621.37 miles (1000km) by truck. Metal and plastic materials undergo separation and grinding. 100% of the metals are transported locally 621.37 miles (1000km) by truck to a manufacturing site for reuse after grinding and all other materials, not including packaging, are disposed of at a landfill.
Software used	EIME V5 and its database "CODDE-2015-04" and the indicators defined in the PCR ed 3 in alignment with the EN15804 standard

ENVIRONMENTAL IMPACTS (continued)

	Total for Life cycle		Raw material and manufacturing		Distribution		Installation		Use		End of life	
Global warming (GW)	**1.12E+00**	**kg CO_2 eq.**	8.00E-01	**72%**	2.58E-02	**2%**	1.70E-03	**< 1%**	1.59E-01	**14%**	1.31E-01	**12%**
Ozone depletion (OD)	**7.01E-07**	**kg CFC-11 eq.**	6.93E-07	**99%**	5.22E-11	**< 1%**	3.66E-11	**< 1%**	2.88E-09	**< 1%**	5.15E-09	**< 1%**
Acidification of soil and water (A)	**1.86E-03**	**kg SO_2 eq.**	1.47E-03	**79%**	1.16E-04	**6%**	6.87E-06	**< 1%**	1.52E-04	**8%**	1.08E-04	**6%**
Water eutrophication (WE)	**5.30E-04**	**kg PO_4^{3-} eq.**	3.63E-04	**69%**	2.66E-05	**5%**	7.72E-06	**1%**	4.04E-05	**8%**	9.19E-05	**17%**
Photochemical ozone creation (POCP)	**1.65E-04**	**kg C_2H_4 eq.**	1.32E-04	**80%**	8.23E-06	**5%**	5.23E-07	**< 1%**	2.43E-05	**15%**	5.15E-09	**< 1%**
Depletion of abiotic resources - elements (ADPe)	**2.23E-05**	**kg Sb eq.**	2.23E-05	**100%**	1.03E-09	**< 1%**	1.02E-10	**< 1%**	1.56E-09	**< 1%**	3.22E-09	**< 1%**
Total use of primary energy (PE)	**2.56E+01**	**MJ**	2.16E+01	**85%**	3.65E-01	**1%**	2.58E-02	**< 1%**	2.72E+00	**11%**	8.40E-01	**3%**
Net use of fresh water (FW)	**3.25E-03**	**m^3**	2.84E-03	**87%**	2.31E-06	**< 1%**	1.29E-06	**< 1%**	2.80E-04	**9%**	1.25E-04	**4%**
Depletion of abiotic resources – fossil fuels (ADPf)	**1.76E+01**	**MJ**	1.41E+01	**80%**	3.62E-01	**2%**	2.41E-02	**< 1%**	2.51E+00	**14%**	5.69E-01	**3%**
Water pollution (WP)	**2.40E+02**	**m^3**	8.50E+01	**35%**	4.24E+00	**2%**	2.07E-01	**< 1%**	7.82E+00	**3%**	1.43E+02	**59%**
Air pollution (AP)	**9.26E+01**	**m^3**	7.34E+01	**79%**	1.06E+00	**1%**	2.04E-01	**< 1%**	1.35E+01	**15%**	4.50E+00	**5%**

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



The environmental impact of the Reference Product occurs predominantly during the manufacturing phase, with the exception of the high impact of water pollution during the End of Life phase.

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ENVIRONMENTAL IMPACTS (continued)

For products other than the Reference Product, the environmental impacts for Manufacturing and Use can be calculated by multiplying the number of fibers (with the default number of fibers being 12) by each impact. For example, to calculate the impacts for a 24-fiber harness, multiply each impact by 2. Impacts for Distribution are proportional to mass and impacts for Installation are the same as the Reference Product.

The environmental impacts are based on the default length of 1 m of cable for each end of the harness. To extrapolate different lengths of patch cord, multiply the impacts by a scale factor corresponding to the desired length relative to 1 m. For example, for a 5 m cable multiply the impacts by 5. This also applies with conversions from meters to feet, where 1 m = 3.28 ft.

Registration number: LGRP-00017-V01.01-EN	Drafting rules: "PCR-ed3-EN-2015 04"
Verifier's accreditation number: VH02	Information and reference documents: **www.pep-ecopassport.org**
Date of issue: 10-2015	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"	
In compliance with ISO 14040:2006: "Environmental management – LCA – Principles and framework" In compliance with ISO 14044:2006: "Environmental management – LCA – Requirements and guidelines" In alignment with EN 15804:2012+A1:2013: "Sustainability of construction works - EPD's - Core rules for the product category of construction products"	