

# Product Environmental Profile

## LCS 3 Optical Fiber cable




### 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

<b>Function</b>	To transmit one communication signal on 1m according to 100BASE-LX protocol, OS and OM category, during 10 years and a 25% use rate in accordance with the standards in force EN 50173-2, ISO IEC 11801 Lifetime and use rate correspond to the application LAN: Tertiary as defined in the table given in Appendix 6.1. of the specific rules for wire, cables and accessories.
<b>Reference Product</b>	<div style="text-align: center;">  </div> <p>Cat.No LG-032502</p> <p>Fiber cable OS2 loose tube 4 cores indoor/outdoor LSZH.</p>

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:

<p><b>Catalogue Numbers</b></p> <ul style="list-style-type: none"> <li>LG-032502 - LG-032503 - LG-032510 - LG-032511 - LG-032512 - LG-032514 - LG-032518 - LG-032519 - LG-032526 - LG-032537 - LG-032538 - LG-032539 - LG-032543 - LG-032544 - LG-032545 - LG-032549 - LG-032550 - LG-032551 - LG-032552 - LG-032553 - LG-032665 - LG-032666 - LG-032667 - LG-032668</li> </ul> <p>The PEP has been developed taking into account one meter of cable and for 1 core. The effective impact of the product shall be calculated by the PEP user multiplying impacts by the number of meters used and the number of cores.</p>
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# Product Environmental Profile

## LCS 3 Optical Fiber cable



### ■ 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 amended by delegated directive (EU) 2015/863, and its amendment 2017/2102/EU.

<b>Total weight of Reference Product</b>	<b>0.08 kg</b> (all packaging included)
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Product alone weight 0.06 kg				
Plastics as % of weight		Metals as % of weight		Other as % of weight
PP	60.1%			Glass 15.6%
PET	0.3%			

Packaging (alone) : 0.02 kg				
PP	7.5%	steel	0.7%	wood 15.6%
PE	0.1%			Paper <0.1%

<b>Total plastics : 0.05 kg</b>	<b>68.0 %</b>	<b>Total metals : 0.00 kg</b>	<b>0.7 %</b>	<b>Total others : 0.03 kg</b>	<b>31.3 %</b>
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At the date of edition of this document, the content of recycled material(s) is :

- Product alone (excluding packaging): 0% by mass
- Packaging only: 0% by mass



### ■ MANUFACTURE

This Reference Product comes from sites that have received ISO14001 certification. The final assembly site is located at 82102 Bratislava SLOVAKIA.



### ■ 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 19000 km by Boat and 1000 km by Truck from our warehouse to the local point of distribution into the market all around the world.

Packaging is compliant with applicable regulation.



### ■ INSTALLATION

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



### ■ USE

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



### 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.



### 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 worldwide marketed products. The datasets collected in this PEP are representative of the year 2024.

For each phase, the following modelling elements were taken in account:

<b>System Limit</b>	<b>Manufacture A1-A3</b>	Materials and components of the product, all transport for the manufacturing, the packaging and the waste generated by the manufacturing.
	<b>Distribution A4</b>	Transport between the last Group distribution centre and an average delivery point in the sales area.
	<b>Installation A5</b>	The end of life of the packaging.
	<b>Use B1-B7</b>	<ul style="list-style-type: none"> <li>▪ Product category: Communication and data wires and cables.</li> <li>▪ Use scenario: Continuous operation (100% of the time) for 10 years at 25% of rated load. This modelling period does not constitute a maximum durability requirement.</li> <li>▪ Energy model: Electricity Mix; production mix; Low voltage ; Global, GLO - 2020.</li> </ul>
	<b>End of life C1-C4</b>	Choice of end-of-life by default model for PCR-ed4-EN-2021 09 06
<b>D Module</b>	Module D is calculated according to PCR-ed4-EN-2021 09 06 based on the materials recycled and the modelled end-of-life scenario. It expresses the net benefits and burdens beyond the boundaries of the system, and are not to be included in the life cycle totals.	
<b>Software and data-base used</b>	EIME V6 & its database 2024-04-15 The set of indicators used is Indicators for PEF EF 3.1 (Compliance: PEP ed.4, EN15804+A2) v1.0	

Unless otherwise indicated the modelling energetic mix are those integrated in the data modules used from the aforementioned database.

# Product Environmental Profile

## LCS 3 Optical Fiber cable



### ENVIRONMENTAL IMPACTS

The PEP has been developed taking into account one meter of cable and for 1 core. The effective impact of the product shall be calculated by the PEP user multiplying impacts by the number of meters used and the number of cors.

	Total Life Cycle		Manufacturing	Distribution	Installation	Use <sup>(1)</sup>			End of Life	Module D
			A1-A3	A4	A5	Total B1-B7	B2	B6	C1-C4	
Climate change - total	6.04E-02	kg CO <sub>2</sub> eq.	4.17E-02	6.09E-03	6.45E-03	0*	0.00E+00	0*	6.20E-03	-1.15E-02
Climate change - fossil fuels	5.94E-02	kg CO <sub>2</sub> eq.	4.52E-02	6.09E-03	1.93E-03	0*	0.00E+00	0*	6.19E-03	-1.17E-02
Climate change - biogenics	9.84E-04	kg CO <sub>2</sub> eq.	-3.55E-03	0.00E+00	4.52E-03	0*	0.00E+00	0*	6.63E-06	1.99E-04
Climate change - land use and land use transformation	8.91E-12	kg CO <sub>2</sub> eq.	8.91E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ozone depletion	3.17E-09	kg CFC-11 eq.	2.81E-09	7.91E-12	7.91E-11	0*	0.00E+00	0*	2.76E-10	0.00E+00
Acidification (AP)	5.96E-04	mole of H <sup>+</sup> eq.	2.55E-04	2.84E-04	1.33E-05	0*	0.00E+00	0*	4.41E-05	-5.13E-05
Freshwater eutrophication	7.43E-07	kg P eq.	7.33E-07	2.09E-09	1.55E-09	0*	0.00E+00	0*	5.68E-09	-1.03E-07
Marine aquatic eutrophication	1.12E-04	kg of N eq.	4.92E-05	4.99E-05	2.99E-06	0*	0.00E+00	0*	1.03E-05	-8.52E-06
Terrestrial eutrophication	1.23E-03	mole of N eq.	5.15E-04	5.46E-04	3.94E-05	0*	0.00E+00	0*	1.30E-04	-9.24E-05
Photochemical ozone formation	3.53E-04	kg NMVOC eq.	1.74E-04	1.41E-04	8.40E-06	0*	0.00E+00	0*	2.93E-05	-2.57E-05
Depletion of abiotic resources - elements	2.47E-09	kg Sb eq.	1.68E-09	2.17E-10	1.43E-10	6.97E-13	0.00E+00	6.97E-13	4.31E-10	-1.36E-10
Depletion of abiotic resources - fossil fuels	1.61E+00	MJ	1.39E+00	7.70E-02	3.57E-02	0*	0.00E+00	0*	1.12E-01	-3.20E-01
Water requirement	2.22E-02	m <sup>3</sup> deprivation worldwide eq.	2.17E-02	2.00E-05	8.89E-05	0*	0.00E+00	0*	3.49E-04	-5.42E-04
Emission of fine particles	3.29E-09	incidence of diseases	1.81E-09	1.11E-09	8.42E-11	0*	0.00E+00	0*	2.82E-10	-2.50E-10

\*Represents less than 0.01% of the total life cycle of the reference flow

<sup>(1)</sup> For the Use phase and according to the current PCR, the information modules B1, B3, B4, B5 and B7, all having indicator values equal to «0» (zero), are not listed in this table

In accordance with current PCR rules, the environmental indicator values in the «Module D» column must not be summed with the values in the «Total Life Cycle» column

# Product Environmental Profile

## LCS 3 Optical Fiber cable



	Total Life Cycle		Manufacturing	Distribution	Installation	Use <sup>(1)</sup>			End of Life	Module D
			A1-A3	A4	A5	Total B1-B7	B2	B6	C1-C4	
Ionizing radiation, human health	4.18E-01	kBq of U235 eq.	4.14E-01	0*	7.96E-04	0*	0.00E+00	0*	3.05E-03	0.00E+00
Ecotoxicity (fresh water)	4.66E-01	CTUe	2.83E-01	3.63E-03	5.08E-02	0*	0.00E+00	0*	1.29E-01	-3.80E-04
Human toxicity, carcinogenic effects	7.58E-11	CTUh	7.39E-11	9.04E-14	4.14E-13	0*	0.00E+00	0*	1.41E-12	-3.54E-09
Human toxicity, non-carcinogenic effects	2.65E-10	CTUh	1.85E-10	2.02E-12	1.69E-11	0*	0.00E+00	0*	6.14E-11	-1.19E-12
Impacts related to land use/soil quality	6.12E-03	-	6.02E-03	0.00E+00	3.83E-05	0*	0.00E+00	0*	6.10E-05	0.00E+00
Use of renewable primary energy, excluding renewable primary energy resources used as raw materials	3.33E-02	MJ	2.10E-02	9.84E-05	2.66E-03	1.15E-05	0.00E+00	1.15E-05	9.49E-03	-3.20E-03
Use of renewable primary energy resources used as raw materials	7.63E-02	MJ	7.63E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	1.10E-01	MJ	9.72E-02	9.84E-05	2.66E-03	1.15E-05	0.00E+00	1.15E-05	9.49E-03	-3.20E-03
Use of non-renewable primary energy, excluding non-renewable primary energy resources used as raw materials	1.06E+00	MJ	8.38E-01	7.70E-02	3.57E-02	0*	0.00E+00	0*	1.12E-01	-2.16E-01
Use of non-renewable primary energy resources used as raw materials	5.53E-01	MJ	5.53E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.04E-01
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	1.61E+00	MJ	1.39E+00	7.70E-02	3.57E-02	0*	0.00E+00	0*	1.12E-01	-3.20E-01

\*Represents less than 0.01% of the total life cycle of the reference flow

<sup>(1)</sup> For the Use phase and according to the current PCR, the information modules B1, B3, B4, B5 and B7, all having indicator values equal to «0» (zero), are not listed in this table

In accordance with current PCR rules, the environmental indicator values in the «Module D» column must not be summed with the values in the «Total Life Cycle» column

# Product Environmental Profile

## LCS 3 Optical Fiber cable



	Total Life Cycle		Manufacturing	Distribution	Installation	Use <sup>(1)</sup>			End of Life	Module D
			A1-A3	A4	A5	Total B1-B7	B2	B6	C1-C4	
Use of secondary materials	0.00E+00	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	0.00E+00	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	0.00E+00	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	5.21E-04	m <sup>3</sup>	5.06E-04	4.66E-07	3.20E-06	0*	0.00E+00	0*	1.04E-05	-1.26E-05
Hazardous waste disposed of	1.92E-02	kg	1.51E-03	0.00E+00	1.87E-03	0*	0.00E+00	0*	1.58E-02	-8.18E-05
Non-hazardous waste disposed of	1.12E-02	kg	9.66E-03	1.86E-04	2.80E-04	0*	0.00E+00	0*	1.04E-03	-1.20E-04
Radioactive waste disposed of	5.11E-06	kg	4.40E-06	1.29E-07	1.15E-07	0*	0.00E+00	0*	4.61E-07	0.00E+00
Components for re-use	0.00E+00	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	2.71E-03	kg	2.91E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.42E-03	0.00E+00
Materials for energy recovery	0.00E+00	MJ by energy vector	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	0.00E+00	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of primary energy during the life cycle	1.72E+00	MJ	1.49E+00	7.71E-02	3.83E-02	0*	0.00E+00	0*	1.21E-01	-3.24E-01

Biogenic carbon content of the product	0.00E+00	kg of C	0.00E+00
Biogenic carbon content of the associated packaging	1.61E-03	kg of C	1.61E-03

\*Represents less than 0.01% of the total life cycle of the reference flow

<sup>(1)</sup> For the Use phase and according to the current PCR, the information modules B1, B3, B4, B5 and B7, all having indicator values equal to «0» (zero), are not listed in this table

In accordance with current PCR rules, the environmental indicator values in the «Module D» column must not be summed with the values in the «Total Life Cycle» column

The values of the indicators defined in the PCR-ed4-EN-2021 09 06 are available in the digital database of pep-ecopassport.org website.

# Product Environmental Profile

## LCS 3 Optical Fiber cable



The PEP has been developed taking into account one meter of cable and for 1 core. The effective impact of the product shall be calculated by the PEP user multiplying impacts by the number of meters used and the number of cores.

References	Designation	coef to apply per phase of the life cycle					
		total Life Cycle	Manu- facturing [A1-A3]	Distribu- tion [A4]	Instal- lation [A5]	Use [B1-B7]	End of life [C1-C4]
LG-032502	Fiber cable OS2 loose tube 4 cores indoor/outdoor LSZH	1.0	1.0	1.0	1.0	1.0	1.0
LG-032503	Fiber cable OS2 loose tube 8 cores indoor/outdoor LSZH	1.0	1.0	1.0	1.0	2.0	1.0
LG-032510	Fiber cable OM3 6 cores 900µm tight buffer indoor/outdoor	0.6	0.6	0.8	0.8	12.7	0.7
LG-032511	Fiber cable OM3 12 cores 900µm tight buffer indoor/outdoor	0.6	0.6	0.8	0.8	25.3	0.7
LG-032512	Fiber cable OS2 6 cores loose tube indoor/outdoor	1.0	1.0	1.0	1.0	1.5	1.0
LG-032514	Fiber cable OS2 12 cores loose tube indoor/outdoor	1.0	1.0	1.0	1.0	3.0	1.0
LG-032518	Cable OS2 loose tube 24 Cores indoor/outdoor LSZH Cca 1000m	0.9	1.0	0.6	0.6	4.5	0.5
LG-032519	Cable OM4 loose tube 24 Cores indoor/outdoor LSZH Cca 1000m	0.9	1.0	0.6	0.6	50.7	0.5
LG-032526	Fiber cable OS2 loose tube 12 cores indoor/outdoor LSZH Cca	1.0	1.0	1.0	1.0	3.0	1.0
LG-032537	Fiber cable OM3 loose tube 4 cores indoor/outdoor LSZH	1.0	1.0	1.0	1.0	8.4	1.0
LG-032538	Fiber cable OM3 loose tube 8 cores indoor/outdoor LSZH	1.0	1.0	1.0	1.0	16.9	1.0
LG-032539	Fiber cable OM3 loose tube 12 cores indoor/outdoor LSZH	1.0	1.0	1.0	1.0	25.3	1.0
LG-032543	Fiber cable OM4 loose tube 4 cores indoor/outdoor LSZH	1.0	1.0	1.0	1.0	8.4	1.0
LG-032544	Fiber cable OM4 loose tube 8 cores indoor/outdoor LSZH	1.0	1.0	1.0	1.0	16.9	1.0
LG-032545	Fiber cable OM4 loose tube 12 cores indoor/outdoor LSZH	1.0	1.0	1.0	1.0	25.3	1.0
LG-032549	Fiber cable OM4 loose tube 12 cores indoor/outdoor LSZH Cca	1.0	1.0	1.0	1.0	25.3	1.0
LG-032550	Fiber cable OS2 12 cores 900µm tight buffer indoor/outdoor	0.6	0.6	0.7	0.7	3.0	0.7
LG-032551	Fiber cable OS2 24 cores loose tube indoor/outdoor	1.0	1.0	1.0	1.0	6.0	1.0
LG-032552	Fiber cable OM3 24 cores 900µm tight buffer indoor/outdoor	0.6	0.6	0.8	0.8	50.7	0.7
LG-032553	Fiber cable OM3 24 cores loose tube indoor/outdoor	1.0	1.0	1.0	1.0	50.7	1.0
LG-032665	Fiber cable OM4 6 cores 900µm tight buffer indoor/outdoor 500m	0.5	0.6	0.4	0.4	12.7	0.2
LG-032666	Fiber cable OM4 6 cores 900µm tight buffer indoor/outdoor 1000m	0.6	0.6	0.5	0.5	12.7	0.3
LG-032667	Fiber cable OM4 12 cores 900µm tight buffer indoor/outdoor 1000m	0.6	0.6	0.5	0.5	25.3	0.3
LG-032668	Fiber cable OM4 24 cores 900µm tight buffer indoor/outdoor 1000m	0.6	0.6	0.5	0.5	50.7	0.4

Registration number: <b>LGRP-00839-V02.01-EN</b>	Drafting rules: <b>PEP-PCR-ed4-2021 09 06</b> <b>Supplemented by PSR-0001-ed4-2022 11 16</b>
Verifier accreditation N°: <b>VH08</b>	Information and reference documents: <b>www.pep-ecopassport.org</b>
Date of issue: <b>07-2024</b>	Validity period: <b>5 years</b>
<b>Independent verification of the declaration and data, in compliance with ISO 14025 : 2006</b>	
Internal <input type="checkbox"/> External <input checked="" type="checkbox"/>	
The PCR review was conducted by a panel of experts chaired by Julie ORGELET (DDemain)	
PEP are compliant with NF C08-100-1:2016 and EN 50693 :2019 or NF E38-500 :2022 The elements of the present PEP cannot be compared with elements from another program	
Document in compliance with ISO 14025 : 2006: «Environmental labels and declarations. Type III environmental declarations»	

Environmental data in alignment with EN 15804: 2012 + A2 : 2019