

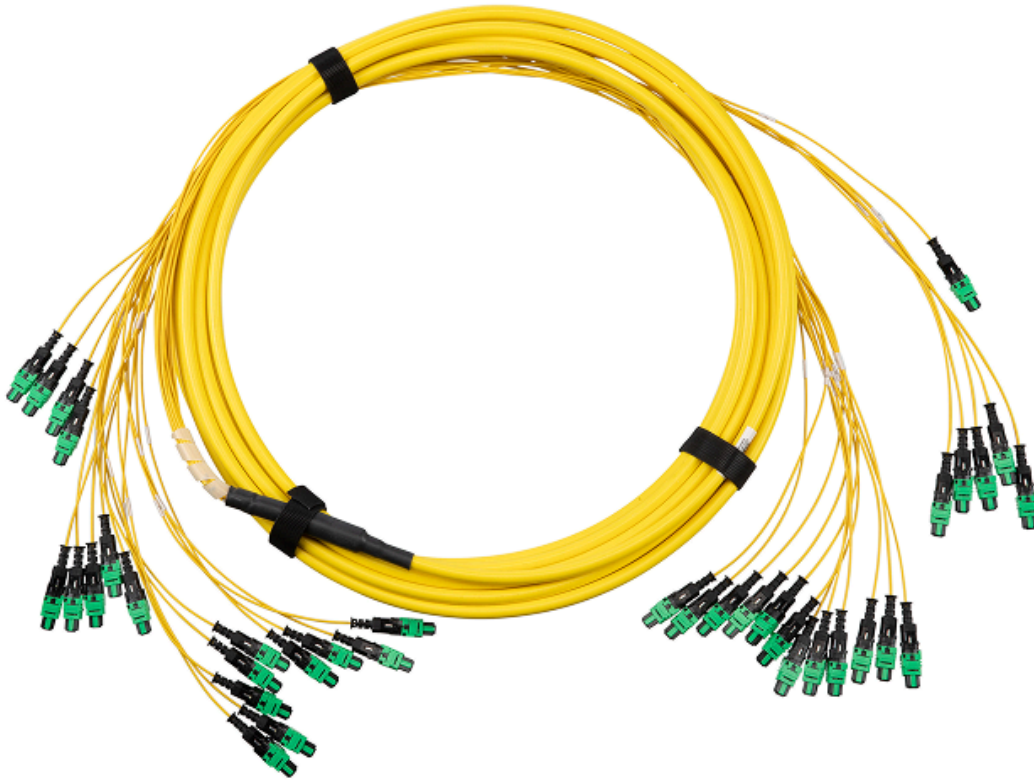


Environmental Product Declaration

Program Operator: Smart EPD®

www.smartepd.com

IN ACCORDANCE WITH ISO 14025 AND EN
15804:2012+A2:2019/AC:2021



PANDUIT®

LSZH Trunk Cable Assembly

SmartEPD-2026-130-0851-01.1

Date of Issue

May 01, 2026

Expiration Date

May 01, 2031

Last Updated

Aug 25, 2026

Refer to the EPD Library at www.smartepd.com for the latest EPD listing information



General Information

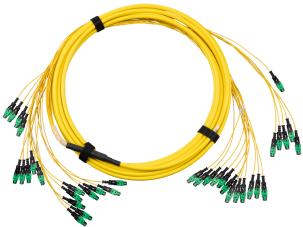
Panduit

18900 Panduit Drive, Tinley Park, IL 60487

800-777-3300

cs@panduit.com

panduit.com



Product Name:	LSZH Trunk Cable Assembly
Functional Unit:	1 unit of optical fiber used to transmit communication signals on 1m at the wavelength of 850 nm (for a multimode cable), for 10 years and at a rate of use of 100.0% in accordance with the standards in force for infrastructure telecom use
Declaration Number:	SmartEPD-2026-130-0851-01.1
Date of Issue:	May 01, 2026
Expiration:	May 01, 2031
Last updated:	August 25, 2026
EPD Scope:	Cradle to grave A1 - A3, A4, A5, B1 - B7, C1 - C4, D
Market(s) of Applicability:	Global

General Organization Information

Panduit is a global manufacturer of physical infrastructure solutions for electrical and network systems, with products deployed in industrial, commercial, and data center environments worldwide. The company is recognized for its structured cabling systems, fiber optic connectivity solutions, and network infrastructure products designed to support high-performance and reliable data transmission. Panduit's fiber optic trunk cable assemblies are used primarily in data center and enterprise network environments where high-density, pre-terminated connectivity is required. Products are deployed as backbone cabling between active equipment, patch panels, and distribution frames, enabling efficient structured cabling installations.

At Panduit, we understand that what we deliver matters: high-quality infrastructure and connectivity solutions. But it's how we deliver them that defines who we are. We remain deeply aware of our environmental responsibilities, the importance of an inclusive workplace, and the value of transparent, ethical governance. These principles guide every decision we make and shape how we serve our customers, our people, and our partners.

As we've grown, so has our commitment—to not only deliver dependable, scalable network connectivity and powerful infrastructure, but also to embed sustainability into everything we do. By integrating environmental, social, and governance principles into our operations, we're creating smarter solutions that reduce packaging waste, move products more efficiently, and support a more responsible customer journey. Today's successes are the springboard for what comes next - anticipating tomorrow's challenges so we can build a future that is more connected, resilient, and sustainable.

Further information can be found at: panduit.com

Limitations, Liability and Ownership

Environmental declarations from different programs (ISO 14025) may not be comparable. Comparison of the environmental performance of products using EPD information shall be based on the product's use and impacts at the building level, and therefore EPDs may not be used for comparability purposes when

not considering the whole building life cycle. EPD comparability is only possible when all stages of a life cycle have been considered. However, variations and deviations are possible. Example of variations: Different LCA software and background LCI datasets may lead to differences results for upstream or downstream of the life cycle stages declared. The EPD owner has sole ownership, liability, and responsibility for the EPD.

Reference Standards

Standard(s):	ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021
Core PCR:	PEP PCR Electrical, Electronic and HVAC-R Products v.4 Date of issue: September 06, 2021
Sub-category PCR:	PEP ecopassport® PROGRAM PSR Specific Rules for Wires, Cables and Accessories (PSR-0001-ed4-EN-2022 11 16) v.4 Date of issue: November 16, 2022 Valid until: November 01, 2027
Sub-category PCR review panel:	 Contact Smart EPD for more information.
General Program Instructions:	 Smart EPD General Program Instructions v.2.0, March 2025

Verification Information

LCA Author/Creator:	 Seth Rogers  PARQ  seth@parqhq.com
EPD Program Operator:	 Smart EPD  info@smartepd.com  www.smartepd.com  585 Grove St., Ste. 145, Herndon, VA 20170, USA
Verification:	Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071:  Rifat Karim  Independent Consultant  rifat.chimique@gmail.com Independent external verification of EPD, according to ISO 14025 and reference PCR(s):  Rifat Karim  Independent Consultant  rifat.chimique@gmail.com

External

External

Product Information

Functional Unit:	1 unit of optical fiber used to transmit communication signals on 1m at the wavelength of 850 nm (for a multimode cable), for 10 years and at a rate of use of 100.0% in accordance with the standards in force for infrastructure telecom use
Mass:	0.0014 kg
Reference Service Life:	10 Years
Product Specificity:	 Product Average  Product Specific

Product Description

Low smoke zero halogen LC trunk cable assemblies shall allow for rapid deployment of high-density permanent links in a single assembly for data center applications requiring quick infrastructure deployment, such as main, horizontal, and zone distribution areas. These trunk cable assemblies shall optimize cable routing requirements to ensure efficient use of pathway space and significantly reduce installation time and cost. All LC trunk cable assemblies are factory terminated and tested to deliver verified optical performance and reliability for improved network integrity at speeds of 10/25/40/50/100G and beyond.

Further information can be found at: <https://www.panduit.com/content/dam/panduit/en/products/media/6/46/546/8546/111438546.pdf>

Product Specifications

Product Classification Codes: EC3 - NetworkInfrastructure -> DataCabling
Masterformat - 27 15 23

Table 1. Material Composition

Material/Component Category	Origin	% Mass
Cable	US	100.0

Packaging Material	Origin	kg Mass
Cardboard	US	8.5E-5
Hdpepulleye	US	3.21E-6
Plastic ldpe	RoW	2.54E-5

Biogenic Carbon Content	kg C per unit
Biogenic carbon content in product	0
Biogenic carbon content in accompanying packaging	0.000144

Hazardous Materials
No regulated hazardous or dangerous substances are included in this product.

EPD Data Specificity

Primary Data Year: Jan 1, 2025 - Dec 31, 2025
Manufacturing Specificity: ✗ Industry Average
✓ Manufacturer Average

✗ Facility Specific

Averaging:
Products of the same composition and properties are manufactured at different facilities. A weighted average of production volume at each facility has been utilized for calculation purposes.

Table 2. System Boundary

Production	A1	Raw material supply	✓
	A2	Transport	✓
	A3	Manufacturing	✓
Construction	A4	Transport to site	✓
	A5	Assembly / Install	✓
Use	B1	Use	✓
	B2	Maintenance	✓
	B3	Repair	✓
	B4	Replacement	✓
	B5	Refurbishment	✓
	B6	Operational Energy Use	✓
	B7	Operational Water Use	✓
End of Life	C1	Deconstruction	✓
	C2	Transport	✓
	C3	Waste Processing	✓
	C4	Disposal	✓
Benefits & Loads Beyond System Boundary	D	Recycling, Reuse Recovery Potential	✓

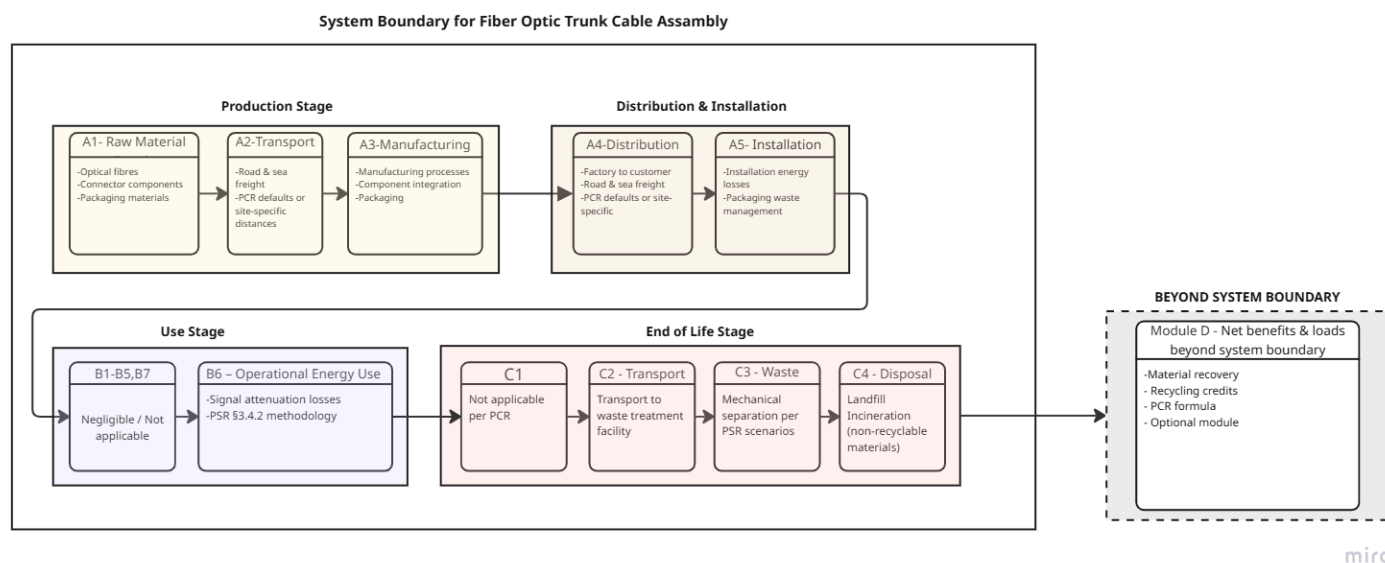
Note:
ND = Module not declared

Plants

 Arad, Romania Arad, Romania

📍 Grecia, Costa Rica Alajuela Province, Grecia, Costa Rica

Product Flow Diagram



Software And Database

LCA Software:

📄 SimaPro v. 10.2

LCI Foreground Database(s):

📄 Ecoinvent v. 3.11 | 🗑️ Cut-off by Classification

LCI Background Database(s):

📄 Ecoinvent v. 3.11 | 🗑️ Cut-off by Classification

A foreground LCI database is the database used to model the primary, site-specific data collected for this EPD. A background LCI database is the database used to model generic or non-specific data.

Data Quality

Precision & Completeness

- **Precision:** Inventory data were directly measured, calculated, or conservatively estimated from primary sources using consistent units and QA checks. Background processes from ecoinvent v3 were adopted with their documented uncertainty/precision metadata where available, preserving a transparent record of data quality.
- **Completeness:** The product system's mass balance and inventory completeness were thoroughly checked. Some exclusions were made in line with the PCR requirements, such as personnel impacts, R&D activities, business travel, and point-of-sale infrastructure. However, no data were intentionally omitted.

Consistency and Reproducibility

- **Consistency:** Primary data for all modules were consistently gathered aiming at the highest level of detail possible. Background processes were modeled mainly with the ecoinvent database. The same allocation rules, cut-off criteria, and impact assessment methods were applied throughout, ensuring methodological coherence and consistent data quality across the entire LCA model.
- **Reproducibility:** This study ensures reproducibility by providing comprehensive disclosure of input-output data, dataset choices, and modeling approaches. A knowledgeable third party should be able to approximate the results using the same data and modeling methods.

Representativeness

- **Temporal:** Primary data were collected for a 12-month period representing the 2025 calendar year to ensure the representativeness of post-consumer content. Secondary data from the ecoinvent v3 database are typically representative of recent years.
- **Geographical:** Primary data represent Panduit's production facility. Where applicable, differences in electric grid mix were considered using appropriate secondary data. The use of country-specific data ensures high geographical representativeness, and proxy data were only used when country-specific data were unavailable.
- **Technological:** Both primary and secondary data were tailored to the specific technologies studied, ensuring high technological representativeness.

Life Cycle Module Description

Modules A1–A3: The LCA model covers the production of raw materials and components for Panduit's fiber optic trunk cable assemblies (A1), which are then transported to the assembly facility (A2). The fiber cable is sourced from external suppliers, while connector components are manufactured by Panduit and assembled at each end of the cable. At the manufacturing stage (A3), cables are cut to length, furcated, and stripped before connectors are assembled, polished, tested, labelled, and packaged. Primary data for facility resource consumption — including electricity use and fuel consumption — were collected over a 12-month period and allocated by mass across all products manufactured.

Modules A4–A5: Once manufacturing is completed, finished assemblies are transported to distribution centres and from there to the installation site (A4), modelled using the default transport scenarios of the PCR. For installation (A5), a default product loss rate of 5% is applied to the reference flow and packaging waste treatment is included in accordance with the modularity principle of the PCR. Installation processes themselves are not modelled: the range of possible configurations — in terms of routing, fixings, conduit, and site conditions — is too varied to support a representative default scenario.

Modules B1–B7: Modules B1–B5 and B7 are not applicable and set to zero per PSR Section 3.2; only B6 is relevant, capturing signal attenuation losses over the reference service life calculated per PSR 3.4.4.2d.

Modules C1–C4 and D: At end of life (C1–C4), assemblies are assumed to be removed from service and directed to appropriate waste management processes. Module C1 (removal and dismantling) is excluded from the system boundary, as the variability of cable extraction conditions across installations precludes a representative default scenario. C2 covers transport to waste processing or disposal facilities. C3 encompasses mechanical separation of cable components, with material-specific end-of-life routes applied per the treatment scenarios prescribed in the PSR. Remaining fractions not subject to recovery are assigned to C4 landfill disposal. Module D, covering net benefits and loads beyond the system boundary, is optional and reported separately from Modules A–C. Where calculated, results are quantified using the end-of-life formula specified in the PCR and expressed per functional unit.

LCA Discussion

Allocation Procedure

Allocation of co-products was avoided, to the extent possible, based on the guidance given in ISO 14044:2006, 4.3, and in EN 15804+A2:2019. Energy use at the facility level was allocated by the amount of product produced. The manufacturing process does not consume water or generate wastewater or air emissions, other than those from fuel combustion. Solid waste was estimated using packaging masses and material losses and allocated following the polluter pays principle.

Cut-off Procedure

The system boundary was defined based on relevance to the goal of the study. For the raw material (A1) and process related inputs (A3), all available energy and material flow data have been included in the model.

Renewable Electricity

Energy Attribute Certificates (EACs) such as
Renewable Energy Certificates (RECs) or Power
Purchase Agreements (PPAs) are included in the
baseline reported results: ✗ No

Scenarios

Transport to the building/construction site (A4)

A4 Module

Fuel Type:	Diesel
Vehicle Type:	Truck and Trailer
Transport Distance:	3696 km
Capacity Utilization:	33 %
Packaging Mass:	0.0001131 kg
Weight of products transported:	0.001523 kg
Capacity utilization volume factor:	1
Assumptions for scenario development:	Transport distance includes finished product to distribution center and distribution center to point of sale.

Installation in to the building/construction site (A5)

A5 Module

Installation Scrap Rate Assumed:	5 %
Product Lost per Declared/Functional Unit:	0.00007047 kg
Mass of Packaging Waste Specified by Type:	0.0001131 kg
Biogenic Carbon Contained in Packaging (kg C):	0.00003924 kg
Assumptions for scenario development:	

Use (B1)

B1 Module

Declared Product Properties:
Not Applicable. Module equal to 0, Section 3.2 of the PSR

Maintenance (B2)

B2 Module

Further assumptions for scenario development: Not Applicable. Module equal to 0, Section 3.2 of the PSR

Repair (B3)

B3 Module

Further assumptions for scenario development: Not Applicable. Module equal to 0, Section 3.2 of the PSR

Replacement (B4)

B4 Module

Further assumptions for scenario development: Not Applicable. Module equal to 0, Section 3.2 of the PSR

Refurbishment (B5)

B5 Module

Further assumptions for scenario development: Not Applicable. Module equal to 0, Section 3.2 of the PSR

Operational Energy Use (B6) & Operational Water Use (B7)

B6 & B7 Modules

Equipment Power Output: 0.00006654258 kWh

Further assumptions for scenario development:

PSR-0001-ed4-EN-2022 | Multimode fibre @ 850 nm | Data center application (10 yr, 100%)

End of Life (C1 - C4)

C1 - C4 Modules

Collection Process

Collected with Mixed Construction Waste: 0.001409 kg

Recovery

Landfill: 0.0007047 kg

Incineration: 0.0007047 kg

Assumptions for scenario development:

50% of cable assembly assumed as landfilled, as per PSR Appendix D.

Reuse, Recovery and / or Recycling Potentials & Relevant Scenario Information (D)

D Module

Net Energy Benefit from Energy Recovery from Waste Treatment Declared as Export Energy in C3: 0.00179 MJ

Net Energy Benefit from Thermal Energy Due to Treatment of Waste Declared as Exported Energy in C4: 0 MJ

Net Energy Benefit from Material Flow Declared in C3 for Energy Recovery: 0.00179 MJ

Further assumptions for scenario development: 50% of material recycled for energy recovery, as per PSR Appendix D (Conservative estimate for only recovered energy as electricity)

Results

Table 3. Environmental Impact Assessment Results

EF 3.1

per 1 unit of product of optical fiber used to transmit communication signals on 1m at the wavelength of 850 nm (for a multimode cable), for 10 years and at a rate of use of 100.0% in accordance with the standards in force for infrastructure telecom use.

LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

Impact Category	Unit	Method	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	EF 3.1	8.17e-3	4.59e-4	5.93e-4	0	0	0	0	0	4.55e-5	0	0	6.23e-5	1.68e-3	2.04e-6	-1.78e-4	1.08e-2
GWP-biogenic	kg CO2 eq	EF 3.1	-1.65e-4	2.93e-7	3.80e-6	0	0	0	0	0	2.77e-7	0	0	4.03e-8	1.20e-7	3.42e-10	-1.09e-6	-1.62e-4
GWP-fossil	kg CO2 eq	EF 3.1	8.33e-3	4.59e-4	5.89e-4	0	0	0	0	0	4.51e-5	0	0	6.22e-5	1.68e-3	2.04e-6	-1.77e-4	1.10e-2
GWP-luluc	kg CO2 eq	EF 3.1	4.65e-6	1.59e-7	2.45e-7	0	0	0	0	0	9.54e-8	0	0	2.14e-8	1.30e-8	2.22e-10	-3.74e-7	4.81e-6
ODP	kg CFC11 eq	EF 3.1	6.15e-9	6.94e-12	3.08e-10	0	0	0	0	0	2.91e-13	0	0	9.42e-13	5.32e-13	2.87e-14	-1.14e-12	6.47e-9
AP	mol H+ eq	EF 3.1	4.17e-5	1.23e-6	2.21e-6	0	0	0	0	0	2.25e-7	0	0	1.49e-7	3.83e-7	1.78e-8	-8.82e-7	4.50e-5
EP-freshwater	kg P eq	EF 3.1	3.99e-6	2.83e-8	2.02e-7	0	0	0	0	0	2.17e-8	0	0	3.86e-9	5.52e-9	1.02e-10	-8.53e-8	4.17e-6
EP-marine	kg N eq	EF 3.1	9.17e-6	3.27e-7	5.01e-7	0	0	0	0	0	4.56e-8	0	0	3.99e-8	2.18e-7	8.03e-9	-1.79e-7	1.01e-5
EP-terrestrial	mol N eq	EF 3.1	7.89e-5	3.57e-6	4.36e-6	0	0	0	0	0	4.56e-7	0	0	4.34e-7	1.86e-6	8.78e-8	-1.79e-6	8.79e-5
POCP	kg NMVOC eq	EF 3.1	3.13e-5	1.95e-6	1.75e-6	0	0	0	0	0	1.35e-7	0	0	2.53e-7	4.66e-7	2.67e-8	-5.29e-7	3.54e-5
ADP-minerals&metals	kg Sb eq	EF 3.1	4.89e-8	8.80e-10	2.52e-9	0	0	0	0	0	4.39e-11	0	0	1.20e-10	8.11e-11	7.49e-13	-1.72e-10	5.24e-8
ADP-fossil	MJ	EF 3.1	1.53e-1	7.03e-3	8.21e-3	0	0	0	0	0	6.05e-4	0	0	9.56e-4	3.15e-4	2.60e-5	-2.38e-3	1.68e-1
WDP	m3 depriv.	EF 3.1	3.34e-3	2.93e-5	1.74e-4	0	0	0	0	0	6.17e-6	0	0	3.99e-6	5.43e-5	5.78e-8	-2.42e-5	3.58e-3

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

GWP = Global Warming Potential, 100 years (may also be denoted as GWP-total, GWP-fossil (fossil fuels), GWP-biogenic (biogenic sources), GWP-luluc (land use and land use change)), ODP = Ozone Depletion Potential, AP = Acidification Potential, EP = Eutrophication Potential, SFP = Smog Formation Potential, POCP = Photochemical oxidant creation potential, ADP-Fossil = Abiotic depletion potential for fossil resources, ADP-Minerals&Metals = Abiotic depletion potential for non-fossil resources, WDP = Water deprivation potential, PM = Particulate Matter Emissions, IRP = Ionizing radiation, human health, ETP-fw = Eco-toxicity (freshwater), HTP-c = Human toxicity (cancer), HTP-nc = Human toxicity (non-cancer), SQP = Soil quality index.

Comparisons cannot be made between product-specific or industry average EPDs at the design stage of a project, before a building has been specified. Comparisons may be made between product-specific or industry average EPDs at the time of product purchase when product performance and specifications have been established and serve as a functional unit for comparison. Environmental impact results

shall be converted to a functional unit basis before any comparison is attempted. Any comparison of EPDs shall be subject to the requirements of ISO 21930 or EN 15804. EPDs are not comparative assertions and are either not comparable or have limited comparability when they have different system boundaries. EPDs are not comparative assertions and are either not comparable or have limited comparability when they have different system boundaries, are based on different product category rules or are missing relevant environmental impacts. Such comparison can be inaccurate, and could lead to erroneous selection of materials or products which are higher-impact, at least in some impact categories.

Table 4. Resource Use Indicator

per 1 unit of product of optical fiber used to transmit communication signals on 1m at the wavelength of 850 nm (for a multimode cable), for 10 years and at a rate of use of 100.0% in accordance with the standards in force for infrastructure telecom use.

Indicator	Unit	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	Total
PERE	MJ	1.88e-2	7.92e-5	9.45e-4	0	0	0	0	0	7.91e-5	0	0	1.08e-5	1.23e-5	2.18e-7	-3.11e-4	1.96e-2
PERM	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+0
PERT	MJ	9.86e-3	3.73e-5	4.96e-4	0	0	0	0	0	3.47e-5	0	0	5.08e-6	5.90e-6	1.21e-7	-1.36e-4	1.03e-2
PENRE	MJ	1.53e-1	7.03e-3	8.21e-3	0	0	0	0	0	6.05e-4	0	0	9.56e-4	3.15e-4	2.60e-5	-2.38e-3	1.68e-1
PENRM	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+0
PENRT	MJ	1.33e-1	6.96e-3	7.17e-3	0	0	0	0	0	5.14e-4	0	0	9.46e-4	3.08e-4	2.59e-5	-2.02e-3	1.47e-1
SM	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+0

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

RPRE or PERE = Renewable primary resources used as energy carrier (fuel), RPRM or PERM = Renewable primary resources with energy content used as material, RPRT or PERT = Total use of renewable primary resources with energy content, NRPRE or PENRE = Non-renewable primary resources used as an energy carrier (fuel), NRPRM or PENRM = Non-renewable primary resources with energy content used as material, NRPRM or PENRM = Total non-renewable primary resources with energy content, SM = Secondary materials, RSF = Renewable secondary fuels, NRSF = Non-renewable secondary fuels, RE = Recovered energy, ADPF = Abiotic depletion potential, FW = Use of net freshwater resources, VOCs = Volatile Organic Compounds.

Table 5. Waste and Output Flow Indicators

per 1 unit of product of optical fiber used to transmit communication signals on 1m at the wavelength of 850 nm (for a multimode cable), for 10 years and at a rate of use of 100.0% in accordance with the standards in force for infrastructure telecom use.

Indicator	Unit	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	Total
HWD	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+0
NHWD	kg	1.47e-4	0	4.83e-5	0	0	0	0	0	0	0	0	0	0	7.05e-4	0	9.00e-4
RWD	kg	4.72e-7	1.32e-9	2.37e-8	0	0	0	0	0	1.55e-9	0	0	1.80e-10	1.36e-10	2.93e-12	-6.07e-9	4.93e-7
CRU	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+0
MFR	kg	9.23e-5	0	8.16e-5	0	0	0	0	0	0	0	0	0	0	0	0	1.74e-4
MER	kg	1.74e-4	0	7.44e-5	0	0	0	0	0	0	0	0	0	7.05e-4	0	0	9.53e-4
EE	MJ	5.23e-3	0	2.17e-3	0	0	0	0	0	0	0	0	0	2.17e-2	0	0	2.91e-2

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

HWD = Hazardous waste disposed, NHWD = Non-hazardous waste disposed, RWD = Radioactive waste disposed, HLRW = High-level radioactive waste, ILLRW = Intermediate- and low-level radioactive waste, CRU = Components for re-use, MFR or MR = Materials for recycling, MER = Materials for energy recovery, MNER = Materials for incineration, no energy recovery, EE or EEE = Recovered energy exported from the product system, EET = Exported thermal energy.

Table 6. Carbon Emissions and Removals

per 1 unit of product of optical fiber used to transmit communication signals on 1m at the wavelength of 850 nm (for a multimode cable), for 10 years and at a rate of use of 100.0% in accordance with the standards in force for infrastructure telecom use.

Indicator	Unit	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	Total
Bio Carbon Removal from Product	kg CO2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+0
Bio Carbon Emission from Product	kg CO2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+0
Bio Carbon Removal from Packaging	kg CO2	-3.17e-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3.17e-4
Bio Carbon Emission from Packaging	kg CO2	1.73e-4	0	1.44e-4	0	0	0	0	0	0	0	0	0	0	0	0	3.17e-4
Bio Carbon Emission from Waste during Manufacturing (renewable source)	kg CO2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+0
Calcination Carbon Removal	kg CO2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+0
Carbonation Carbon Emission	kg CO2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+0
Carbon Emission from Waste during Manufacturing (non-renewable source)	kg CO2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00e+0

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

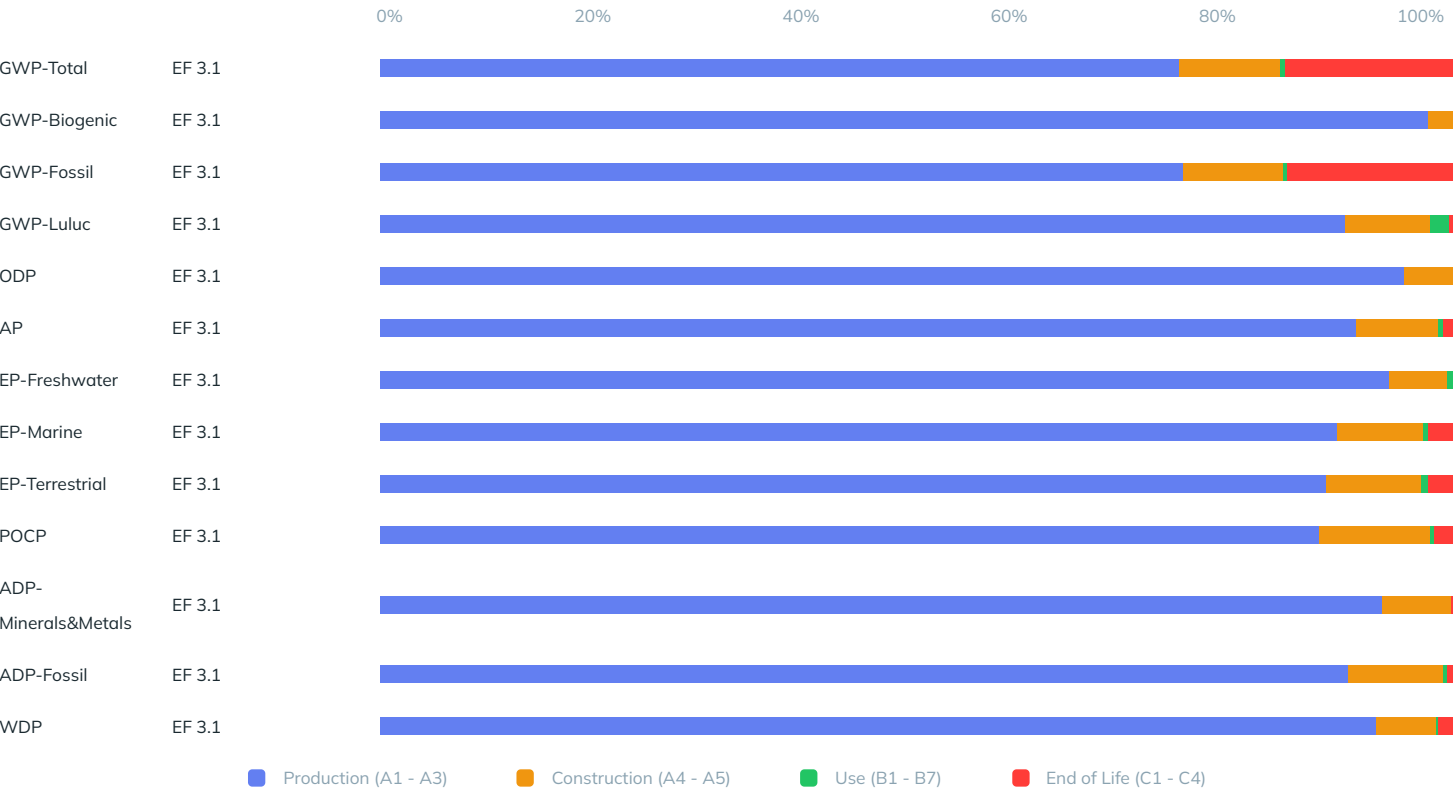
BCRP = Biogenic Carbon Removal from Product, BCEP = Biogenic Carbon Emission from Product, BCRK = Biogenic Carbon Removal from Packaging, BCEK = Biogenic Carbon Emission from Packaging, BCEW = Biogenic Carbon Emission from Combustion of Waste from Renewable Sources Used in Production Processes, CCE = Calcination Carbon Emissions, CCR = Carbonation Carbon Removals, CWNR = Carbon Emissions from Combustion of Waste from Non-Renewable Sources used in Production Processes, GWP-luc = Carbon Emissions from Land-use Change.

Interpretation

The manufacturing of the products in this analysis involves the direct procurement of fiber cable and connector components from suppliers, which are then transported to Panduit's assembly facility where they are processed and assembled into finished trunk cable assemblies. The product stage (A1–A3) shows the highest impact contribution across all categories, driven primarily by the upstream production of raw materials for the fiber cable and connector components, and by energy consumption during the assembly process.

For products where manufacturing energy consumption is a significant contributor, transitioning to renewable energy sources at the production facility is recommended as a priority measure.

Given that upstream raw material production represents the dominant impact driver, Panduit should explore opportunities to engage suppliers who incorporate renewable energy or resource efficiency improvements in their manufacturing processes. Investigating lower-impact material alternatives where technically feasible would further reduce the overall environmental footprint of these products.



Additional Environmental Information

Full impact results are reported above for a representative product of the reference year, expressed in terms of the functional unit. Since multiple products are covered in this EPD, GWP-total results are also expressed in terms of the declared unit: a LSZH fiber optic trunk cable assembly comprising N optical fibres and connector groups at each end, for 10 years at 100% use rate, for data center applications. Declared unit results are derived by scaling the functional unit result by the number of optical fibres, with the connector contribution scaled by the number of connection points. The references listed under each impact category are not an exhaustive list of all applicable references as there are many part numbers that represent materially and functionally equivalent products.

Declared unit results - GWP-Total - N optical fibres and connector groups at each end - 1m

Cable Assemblies	Reference	A1-A3	A4	A5	B6	C1-C4	D
Trunk - 8f - LSZH	FX8YLS	6.5E-02	3.7E-03	4.7E-03	3.6E-04	1.4E-02	-1.4E-03
Trunk - 12f - LSZH	FN3ZTW,FSTYL,FWTWL,FWXTL,FWZTL,FXTYA,FYSTB,FYSTL,FYWTB,FYWTL,FYXTL,FYZTB,FYZTL,FZTSL,FZTYA,FZTYL	9.8E-02	5.5E-03	7.1E-03	5.5E-04	2.1E-02	-2.2E-03
Trunk - 16f - LSZH	FYZCL	1.3E-01	7.3E-03	9.5E-03	7.3E-04	2.8E-02	-2.9E-03
Trunk - 24f - LSZH	FWXUL,FWZUL,FYSUB,FYSUL,FYWUL,FYXUL,FYUB,FYZUL,FZUWL,FZUYL	2.0E-01	1.1E-02	1.4E-02	1.1E-03	4.2E-02	-4.3E-03
Trunk - 48f - LSZH	FN2ZW,FTSWB,FTZWB,FTZWL,FWZWL,FYXWL	3.9E-01	2.2E-02	2.8E-02	2.2E-03	8.4E-02	-8.6E-03
Trunk - 72f - LSZH	FTZXB,FTZXL,FWZXL	5.9E-01	3.3E-02	4.3E-02	3.3E-03	1.3E-01	-1.3E-02
Trunk - 96f - LSZH	FTZYL	7.9E-01	4.4E-02	5.7E-02	4.4E-03	1.7E-01	-1.7E-02
Trunk - 144f - LSZH	FTZAB	1.2E+00	6.6E-02	8.6E-02	6.6E-03	2.5E-01	-2.6E-02

References

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- [10] European Committee for Standardization. (2021). EN 15804:2012+A2:2019/AC:2021 – Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products.
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[12] International Electrotechnical Commission. IEC 61156-1 – Multicore and symmetrical pair/quad cables for digital communications – Part 1: Generic specification.

[13] IEEE. IEEE Standard 802.3 – Ethernet standard.

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