

# LightPack<sup>®</sup> LXE Cable

## Easy-to-Install, Compact Cable Protects Your Network in Outside Plant Environments

### Product Description

The *LightPack* cable core is a bundle of 2 to 12 fibers held together loosely with two helically applied binders. The core consists of an extruded plastic tube, containing filling compound and up to eight fiber bundles (up to 96 fibers). Positive identification of each fiber is provided by color coding both the fibers and the binders.

The LXE sheath system achieves a 600-pound (2670 N) tensile rating through the use of linearly applied strength members placed 180 degrees opposite each other. The cable jacket is made of High Density Polyethylene (HDPE) to provide faster installation (through a lower coefficient of friction) and optimum cable core protection in hostile environments. The small size and light weight make installation easy. In addition, the LXE sheath system passes both the Telecommunications Industry Association/Electronic Industries Association (TIA/EIA) standard cable tests and the more stringent OFS test program.



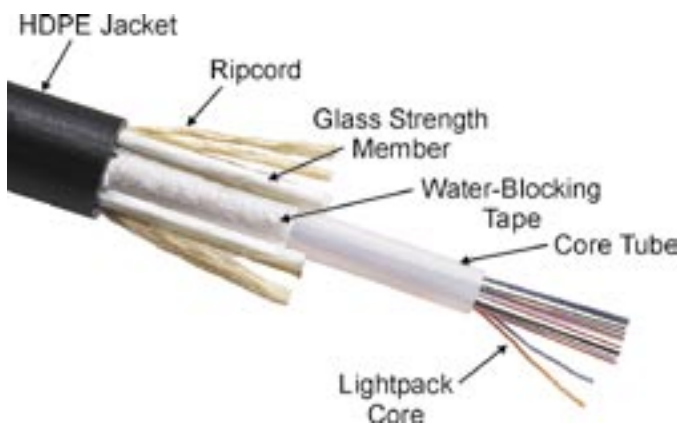
***LXE-ME (Metallic) or LXE-RL (Rodent-Lightning) Sheath***

### Why the LightPack LXE?

When reliability counts, you can count on LXE Fiber Optic Cable. The LXE family of products is designed for the loop distribution market, where express entry (accessing fiber in the middle of a cable span) is a common practice. These cables provide excellent optical, mechanical, and environmental performance in compact, reliable designs.

Three sheath options are available: Metallic (LXE-ME), Dielectric (LXE-DE), and Rodent-Lightning (LXE-RL). The construction of the LXE-ME sheath has an overlapped armor layer of 0.15 mm (0.006 in) thick corrugated, electrolytically chrome coated steel (ECCS) that envelops the core tube and has a ripcord under it to ease its removal. The steel armor is coated to inhibit corrosion and to bond to the outer jacket. Two steel wire strength members run longitudinally along the armor, diametric to each other. A ripcord is located next to each steel wire for ease of sheath removal. The sheath is completed with a black high density polyethylene (HDPE) jacket.

The construction of the LXE-RL sheath is the same as the LXE-ME sheath except the ECCS armor is replaced with an adhesive-coated 0.13 mm (0.005 in.) stainless steel (SS) armor which provides additional protection against rodents and lightning.



***LXE-DE (Dielectric) Sheath***

The LXE-DE sheath has two groups of glass strength members that are longitudinally applied, diametrical to each other, over the cable core. Two rip cords, nestled along the strength members, are provided to facilitate sheath entry. The sheath is completed with a black high density polyethylene (HDPE) jacket.

For each sheath option, cable entry is extremely easy, even in mid-span. The cable core can be accessed with the strength members remaining intact, so cable tensile strength is maintained. In the metallic versions, electrical continuity is also maintained.

All fibers used in LightPack bundles are color coded to facilitate individual fiber identification. The individual fiber colors are given in the following table.

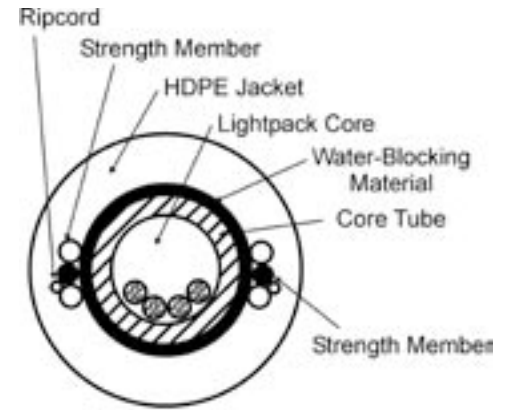
### Fiber Color Code

All fibers are color-coded to facilitate individual fiber identification. The individual fiber colors used in 12-fiber *LightPack Bundles* are given in the following table.

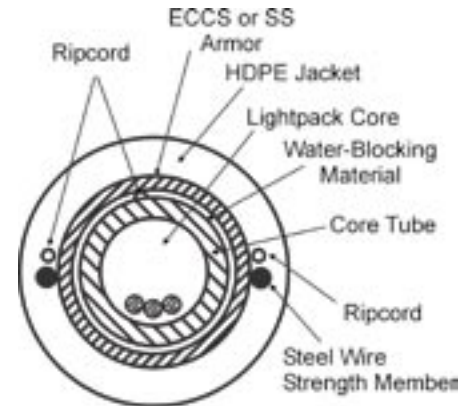
Fiber	Fiber Color
1	Blue (BL)
2	Orange (OR)
3	Green (GR)
4	Brown (BR)
5	Slate (SL)
6	White (WH)
7	Red (RD)
8	Black (BK)
9	Yellow (YL)
10	Violet (VI)
11	Rose (RS)
12	Aqua (AQ)



**LightPack Fiber Bundle**



**LXE-DE (Dielectric) Sheath**



**LXE-ME (Metallic) or LXE-RL (Rodent-Lighting) Sheath**

### Features and Benefits

- Single-mode, Multimode, *AllWave*®, and *TrueWave*® fibers with *D-LUX*® coating
- Compact size
- Rugged, robust design
- Variety of sheath and core options
- All fibers in central core tube
- High density polyethylene sheath
- High strength to weight ratio
- Reliable network performance
- Excellent optical, mechanical, and environmental performance
- Improved craft productivity (installation and splicing)
- Simplified fiber administration
- Maximum transmission capacity in a compact design
- Protection from environmental hazards and installation abuse

## Test and Methods

### Mechanical, Environmental, and Electrical Requirements for Single-Mode Fiber Optic Cables

Cable Test	Test Method	Requirement
Tensile Loading and Bending	TIA/EIA-455-33	90% ≤ 0.05 dB Max. Added loss
	IEC 60794-1-E1	100% ≤ 0.15 dB Max. Added Loss
Cyclic Flexing	TIA/EIA-455-104	90% ≤ 0.05 dB Max. Added loss
	IEC 60794-1-E6	100% ≤ 0.15 dB Max. Added Loss
Cyclic Impact	TIA/EIA-455-25	90% ≤ 0.05 dB Max. Added Loss
	IEC 60794-1-E4	100% ≤ 0.15 dB Max. Added Loss
Compressive Loading	TIA/EIA-455-41	90% ≤ 0.05 dB Max. Added Loss
	IEC 60794-1-E3	100% ≤ 0.15 dB Max. Added Loss 440 N/cm (250 lbf/in) Load
Twist	TIA/EIA-455-85	90% ≤ 0.05 dB Max. Added Loss
	IEC 60794-1-E7	100% ≤ 0.15 dB Max. Added Loss
Low and High Temperature Bend	TIA/EIA-455-37	90% ≤ 0.05 dB Max. Added Loss
	IEC 60794-1-E11	100% ≤ 0.15 dB Max. Added Loss
External Freezing	TIA/EIA-455-98	90% ≤ 0.05 dB Max. Added Loss
	IEC 60794-1-F6	100% ≤ 0.15 dB Max. Added Loss
Fiber Stripability	TIA/EIA-455-178	≤8.9 N (2 lbf) on unaged and aged fiber
	IEC 60793-1-B6	≥1.3N (0.3 lbf) on unaged and aged fiber
Temperature Cycling	TIA/EIA-455-3	≤0.05 dB/km Mean Added Loss
	IEC 60794-1-F1	≤0.15 dB/km Max Added Loss
Cable Aging	TIA/EIA-455-3	≤0.10 dB/km Mean Added Loss
	IEC 60794-1-F1	≤0.25 dB/km Max Added Loss
Water Penetration	TIA/EIA-455-82	No flow after 24 hours from one meter length of cable
	IEC 60794-1-F5	
Sheath-to-Ground Dielectric Strength		≥20 kV for all armored metallic sheaths
Compound Drip	TIA/EIA-455-81	80°C, 24 hours duration, no drip
	IEC60794-1-E14	
Lightning Conduction metallic sheaths	TIA/EIA-455-181	Telcordia Category I for all armored

*The LightPack LXE cable complies with the latest revision of the TIA/EIA Test Method. There is not an exact correspondence of TIA/EIA Fiber Optic Test Procedures (FOTPs) and IEC Test Methods.*

## Test and Methods

### Mechanical, Environmental, and Electrical Requirements for Multimode Fiber Optic Cables

Cable Test	Test Method	Requirement
Tensile Loading and Bending	TIA/EIA-455-33	0.20 dB Max. Mean Added Loss
	IEC 60794-1-E1	
Cyclic Flexing	TIA/EIA-455-104	0.20 dB Max. Mean Added Loss
	IEC 60794-1-E6	
Cyclic Impact	TIA/EIA-455-25	0.40 dB Max. Mean Added Loss
	IEC 60794-1-E4	
Compressive Loading	TIA/EIA-455-41	0.20 dB Max. Mean Added Loss
	IEC 60794-1-E3	440 N/cm (250 lbf/in) Load
Twist	TIA/EIA-455-85	0.20 dB Max. Mean Added Loss
	IEC 60794-1-E7	
Low and High Temperature Bend	TIA/EIA-455-37	0.40 dB Max. Mean Added Loss
	IEC 60794-1-E11	
External Freezing	TIA/EIA-455-98	0.20 dB Max. Mean Added Loss
	IEC 60794-1-F6	
Fiber Stripability	TIA/EIA-455-178	≤13.4 N (3 lbf) on unaged fiber
	IEC 60793-1-B6	
Temperature Cycling	TIA/EIA-455-3	≤0.05 dB/km Mean Added Loss
	IEC 60794-1-F1	≤0.15 dB/km Max. Added Loss
Cable Aging	TIA/EIA-455-3	≤0.10 dB/km Mean Added Loss
	IEC 60794-1-F1	≤0.25 dB/km Max. Added Loss
Water Penetration	TIA/EIA-455-82	No flow after 24 hours from one meter length of cable
	IEC 60794-1-F5	
Sheath-to-Ground Dielectric Strength		≥20 kV for all armored metallic sheaths
Compound Drip	TIA/EIA-455-81	80°C, 24 hours duration, no drip
	IEC60794-1-E14	
Lightning Conduction metallic sheaths	TIA/EIA-455-181	Telcordia Category I for all armored

*The LightPack LXE cable complies with the latest revision of the TIA/EIA Test Method. There is not an exact correspondence of TIA/EIA Fiber Optic Test Procedures (FOTPs) and IEC Test Methods.*

## Value Statement

With LightPack LXE Fiber Optic Cable, your worries about installation abuse and environmental hazards are a thing of the past. With three sheath options to choose from, you can select a cable configuration that is exactly right for your application. The compact design and high strength-to-weight ratio of the cable make installation easy — particularly in limited duct space. Craft productivity is also maximized by the easy access to all fibers provided by the central core tube design. In addition to these improved fiber administration features, the LXE Fiber Optic Cable provides excellent optical, mechanical, and environmental performance. Count on OFS for solutions that work.

## Ordering Information

Fiber Type *	Sheath Design		
	Metallic	Dielectric	Rodent-Lightning
Single-mode	ADSX-NNN-BXC	ADNX-NNN-BXC	ADRX-NNN-BXC
<i>AllWave</i> <sup>®</sup>	ADSX-NNN-BXD	ADNX-NNN-BXD	ADRX-NNN-BXD
62.5 μm Multimode	3DSX-NNN-HXM	3DNX-NNN-HXM	3DRX-NNN-HXM

NNN = Number of Fibers  
 BXC = 0.35/0.25 dB/km at 1310/1550 nm  
 BXD = 0.40/0.30 dB/km at 1310/1550 nm  
*AllWave* Fiber (BXC and BXD) = ≤ .35 dB/km at 1385 nm  
 HXM = 3.4 dB/km 200MHz-km at 850 nm  
 1.0 dB/km 500MHz-km at 1300 nm

A 16-character code is required for RUS requested cable – simply add “RUS” to the above codes. Available with 62.5 micron multimode fiber, *AllWave*<sup>®</sup>, and *TrueWave*<sup>®</sup> fibers and other fiber types. Other fiber counts, other transmission characteristics and fiber type combinations are available on a special order basis.

## Specifications

Sheath Type	Fiber Count					
	ME/RL (2-24 Fibers)		ME/RL (30-48 Fibers) DE (2-48 Fibers)		DE/ME/RL (60-96 Fibers)	
	Core OD- mm (in)					
	5.1 (0.20)		6.1 (0.24)		7.9 (0.31)	
Cable Diameter and Mass						
	OD mm (in)	Mass kg/km (lbm/ kft)	OD mm (in)	Mass kg/km (lbm/ kft)	OD mm (in)	Mass kg/km (lbm/ kft)
Metallic LXE-ME	11.4 (0.45)	131 (88)	13.0 (0.51)	179 (120)	15.5 (0.61)	223 (150)
Rodent-Lightning LXE-RL	11.4 (0.45)	131 (88)	13.0 (0.51)	179 (120)	15.5 (0.61)	223 (150)
Dielectric LXE-DE	—	—	13.0 (0.51)	141 (95)	15.5 (0.61)	186 (125)

For additional information please contact your sales representative. You can also visit our website at <http://www.ofsoptics.com> or call 1-888-fiberhelp.

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