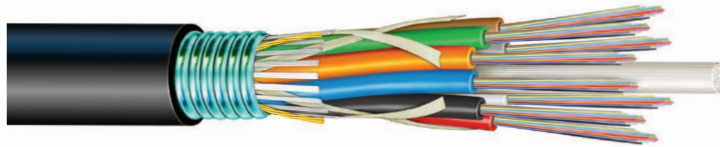
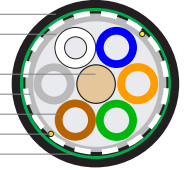


## ezDISTANCE™ | Loose Tube

Ultra Low Loss Single Mode Fiber Solution



- Jacket
- Water Blocking Binders
- Central Strength Member
- Outer Strength Members (where applicable)
- Dry Buffer Tube Containing up to 12 Fibers
- Ripcord
- ezPREP® Corrugated Steel Armor (optional)



*The Prysmian Ultra Low Loss Fiber Cable solution enhances system performance by extending the distance the system can reach.*

### Overview

This is important in long distance, FTTx, and analog video applications. This cabling solution combines the full features of Ultra Low Loss Fiber in a Loose Tube. The Ultra Low Loss Fiber Cabling Solution provides improved attenuation performance across the full 1260 to 1625 nm band and across the full temperature range of -50C to +70C.

### Product Snapshot

<b>Applications</b>	Multi-purpose outdoor - aerial lashed, duct, direct buried for applications benefiting from low attenuation solutions (long-haul, CATV, etc)
<b>Constructions</b>	Dielectric, armored with single or multiple jacket /armor configurations
<b>Fiber Count</b>	12 to 432 in 12 Fibers per tube color coded buffer tubes
<b>Fiber Types</b>	Ultra low loss single-mode fiber
<b>Options</b>	Insulated toning wire or copper pair
<b>Other Versions</b>	Also available in ExpressLT™ & LT2.0
<b>Performance</b>	ITU G652.D, IEC60793-2-50 B.1.3, ICEA640, (RUS Compliant) & Telcordia

### Features and Benefits

#### Low Cable Loss

- Available with 0.34 dB/km at 1310 nm, 0.34 dB/km at 1383 nm and 0.19 dB/km at 1550 nm
- Up to 25% improvement in specified cable attenuation at 1550 nm (compared to 0.25 dB/km)
- Enhanced environmental performance with improved attenuation performance across the full temperature range of -50C to +70C

#### Improved System Performance

- Large effective area at 1550 nm suppresses cross channel non-linear effects for improved DWDM performance
- Lower loss improves signal/noise performance
- Lower loss improvement extends the distance reach in long distance applications
- Lower loss improvement can be directly converted into extra system margin for network designers, which is important for demanding network configurations where multi-degree tunable & reconfigurable nodes are implemented
- Provides extra system margin which provides flexibility in route selection for dynamic protection and restoration
- Low PMD of  $\leq 0.06$  ps/√km

#### Backward Fiber Compatibility

- Fully compliant with standard low water peak single mode fiber ITU G652.D fiber requirements

#### Full Loose Tube Cable Benefits

- Polypropylene buffer tubes for enhanced flexibility
- ezPREP® armor for easy cable entry
- Up to 20 ft. express storage of buffer tubes
- Gel-free cable core with gel filled buffer tubes (option of gel-free buffer tubes)
- Available in multiple sheath configurations for varying applications

**RUS LISTED**

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## ezDISTANCE™ | Loose Tube

Ultra Low Loss Single Mode Fiber Solution

### Dielectric (Non-Armored) (ETH1JKT)

Fiber Count	# of Buffer Tubes	Diameter Inches (mm)	Approximate Cable Weight lb/kft (kg/km)	Bend Radius   Load Inches (cm)	Bend Radius   No Load Inches (cm)
4 to 60	5	0.39 (9.8)	46 (69)	8 (20)	4 (10)
62 to 72	6	0.41 (10.3)	55 (81)	8 (21)	4 (11)
74 to 96	8	0.47 (11.9)	71 (105)	9 (24)	5 (12)
98 to 120	10	0.54 (13.6)	88 (131)	11 (27)	5 (14)
122 to 144	12	0.61 (15.4)	117 (174)	12 (31)	6 (16)
146 to 216	18	0.61 (15.4)	120 (179)	12 (31)	6 (16)
218 to 264	22	0.67 (17.0)	143 (212)	13 (34)	7 (17)
266 to 288	24	0.71 (18.0)	162 (240)	14 (36)	7 (18)
290 to 432	36	0.80 (20.4)	210 (313)	16 (41)	8 (21)

### Single Jacket Armored (SP) (ETH1A1)

Fiber Count	# of Buffer Tubes	Diameter Inches (mm)	Approximate Cable Weight lb/kft (kg/km)	Bend Radius   Load Inches (cm)	Bend Radius   No Load inches (cm)
4 to 60	5	0.45 (11.5)	92 (137)	9 (23)	5 (11)
62 to 72	6	0.48 (12.3)	101 (157)	10 (25)	5 (12)
74 to 96	8	0.56 (14.3)	121 (180)	11 (29)	6 (14)
98 to 120	10	0.61 (15.5)	150 (223)	12 (31)	6 (16)
122 to 144	12	0.69 (17.6)	188 (280)	14 (35)	7 (18)
146 to 216	18	0.69 (17.6)	183 (272)	14 (35)	7 (18)
218 to 264	22	0.75 (19.1)	205 (305)	15 (38)	8 (19)
266 to 288	24	0.79 (20.1)	224 (334)	16 (40)	8 (20)
290 to 432	36	0.89 (22.7)	277 (412)	18 (46)	9 (23)

### Double Jacket Armored (PSP) (ETH1A2)

Fiber Count	# of Buffer Tubes	Diameter Inches (mm)	Approximate Cable Weight lb/kft (kg/km)	Bend Radius   Load Inches (cm)	Bend Radius   No Load Inches (cm)
4 to 60	5	0.51 (13.0)	111 (165)	10 (26)	5 (13)
62 to 72	6	0.55 (14.0)	121 (180)	11 (28)	5 (14)
74 to 96	8	0.60 (15.3)	143 (212)	12 (31)	6 (15)
98 to 120	10	0.66 (16.8)	174 (259)	13 (34)	7 (17)
122 to 144	12	0.74 (18.9)	210 (312)	15 (38)	7 (19)
146 to 216	18	0.74 (18.9)	210 (312)	15 (38)	7 (19)
218 to 264	22	0.79 (20.1)	235 (349)	16 (40)	8 (20)
266 to 288	24	0.83 (21.1)	255 (380)	17 (42)	8 (21)
290 to 432	36	0.94 (23.9)	312 (464)	19 (48)	9 (24)

### Dielectric Double Jacket (PDP) (ETHNA2)

Fiber Count	# of Buffer Tubes	Diameter Inches (mm)	Approximate Cable Weight lb/kft (kg/km)	Bend Radius   Load Inches (cm)	Bend Radius   No Load Inches (cm)
4 to 60	5	0.46 (11.7)	68 (101)	9 (23)	5 (12)
62 to 72	6	0.48 (12.2)	78 (116)	10 (25)	5 (12)
74 to 96	8	0.54 (13.8)	97 (144)	11 (28)	5 (14)
98 to 120	10	0.61 (15.4)	121 (180)	12 (31)	6 (15)
122 to 144	12	0.67 (17.1)	145 (216)	13 (34)	7 (17)
146 to 216	18	0.67 (17.1)	154 (228)	13 (34)	7 (17)
218 to 264	22	0.74 (18.7)	179 (266)	15 (37)	7 (19)
266 to 288	24	0.78 (19.8)	200 (298)	16 (40)	8 (20)

## ezDISTANCE™ | Loose Tube

Ultra Low Loss Single Mode Fiber Solution

### Double Jacket Double Armored (SPSP) (ETH2A2)

Fiber Count	# of Buffer Tubes	Diameter Inches (mm)	Approximate Cable Weight lb/kft (kg/km)	Bend Radius   Load Inches (cm)	Bend Radius   No Load Inches (cm)
4 to 60	5	0.64 (16.3)	186 (277)	13 (33)	6 (16)
62 to 72	6	0.67 (17.1)	198 (295)	13 (34)	7 (17)
74 to 96	8	0.75 (19.1)	231 (344)	15 (38)	8 (19)
98 to 120	10	0.80 (20.4)	265 (394)	16 (41)	8 (20)
122 to 144	12	0.88 (22.4)	325 (483)	18 (45)	9 (22)
146 to 216	18	0.88 (22.4)	317 (472)	18 (45)	9 (22)
218 to 264	22	0.94 (23.9)	353 (525)	19 (48)	9 (24)
266 to 288	24	0.98 (24.9)	384 (571)	20 (50)	10 (25)

### Triple Jacket Double Armored (PSPSP) (ETH2A3)

Fiber Count	# of Buffer Tubes	Diameter Inches (mm)	Approximate Cable Weight lb/kft (kg/km)	Bend Radius   Load Inches (cm)	Bend Radius   No Load Inches (cm)
4 to 60	5	0.70 (17.8)	218 (325)	14 (36)	7 (18)
62 to 72	6	0.73 (18.6)	232 (345)	15 (37)	7 (19)
74 to 96	8	0.79 (20.1)	270 (402)	16 (40)	8 (20)
98 to 120	10	0.85 (21.7)	320 (476)	17 (43)	9 (22)
122 to 144	12	0.83 (23.7)	379 (564)	19 (47)	9 (24)
146 to 216	18	0.93 (23.7)	379 (564)	19 (47)	9 (24)
218 to 264	22	0.98 (25.0)	417 (620)	20 (50)	10 (25)
266 to 288	24	1.02 (26.0)	446 (663)	20 (52)	10 (26)

#### Installation

Maximum installation load: 600 lbf (2700 N)  
 Maximum operation load: 180 lbf (800 N)

#### Temperature Range

Shipping and Storage: -40° F to +167° F (-40° C to +75° C)  
 Installation: -22° F to +140° F (-30° C to +60° C)  
 Operation: -58 F to +158° F (-50° C to +70° C)

#### Ultra Low Loss Fiber Characteristics

Parameter	Test Method	Units	Specification
Attenuation change with wavelength 1285 to 1330 nm (reference 1310 nm) 1525 to 1575 nm (reference 1550 nm)	IEC60794-1-40	dB/km	≤ 0.03 ≤ 0.01
Mode field diameter @ 1310 nm @ 1550 nm	IEC 60793-1-45	µm	8.8 ± 0.4 9.8 ± 0.5
Cladding diameter	IEC 60793-1-20	µm	125.0 ± 0.7
Cladding non-circularity	IEC 60793-1-20	%	≤ 0.7
Core - cladding concentricity error	IEC 60793-1-20	µm	≤ 0.5
Coating diameter - ColorLock colored	IEC 60793-1-21	µm	242 ± 7
Coating non-circularity	IEC 60793-1-21	%	≤ 5
Coating - cladding concentricity error	IEC 60793-1-21	µm	≤ 12
Zero dispersion wavelength	IEC 60793-1-42	nm	1300 - 1324
Zero dispersion slope	IEC 60793-1-42	ps/nm <sup>2</sup> *km	≤ 0.092
Cutoff wavelength - cable	ITU-T ATMG650 method	nm	≤ 1260
Macro bending loss 100 turns, R=25mm mandrel @ 1550nm 100 turns, R=30mm mandrel @ 1625nm 1 turn, R=15mm mandrel @ 1550nm	IEC 60793-1-47	dB	≤ 0.05 ≤ 0.05 ≤ 0.5
Polarization Mode Dispersion (PMD) coefficient, maximum uncabled	IEC 60793-1-48	ps/√km	≤ 0.1
PMD <sub>Q</sub> Link Design Value (calculated with Q=0.01%, N=20)	IEC 60794-3	ps/√km	≤ 0.06
Proof stress level	IEC 60793-1-30	Gpa	≥ 0.7 (1% strain)
Fiber curl radius	IEC 60793-1-34	m	> 4
Strip force (peak)	IEC 60793-1-32	N	1.2 to 8.9
Dynamic fatigue resistance, aged and unaged (N <sub>d</sub> )	IEC 60793-1-33		≥ 20
Static fatigue resistance (N <sub>s</sub> )	IEC 60793-1-33		≥ 23

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## Ordering Guide

The Prysmian Group part number incorporates several significant attributes involving cable design and optical performance. The appropriate part number can be configured using the process described below

**EXAMPLE:** ezDISTANCE™ Loose Tube | Single Armor Single Jacket (12 Fibers/Tube) with 72 fibers of Ultra Low Loss Singlemode Fiber with an attenuation of 0.34 / 0.34 / 0.19 dB/Km at 1310/1383/1550 nm (Printed in Feet)

<b>1</b> LENGTH MARKINGS	<b>2</b> PRODUCT FAMILY	<b>3</b> CONSTRUCTION	<b>4</b> FIBER GROUPING	<b>5</b> FIBER TYPE	<b>6</b> FIBER COUNT	<b>7</b> FIBER GRADE
F	ETH	1A1J	12	UL	072	EM

PART NUMBER CONSTRUCTION	
<b>1</b> LENGTH MARKINGS	F = Feet or M = Meters
<b>2</b> PRODUCT FAMILY	ETH = ezDistance Loose Tube
<b>3</b> CONSTRUCTION	1JKT = Single Jacket 1A1J = Single Armor, Single Jacket 1A2J = Single Armor, Dual Jacket 2A2J = Double Armor, Dual Jacket 2A3J = Double Armor, Triple Jacket NA2J = Non Armored, Dual Jacket
<b>4</b> FIBER GROUPING	12 = 12f per unit or tube

FIBER INFORMATION		
<b>5</b> FIBER TYPE	SINGLE-MODE	
	UL = Ultra Low Loss Single-Mode (ITU G.657.A2/B2 & G.652.D)	
<b>6</b> FIBER COUNT	004 to 432 fibers	
<b>7</b> FIBER GRADE	SINGLE-MODE	
	Attenuation (dB/km)	Wavelength (nm)
	ED = 0.35/0.35/0.19	1310/1383/1550 Ultra Low Loss Single-Mode
	EM = 0.34/0.34/0.19	1310/1383/1550 Ultra Low Loss Single-Mode

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