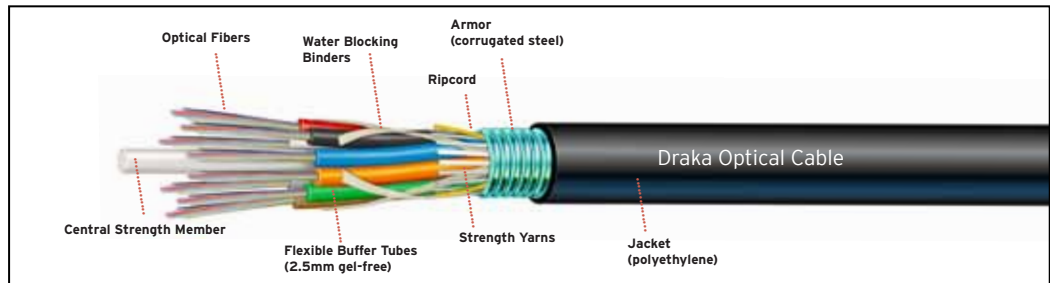




# Draka

## ezDISTANCE™ | Loose Tube Ultra Low Loss Single Mode Fiber Solution



### Product Snapshot

<b>Applications</b>	Multipurpose Outdoor - Aerial Lashed, Duct, or Direct Buried for applications benefiting from low attenuation solutions (long-haul, CATV, etc)
<b>Constructions</b>	All-Dielectric or Armor with single or multiple jacket or 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 Gel-Free
<b>Performance</b>	ITU G652.D, IEC60793-2-50 B.1.3, ICEA640, RUS, and Telcordia GR-20

### The Draka Ultra Low Loss Fiber cable solution enhances system performance by extending the distance the system can reach.

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

### Features & Benefits

#### Low Cable Loss

- Maximum loss of 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 - 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 and 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/ $\sqrt{\text{km}}$

(Continued on next page)

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## Features & Benefits (cont.)

### Backward Fiber Compatibility

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

### Full ezPREP Loose Tube Cable Benefits

- Polypropylene buffer tubes for enhanced flexibility
- Adhesive bond 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.

## 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	0.40 (10.0)	50 (74)	8 (20)	4 (10)
62 to 72	6	0.41 (10.5)	55 (82)	8 (21)	4 (11)
74 to 84	7	0.44 (11.1)	61 (91)	9 (22)	4 (11)
86 to 96	8	0.47 (11.9)	71 (105)	9 (24)	5 (12)
98 to 108	9	0.51 (13.0)	81 (121)	10 (26)	5 (13)
110 to 120	10	0.54 (13.6)	88 (131)	11 (27)	5 (14)
122 to 132	11	0.57 (14.5)	104 (155)	11 (29)	6 (14)
134 to 216	18	0.61 (15.6)	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	0.81 (20.6)	210 (313)	16 (41)	8 (21)

## Single Jacket Armored (SP)

### (ETH1A1J)

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)	65 (97)	9 (23)	5 (11)
62 to 72	6	0.48 (12.3)	74 (111)	10 (25)	5 (12)
74 to 84	7	0.50 (12.8)	81 (120)	10 (26)	5 (13)
86 to 96	8	0.54 (13.8)	94 (140)	11 (28)	5 (14)
98 to 108	9	0.57 (14.5)	105 (156)	11 (29)	6 (15)
110 to 120	10	0.60 (15.3)	116 (173)	12 (31)	6 (15)
122 to 132	11	0.63 (16.1)	128 (190)	13 (32)	6 (16)
134 to 216	18	0.68 (17.3)	149 (222)	14 (35)	7 (17)
218 to 264	22	0.73 (18.6)	172 (255)	15 (37)	7 (19)
266 to 288	24	0.77 (19.6)	191 (284)	15 (39)	8 (20)
290 to 432	36	0.87 (22.2)	244 (362)	17 (44)	9 (22)

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**Double Jacket Armored (PSP)****(ETH1A2J)**

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)	84 (125)	10 (26)	5 (13)
62 to 72	6	0.54 (13.8)	94 (140)	11 (28)	5 (14)
74 to 84	7	0.56 (14.3)	101 (151)	11 (29)	6 (14)
86 to 96	8	0.60 (15.3)	116 (173)	12 (31)	6 (15)
98 to 108	9	0.63 (16.1)	128 (190)	13 (32)	6 (16)
110 to 120	10	0.66 (16.8)	140 (209)	13 (34)	7 (17)
122 to 132	11	0.69 (17.6)	153 (228)	14 (35)	7 (18)
134 to 216	18	0.74 (18.9)	176 (262)	15 (38)	7 (19)
218 to 264	22	0.79 (20.1)	201 (299)	16 (40)	8 (20)
266 to 288	24	0.83 (21.1)	222 (330)	17 (42)	8 (21)
290 to 432	36	0.93 (23.7)	278 (414)	19 (47)	9 (24)

**Dielectric Double Jacket (PDP)****(ETHNA2J)**

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	0.49 (12.6)	78 (116)	10 (25)	5 (13)
74 to 84	7	0.52 (13.1)	86 (127)	10 (26)	5 (13)
86 to 96	8	0.55 (14.0)	97 (144)	11 (28)	5 (14)
98 to 108	9	0.59 (15.0)	112 (167)	12 (30)	6 (15)
110 to 120	10	0.62 (15.6)	121 (180)	12 (31)	6 (16)
122 to 132	11	0.65 (16.5)	135 (201)	13 (33)	7 (17)
134 to 216	18	0.69 (17.6)	154 (228)	14 (35)	7 (18)
218 to 264	22	0.75 (19.0)	179 (266)	15 (38)	7 (19)

**Double Jacket Double Armored (SPSP)****(ETH2A2J)**

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)	132 (197)	13 (33)	6 (16)
62 to 72	6	0.67 (17.1)	145 (215)	13 (34)	7 (17)
74 to 84	7	0.69 (17.6)	153 (228)	14 (35)	7 (18)
86 to 96	8	0.73 (18.6)	172 (255)	15 (37)	7 (19)
98 to 108	9	0.76 (19.4)	186 (277)	15 (39)	8 (19)
110 to 120	10	0.79 (20.1)	201 (299)	16 (40)	8 (20)
122 to 132	11	0.82 (20.9)	216 (322)	16 (42)	8 (21)
134 to 216	18	0.87 (22.2)	244 (362)	17 (44)	9 (22)
218 to 264	22	0.92 (23.4)	272 (405)	18 (47)	9 (23)
266 to 288	24	0.96 (24.4)	296 (441)	19 (49)	10 (24)

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**Triple Jacket Double Armored (PSPSP)**

**(ETH2A3J)**

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)	158 (235)	14 (36)	7 (18)
62 to 72	6	0.73 (18.6)	172 (255)	15 (37)	7 (19)
74 to 84	7	0.75 (19.1)	181 (270)	15 (38)	8 (19)
86 to 96	8	0.79 (20.1)	201 (299)	16 (40)	8 (20)
98 to 108	9	0.82 (20.9)	216 (322)	16 (42)	8 (21)
110 to 120	10	0.85 (21.7)	233 (346)	17 (43)	9 (22)
122 to 132	11	0.88 (22.4)	249 (371)	18 (45)	9 (22)
134 to 216	18	0.93 (23.7)	278 (414)	19 (47)	9 (24)
218 to 264	22	0.98 (25.0)	309 (460)	20 (50)	10 (25)

**Installation**

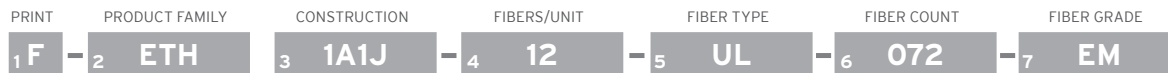
- Maximum installation load 600 lbf (2670 N)
- Maximum operation load 180 lbf (800 N)

**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)

**Ordering Guide**

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 mm (Printed in Feet)



**1 PRINT**

F Feet  
M Meters

**2 PRODUCT FAMILY**

ETH ezPREP Loose Tube

**3 CONSTRUCTION**

1JKT Single Jacket  
1A1J Single Armor, Single Jacket  
1A2J Single Armor, Double Jacket  
2A2J Double Armor, Dual Jacket  
2A3J Double Armor, Triple Jacket  
NA2J Nonarmored, Dual Jacket

**4 FIBERS/UNIT**

06 6 Fibers per Tube  
12 12 Fibers per Tube

**5 FIBER TYPE**

SINGLEMODE  
UL Ultra Low Loss Single Mode Fiber

**6 FIBER COUNT**

### 004 to 432 Fibers

**7 FIBER GRADE**

EM

WAVELENGTHS (nm)

1310 / 1383 / 1550

ATTENUATION (dB/km)

0.34 / 0.34 / 0.19

Other cable constructions and fiber performance grades available on request.

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## 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	9.0 ± 0.4 10.1 ± 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 ATM650 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 ≤ 0.1
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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