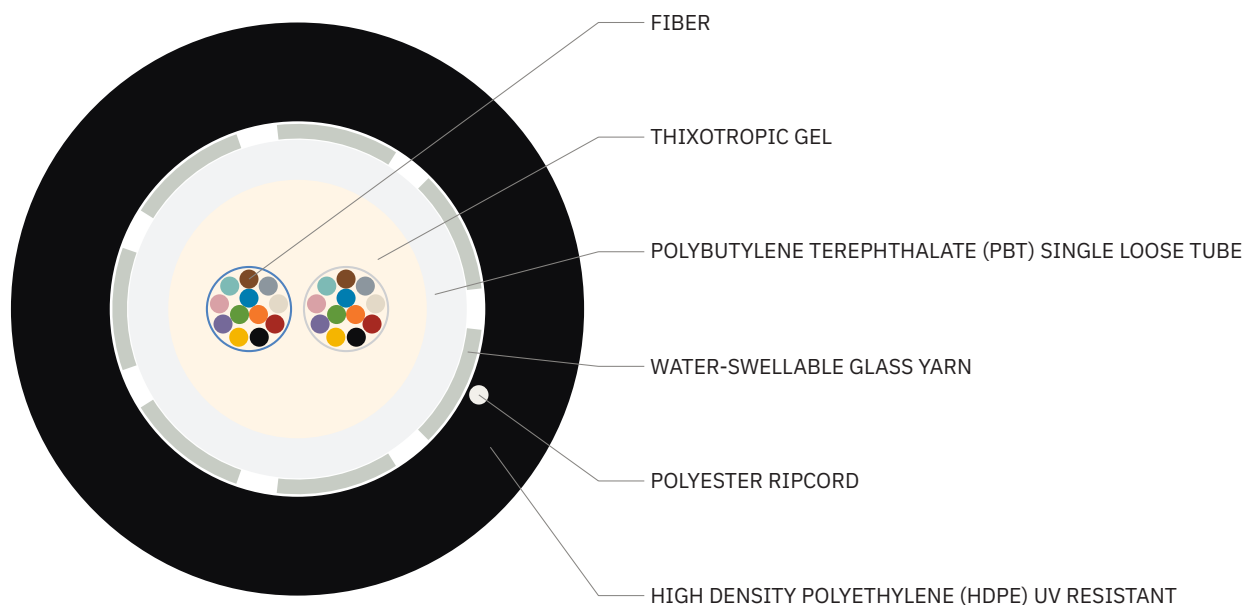


OM4-PE-12

SINGLE LOOSE TUBE, NON-METALLIC ARMOR, POLYETHYLENE JACKET, FIBER OPTIC CABLE

FIBER OPTIC CABLE DRAWING

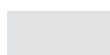


FIBER OPTIC CABLE TUBE AND FIBER CORE COLORS

Tube Color Scheme

1

Natural



FIBER OPTIC CORE COLOR SCHEME

Fiber Optic Core Colors with White Seperator

1	2	3	4	5	6	7	8	9	10	11	12
Blue	Orange	Green	Brown	Slate	White	Red	Black	Yellow	Violet	Rose	Aqua

Fiber Optic Core Colors with Black Seperator

1	2	3	4	5	6	7	8	9	10	11	12
Blue	Orange	Green	Brown	Slate	White	Red	Black	Yellow	Violet	Rose	Aqua

OM4-PE-12

SINGLE LOOSE TUBE, NON-METALLIC ARMOR, POLYETHYLENE JACKET, FIBER OPTIC CABLE

CHARACTERISTICS

Optical Fiber Type	OM4
Optical Fiber Count	12
Optical fiber identification method	Multi Loose Tube
Number of Bundles	2
Cable Type	Single Loose Tube
Tube Material	Polybutylene Terephthalate (PBT)
Tube Diameter (mm)	3.4
Tube Filling Compound Material	Thixotropic Gel
Active Tube Count	1
Single Loose Tube Tube Color	Natural
Tensile Strength	1200 N
Dielectric Tensile Strength Member	Water-swellable Glass Yarn
Jacket Strip Method	1 Polyester Ripcord
Jacket Material	High Density Polyethylene (HDPE) UV resistant
Jacket Color	Black
Jacket Wall Thickness	1,35 mm
Outer Jacket Marking Method	Inkjet marking
Outer Jacket Marking Area	One side
Outer Jacket Marking Application	Applied in one meter intervals
Nominal Cable Diameter (mm)	7,3
Net Cable Weight (kg/km)	43
Reel Length	2000 meters %±5

OM4-PE-12

SINGLE LOOSE TUBE, NON-METALLIC ARMOR, POLYETHYLENE JACKET, FIBER OPTIC CABLE

MECHANICAL CHARACTERISTICS (CABLED)

Test	Reference Standard	Specified Value
Maximum Tensile Strength	IEC 60794-1-21-E1	≥ 1200 N
Crush Resistance	IEC 60794-1-21-E3	1500 N/100 mm (15 minutes)

CHEMICAL CHARACTERISTICS

RoHS	Free of hazardous substances according to RoHS regulation
REACH	Safe to use according to REACH regulation

TEMPERATURE RANGE (CABLED)

Transportation	-40 °C to 70 °C
Storage	-40 °C to 70 °C
Installation	-30 °C to 60 °C
Operation	-40 °C to 70 °C

OM4-PE-12

SINGLE LOOSE TUBE, NON-METALLIC ARMOR, POLYETHYLENE JACKET, FIBER OPTIC CABLE

PERFORMANCE CHARACTERISTICS

Point Discontinuity ³	at 850 nm / 1300 nm	≤ 0.1 dB
Irregularities Over Fiber Length		
Reflections	Not allowed	
Effective Group Index of Refraction N _{eff}	at 850 nm	1.496
	at 1300 nm	1.491

MECHANICAL CHARACTERISTICS

Proof Level	off line	0.7 GPa (100 kpsi)
Dynamic Tensile Strength	median; 0.5 m, unaged and aged ⁴	≥3.8 Gpa (550 kpsi)
Dynamic Fatigue Parameter	nominal value, unaged and aged ⁴	25
Coating Strip Force (F)	peak, unaged and aged ⁵	1.3 N ≤ F ≤ 8.9 N
	average, unaged and aged ⁵	1.0 N ≤ F ≤ 3.0 N

ENVIRONMENTAL CHARACTERISTICS ⁶

Temperature Cycling	-60 °C to 85 °C	≤ 0.1 dB/km
Temperature Humidity Cycling	-10 °C to 85 °C at 4-98% R. H.	
Water Immersion	at 23 °C ± 2 °C, 30 days	
Heat Aging	at 85 °C ± 2 °C, 30 days	
Damp Heat	85 °C at 85% R. H., 30 days	

3. OTDR MEASUREMENT WITH 0.5 MS PULSE WIDTH

4. MEAN OF BI-DIRECTIONAL MEASUREMENT

5. AGING AT 85 °C, 85% R. H., 30 DAYS

6. AGING AT 23 °C, 0 °C AND 45 °C; 30 DAYS AT 85 °C AND 85% R.H.; 14 DAYS WATER IMMERSION AT 23 °C

7. INDUCED ATTENUATION AT 850 NM AND 1300 NM

• THE IMAGES ARE FOR ILLUSTRATIVE PURPOSES ONLY

OM4-PE-12

SINGLE LOOSE TUBE, NON-METALLIC ARMOR, POLYETHYLENE JACKET, FIBER OPTIC CABLE

FIBER MATERIALS

Core Material	Silica (SiO ₂) Doped with Germanium Dioxide (GeO ₂)
Cladding Material	Pure silica (SiO ₂)
Coating Material	Dual layers of UV-cured acrylate

DIMENSIONS

Core Diameter	50 ± 2.5 µm
Core Non-circularity	≤ 5 %
Core/Cladding Concentricity Error	≤ 1.0 µm
Cladding Diameter	125.0 ± 1.0 µm
Cladding Non-circularity	≤ 0.7 %
Coating Diameter (Uncolored)	242 ± 5 µm
Coating Non-circularity	≤ 5 %
Coating/Cladding Concentricity Error	≤ 10 µm

OPTICAL CHARACTERISTICS

Attenuation Coefficient	at 850 nm	≤ 2.3 ~ 2.4 dB/km
	at 1300 nm	≤ 0.5 ~ 0.6 dB/km
Numerical Aperture	0.200 ± 0.015	
Zero-dispersion Wavelength (λ ₀)	1320 nm ≤ λ ₀ ≤ 1365 nm	
Zero-dispersion Slope (S ₀)	1295 nm ≤ λ ₀ ≤ 1310 nm	≤ 0.105 ps/nm ² ·km
	1310 nm ≤ λ ₀ ≤ 1340 nm	≤ 0.000375 (1590 - λ ₀) ps/nm ² ·km
Differential Mode Delay (DMD)	See Note ¹	
Fiber Capacity	10GBASE-SR	83 m
	1GBASE-SR	600 m
Overfilled Modal Bandwidth	at 850 nm	≥ 500 MHz·km
	at 1300 nm	
Bending Loss	Ø=15 mm, 2 turn at 850 nm	≤ 0.2 dB
	Ø=15 mm, 2 turn at 1300 nm	≤ 0.5 dB
	Ø=30 mm, 2 turn at 850 nm	≤ 0.1 dB
	Ø=30 mm, 2 turn at 1300 nm	≤ 0.3 dB

1. DIFFERENTIAL MODE DELAY (DMD) SPECIFICATIONS ARE COMPLIANT WITH IEC 60793-2-10 (TYPE A1A.2 FOR OM3 AND TYPE A1A.3 FOR OM4.), TIA-492AAAC (OM3) AND 492AAAD (OM4)
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OM4-PE-12

SINGLE LOOSE TUBE, NON-METALLIC ARMOR, POLYETHYLENE JACKET, FIBER OPTIC CABLE

PERFORMANCE CHARACTERISTICS ²

Point Discontinuity ³	at 850 nm / 1300 nm	≤ 0.1 dB
Irregularities Over Fiber Length		
Reflections	Not allowed	
Effective Group Index of Refraction N _{eff}	at 850 nm	1.482
	at 1300 nm	1.477

MECHANICAL CHARACTERISTICS

Proof Level	off line	0.7 GPa (100 kpsi)
Dynamic Tensile Strength	median; 0.5 m, unaged and aged ⁴	≥3.8 Gpa (550 kpsi)
Dynamic Fatigue Parameter	nominal value, unaged and aged ⁴	25
Coating Strip Force (F)	peak, unaged and aged ⁵	1.3 N ≤ F ≤ 8.9 N
	average, unaged and aged ⁵	1.0 N ≤ F ≤ 3.0 N

ENVIRONMENTAL CHARACTERISTICS ⁶

Temperature Cycling	-60 °C to 85 °C	≤ 0.1 dB/km
Temperature Humidity Cycling	-10 °C to 85 °C at 4-98% R. H.	
Water Immersion	at 23 °C ± 2 °C, 30 days	
Heat Aging	at 85 °C ± 2 °C, 30 days	
Damp Heat	85 °C at 85% R. H., 30 days	

3. OTDR MEASUREMENT WITH 0.5 MS PULSE WIDTH

4. MEAN OF BI-DIRECTIONAL MEASUREMENT

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OM4-PE-12

SINGLE LOOSE TUBE, NON-METALLIC ARMOR, POLYETHYLENE JACKET, FIBER OPTIC CABLE

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Numerical Aperture	0.200 ± 0.015	
Zero-dispersion Wavelength (λ ₀)	1320 nm ≤ λ ₀ ≤ 1365 nm	
Zero-dispersion Slope (S ₀)	1295 nm ≤ λ ₀ ≤ 1310 nm	≤ 0.105 ps/nm ² ·km
	1310 nm ≤ λ ₀ ≤ 1340 nm	≤ 0.000375 (1590 - λ ₀) ps/nm ² ·km
Differential Mode Delay (DMD)	See Note ¹	
Fiber Capacity	40GBASE-SR4 / 100GBASE-SR10	140 m ²
	10GBASE-SR	300 m
	1GBASE-SR	1000 m
Overfilled Modal Bandwidth	at 850 nm	≥ 1500 MHz·km
	at 1300 nm	≥ 500 MHz·km
Effective Modal Bandwidth (EMB)	at 850 nm	≥ 2000 MHz·km
Bending Loss	Ø=15 mm, 2 turn at 850 nm	≤ 0.2 dB
	Ø=15 mm, 2 turn at 1300 nm	≤ 0.5 dB
	Ø=30 mm, 2 turn at 850 nm	≤ 0.1 dB
	Ø=30 mm, 2 turn at 1300 nm	≤ 0.3 dB

1. DIFFERENTIAL MODE DELAY (DMD) SPECIFICATIONS ARE COMPLIANT WITH IEC 60793-2-10 (TYPE A1A.2 FOR OM3 AND TYPE A1A.3 FOR OM4), TIA-492AAAC (OM3) AND 492AAAD (OM4)

2. MAXIMUM CABLED FIBER ATTENUATION 3.0 DB/KM AT 850 NM, MAXIMUM TOTAL CONNECTOR LOSS OF 1.0 DB AND VCSELS MAXIMUM RMS SPECTRAL WIDTH OF 0.29 NM

• THE IMAGES ARE FOR ILLUSTRATIVE PURPOSES ONLY

OM4-PE-12

SINGLE LOOSE TUBE, NON-METALLIC ARMOR, POLYETHYLENE JACKET, FIBER OPTIC CABLE

PERFORMANCE CHARACTERISTICS ³

Point Discontinuity ⁴	at 850 nm / 1300 nm	≤ 0.1 dB
Irregularities Over Fiber Length		
Reflections	Not allowed	
Effective Group Index of Refraction N _{eff}	at 850 nm	1.482
	at 1300 nm	1.477

MECHANICAL CHARACTERISTICS

Proof Level	off line	0.7 GPa (100 kpsi)
Dynamic Tensile Strength	median; 0.5 m, unaged and aged ⁵	≥3.8 Gpa (550 kpsi)
Dynamic Fatigue Parameter	nominal value, unaged and aged ⁵	25
Coating Strip Force (F)	peak, unaged and aged ⁶	1.3 N ≤ F ≤ 8.9 N
	average, unaged and aged ⁶	1.0 N ≤ F ≤ 3.0 N

ENVIRONMENTAL CHARACTERISTICS ⁷

Temperature Cycling	-60 °C to 85 °C	≤ 0.1 dB/km
Temperature Humidity Cycling	-10 °C to 85 °C at 4-98% R. H.	
Water Immersion	at 23 °C ± 2 °C, 30 days	
Heat Aging	at 85 °C ± 2 °C, 30 days	
Damp Heat	85 °C at 85% R. H., 30 days	

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OM4-PE-12

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Coating Diameter (Uncolored)	242 ± 5 µm
Coating Non-circularity	≤ 5 %
Coating/Cladding Concentricity Error	≤ 10 µm

OPTICAL CHARACTERISTICS

Attenuation Coefficient	at 850 nm	≤ 2.2 ~ 2.3 dB/km
	at 1300 nm	≤ 0.5 ~ 0.6 dB/km
Numerical Aperture	0.200 ± 0.015	
Zero-dispersion Wavelength (λ ₀)	1295 nm ≤ λ ₀ ≤ 1340 nm	
Zero-dispersion Slope (S ₀)	1295 nm ≤ λ ₀ ≤ 1310 nm	≤ 0.105 ps/nm ² ·km
	1310 nm ≤ λ ₀ ≤ 1340 nm	≤ 0.000375 (1590 - λ ₀) ps/nm ² ·km
Differential Mode Delay (DMD)	See Note ¹	
Fiber Capacity	40GBASE-SR4 / 100GBASE-SR10	170 m ²
	10GBASE-SR	550 m ²
	1GBASE-SR	1100 m
Overfilled Modal Bandwidth	at 850 nm	≥ 3500 MHz·km
	at 1300 nm	≥ 500 MHz·km
Effective Modal Bandwidth (EMB)	at 850 nm	≥ 4700 MHz·km
Bending Loss	Ø=75 mm, 100 turn at 850 nm	≤ 0.5 dB
	Ø=75 mm, 100 turn at 1300 nm	

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OM4-PE-12

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FIBER OPTIC CABLE

Part Number
OM4-PE-12

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