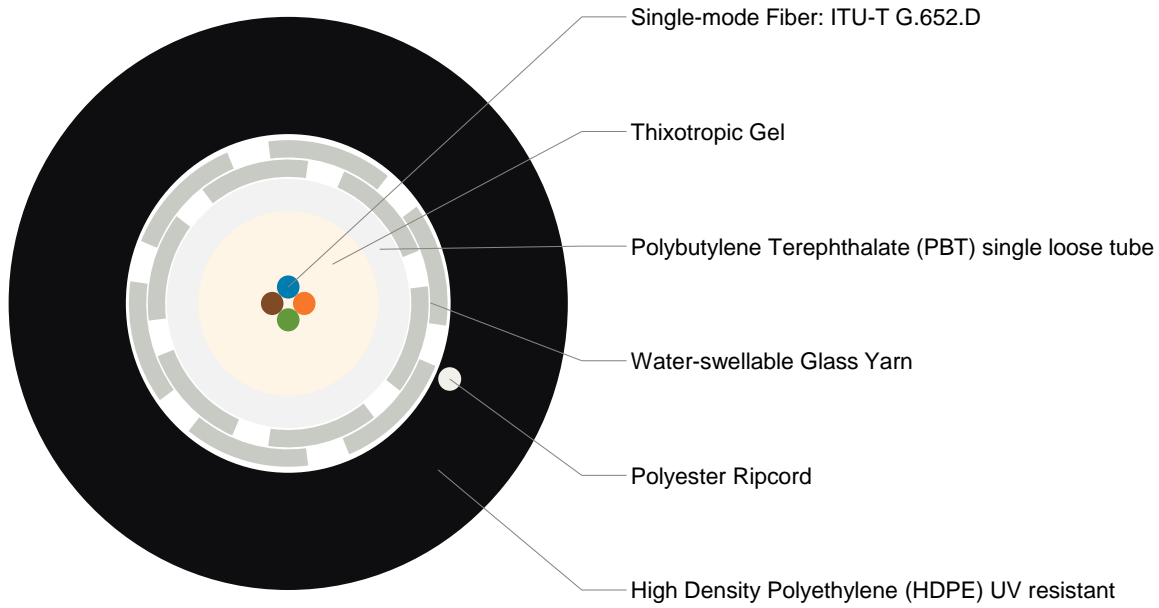


# SM-miniSLT-NMA-SJ-LADSS-(GY20)-4FO

Mini, single loose tube, non-metallic armor, polyethylene jacket, light all-dielectric self-supported, fiber optic cable

## Fiber Optic Cable Drawing



• Not to scale.

## Fiber Optic Cable Tube and Fiber Core Colors

### Tube Color Scheme

1
Natural

### Fiber Optic Core Color Scheme

1	2	3	4
Blue	Orange	Green	Brown

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Characteristics	
Cable Part Number	3.210AO.a6.0.0.1 0.g20.0920.04
Optical Fiber Core and Tube Color Standard	ANSI/TIA-598-D Color Coding
Optical Fiber Type	Single-mode Fiber: ITU-T G.652.D
Optical Fiber Dimensions	9/125/245/260 µm
Optical Fiber Count	4
Cable Type	Single Loose Tube
Tube Material	Polybutylene Terephthalate (PBT)
Tube Diameter	2,8 mm
Tube Filling Compound Material	Thixotropic Gel
Active Tube Count	1
Single Loose Tube Tube Color	Natural
Tensile Strength	2000 N
Dielectric Tensile Strength Member	Water-swallowable 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	Hot foil stamping
Outer Jacket Marking Area	One side
Outer Jacket Marking Application	Applied in one meter intervals
Nominal Cable Diameter	7,1 mm
Net Cable Weight	51 kg/km
Reel Length	2000 meters %±5

ETK Kablo 2020 SM-miniSLT-NMA-SJ-LADSS-(GY20)-4FO Fiber Optic Cable <Length marking in meters>

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Mechanical Characteristics (Cabled)			
Test	Reference Standard	Specified Value	Acceptance Criteria
Maximum Tensile Strength (Short Term)	IEC 60794-1-2-E1	≥ 2000 N·m	Fiber Strain ≤ 0.33%
Maximum Tensile Strength (Long Term)	IEC 60794-1-2-E1	≥ 700 N·m	Δα ≤ 0.05 dB, no fiber starin
Crush Resistance	IEC 60794-1-2-E3	1500 N/100 mm (15 minutes)	Δα ≤ 0.05 dB, no damage.
Impact Resistance	IEC 60794-1-2-E4	10 Nm, 3 impacts, R= 300 mm	Δα ≤ 0.05 dB after the test No damage.
Torsion	IEC 60794-1-2-E7	1 m. 100N, +/- 180°, 10 cycles	No damage.
Repeated Bending	IEC 60794-1-2-E6	R=20xD, 100 N, 35 cycles	No damage.
Water Penetration	IEC 60794-1-2-F5B	Sample=3 m, Water Column=1 m	No water leakage in 24 hours.

Chemical Characteristics	
RoHS	Free of hazardous substances according to RoHS regulation.
REACH	Safe to use according to REACH regulation.

Temperature Range (Cabled)		Minimum Bending Radius	
Transportation	-40 °C to 70 °C	Installation	15 x cable Ø
Storage	-40 °C to 70 °C		
Installation	-30 °C to 60 °C	Operation	20 x cable Ø
Operation	-40 °C to 70 °C		

Optical Fiber Attenuations (Cabled)		
ITU-T G.652.D	Property	Value
	Maximum attenuation at 1310 nm	0.36 dB/km
	Maximum attenuation at 1550 nm	0.22 dB/km

# SM-miniSLT-NMA-SJ-LADSS-(GY20)-4FO

## Optical Fiber Core Specification Low Water Peak Single-Mode Optical Fiber Standard, ITU-T G.652.D (Uncolored Fiber)

Low water peak single-mode optical fiber, made by the vapor phase axial deposition (VAD) method, which enables customer to construct high performance wired network for voice, video and/or data transmission. The fiber, made of a germanium doped silica core and a silica cladding, is in compliance with ITU-T G.652 A, B, C and D.

Structural Specifications		
Fiber Materials		
Core Material		Silica (SiO <sub>2</sub> ) Doped with Germanium Dioxide (GeO <sub>2</sub> )
Cladding Material		Pure silica (SiO <sub>2</sub> )
Coating Material		Dual layers of UV-cured acrylate.
Dimensions		
Mode Field Diameter	at 1310 nm	9.2 ± 0.4 μm
	at 1550 nm	10.3 ± 0.5 μm
Cladding Diameter		125.0 ± 0.5 μm
Coating Diameter (Uncolored)		245 ± 5 μm
Core/Cladding Concentricity Error		≤ 0.4 μm
Cladding Non-circularity		≤ 0.5 %
Coating - Cladding Concentricity Error		≤ 12 μm
Fiber Curl Radius		≥ 4.0 m
Optical Characteristics		
Attenuation Coefficient	at 1310 nm	≤ 0.334 dB/km
	at 1383 nm	≤ 0.314 dB/km <sup>1</sup>
	at 1550 nm	≤ 0.194 dB/km
	at 1625 nm	≤ 0.224 dB/km
Point Discontinuity	at 1310 nm / 1550 nm	≤ 0.05 dB
Cable Cut-off Wavelength (λ <sub>cc</sub> )		< 1260 nm
Zero-dispersion Wavelength (λ <sub>0</sub> )		1300nm ≤ λ <sub>0</sub> ≤ 1324 nm
Zero-dispersion Slope (S <sub>0</sub> )		≤ 0.09 ps/nm <sup>2</sup> /km
Chromatic Dispersion Coefficient	at 1310 nm	≤ 3.5 ps/nm/km
	at 1550 nm	≤ 17 ps/nm/km
	at 1625 nm	≤ 22 ps/nm/km
Maximum Individual Fiber PMD		≤ 0.2 ps/√km
Fiber PMD Link Design Value		≤ 0.08 ps/√km
Mechanical Characteristics		
Proof Stress Level		0.86 GPa (1.2%, 120 kpsi)
Bending Induced Attenuation	Ø=32 mm, 1 turn at 1550 nm	≤ 0.05 dB
	Ø=50 mm, 100 turns at 1310 nm	≤ 0.05 dB
	Ø=50 mm, 100 turns at 1550 nm	≤ 0.05 dB
	Ø=60 mm, 100 turns at 1625 nm	≤ 0.05 dB
Coating Strip Force (F)	peak	1.3 N ≤ F ≤ 8.9 N
	average	1.0 N ≤ F ≤ 5.0 N
Dynamic Tensile Strength	median; 0.5 m, unaged	≥ 3.8 Gpa (550 kpsi)
	median; 0.5 m, aged	≥ 3.0 Gpa (440 kpsi)
Fatigue	nominal value	20
Environmental Characteristics <sup>2</sup>		
Temperature Cycling	-60 °C to 85 °C	≤ 0.05 dB/km
Temperature Humidity Cycling	-10 °C to 85 °C at 85% R. H.	≤ 0.05 dB/km
Water Immersion	at 23 °C ± 2 °C	≤ 0.05 dB/km
Heat Aging	at 85 °C ± 2 °C	≤ 0.05 dB/km
Damp Heat	85 °C at 85% R. H.	≤ 0.05 dB/km
Performance Characteristics		
Effective Group Index of Refraction N <sub>eff</sub>	at 1310 nm / 1383 nm	1.466
	at 1550 nm	1.467
	at 1625 nm	1.470

1. Attenuation increase due to hydrogen aging at this wavelength will be 0.01 db/km or less in accordance with IEC IEC60793-2-50 test procedure.

2. Induced attenuation at 1310 nm, 1550 nm and 1625 nm

• The images are for illustrative purposes only.