

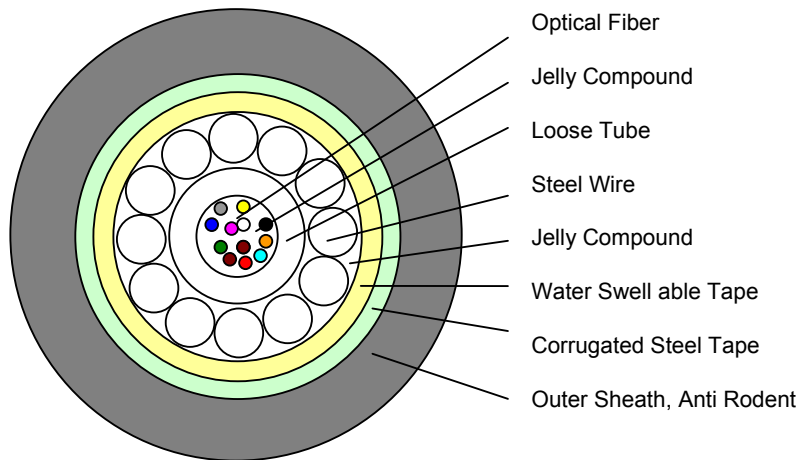
Part No. U-WC-S09X

Cable Construction & Description

Loose Tube Fiber Optic Cable

SM 2~12C, Double Armor, Single Jacket, x is Number of Cores & x ≤ 36

Cable Cross Section



Application

Duct, Aerial, Burial

Identification of optical fiber & Loose Tube

Optical Fiber				Loose Tube
1	Blue	7	Red	White
2	Orange	8	Black	
3	Green	9	Yellow	
4	Brown	10	Violet	
5	Grey	11	Pink	
6	White	12	Aqua	

U-WC-S09X

Cable Information

- Fiber Coloring:** UV Curable Acrylic Color Ink
- No. of Tube:** 1 Tubes
- No. of fiber/Tube:** Max. 12 Fibers
- Loose Tube Material:** PBT
- Filling compound (Tube):** Thixotropic Jelly
- Strength Member:** Steel Wire (Nom.0.9mm Dia.*12c)
- Water Blocking (Core):** Water Swell Jelly
- Outer Sheath:** Nom. 2.0mm Black MDPE
- Cable Marking:** Cable type, Fiber Counts, Name of Manufacturer, Year of Manufacturing, Cable Length in meter
- Cable Outside Diameter:** Nom. 10.4mm
- Cable Weight:** Approx. 90kg/km
- Packing:** Export Wooden Drum
- Bending Radius:**
 - Static: 10D (Diameter of cable)
 - Dynamic: 20D (Diameter of cable)

Optical Fiber Performance

1. Optical & Geometrical Performance

- Mode Field Diameter:** $9.3 \pm 0.5 \mu\text{m}$ at 1310 nm
- Mode Field Concentricity Error:** $\leq 0.8 \mu\text{m}$
- Cladding Diameter:** $125 \pm 1 \mu\text{m}$
- Cladding Non-Circularity:** $\leq 1\%$
- Coating Diameter :** $245 \pm 10 \mu\text{m}$
- Coating Non-Circularity Error:** $\leq 6\%$
- Attenuation Coefficient:** $\leq 0.36 \text{dB/km}$ at 1310nm, $\leq 0.22 \text{dB/km}$ at 1550nm
- Chromatic Dispersion:** $\leq 3.5 \text{ps/nm/km}$ at 1285~1330nm, $\leq 18 \text{ps/nm/km}$ at 1550nm
- Cut-off Wavelength (Acc):** $\leq 1260 \text{nm}$
- Zero Dispersion Wavelength:** 1300~1322nm
- PMD Coefficient:** $\leq 0.2 \text{ps}/\sqrt{\text{km}}$
- Point Discontinuity:** $\leq 0.05 \text{ dB}$ at 1310 & 1550nm
- Effective Group Index of:** 1.4677 at 1310nm(Typical)
- Refraction (Neff):** 1.4682 at 1550nm(Typical)

2. Mechanical & Environmental Performance

- Proof Test Level:** $\geq 0.69 \text{ GPa} (\geq 100 \text{ kpsi})$
- Macro bending (at 75mm dia. x100 turns):** $\leq 0.05 \text{ dB}$ at 1550nm
- Temperature Dependence (-60°C to 85°C):** $\leq 0.05 \text{ dB/km}$ at 1550nm
- Damp Dependence (+80°C, 85%RH for 30Days):** $\leq 0.05 \text{ dB/km}$ at 1550nm
- Water soak Dependence (+20°C for 30Days):** $\leq 0.05 \text{ dB/km}$ at 1550nm

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Mechanical & Environmental Performance

Item	Reference	Test Condition	Acceptance Criteria
Tensile Strength	IEC 794-1-E1	Long Term: 1000N, Short Term: 3000N	Attenuation Increase: ≤0.05dB
Crush	IEC 794-1-E3	Loading: 5000N/100mm	Attenuation Increase: ≤0.05dB
Impact	IEC 794-1-E4	Loading: 10N.m , Cycle: 5	Attenuation Increase: ≤0.05dB
Repeated Bend	IEC 794-1-E6	Bending Radius: X 20D, Cycle: 30	Attenuation Increase: ≤0.05dB
Torsion	IEC 794-1-E7	Length: 1m, Torsion angle: ±180, Cycle:10	Attenuation Increase: ≤0.05dB
Cable Bend	IEC 794-1-E11	Bending Radius: X 10D, Cycle: 10, Turns:5	Attenuation Increase: ≤0.05dB
Temp. Cycling	IEC 794-1-F1	Step:+20°C->-40°C- >+70°C->+20°C, 24Hrs	Attenuation Increase: ≤0.1dB/km
Water Penetration	IEC 794-1-F5	Length: 1m, Height: 1m, Times: 24Hrs	No Leakage