

# Part No. ULATM09X

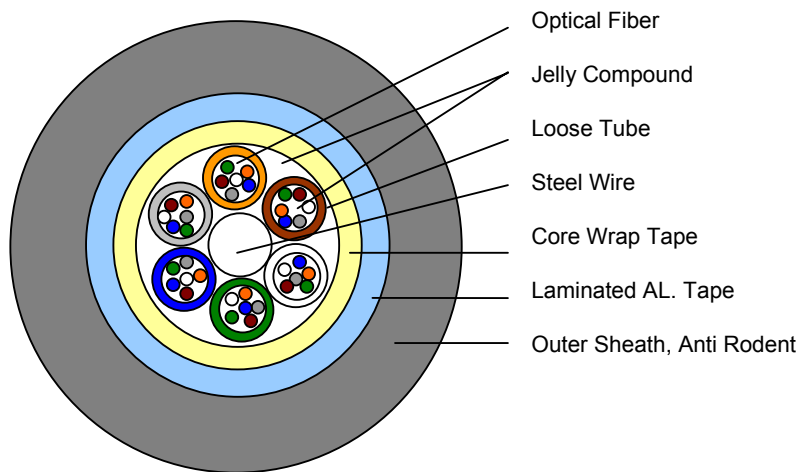


## Cable Construction & Description

### Loose Tube Fiber Optic Cable

SM 2~36C, LAP Sheath, Single Jacket, x is Number of Cores &  $x \leq 36$

## Cable Cross Section



## Application

Duct, Aerial

## Identification of optical fiber & Loose Tube

Optical Fiber		Loose Tube	
1	Blue	1	Blue
2	Orange	2	Orange
3	Green	3	Green
4	Brown	4	Brown
5	Grey	5	Grey
6	White	6	White

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## Cable Information

- Fiber Coloring:** UV Curable Acrylic Color Ink
- No. of Tube:** Max. 6 Tubes
- No. of fiber/Tube:** Max. 6 Fibers
- Loose Tube Material:** PBT
- Filling compound (Tube):** Thixotropic Jelly
- Central Strength Member:** Steel Wire
- Water Blocking (Core):** Water Swell Jelly
- Core Wrap:** Water Swell able Tape
- Laminated AL. Tape:** Nom. 0.3mm Thick.
- Outer Sheath:** Nom. 1.8mm 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

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- 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

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- 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: $\leq 0.05\text{dB}$
Crush	IEC 794-1-E3	Loading: 5000N/100mm	Attenuation Increase: $\leq 0.05\text{dB}$
Impact	IEC 794-1-E4	Loading: 10N.m , Cycle: 5	Attenuation Increase: $\leq 0.05\text{dB}$
Repeated Bend	IEC 794-1-E6	Bending Radius: X 20D, Cycle: 30	Attenuation Increase: $\leq 0.05\text{dB}$
Torsion	IEC 794-1-E7	Length: 1m, Torsion angle: $\pm 180$ , Cycle: 10	Attenuation Increase: $\leq 0.05\text{dB}$
Cable Bend	IEC 794-1-E11	Bending Radius: X 10D, Cycle: 10, Turns: 5	Attenuation Increase: $\leq 0.05\text{dB}$
Temp. Cycling	IEC 794-1-F1	Step: $+20^{\circ}\text{C} \rightarrow -40^{\circ}\text{C} \rightarrow +70^{\circ}\text{C} \rightarrow +20^{\circ}\text{C}$ , 24Hrs	Attenuation Increase: $\leq 0.1\text{dB/km}$
Water Penetration	IEC 794-1-F5	Length: 1m, Height: 1m, Times: 24Hrs	No Leakage