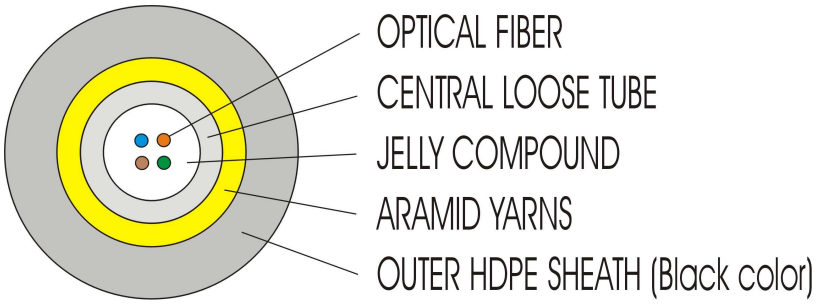
■ MICRO CENTRAL TUBE CABLE (Φ 3.3mm, 2C~12C)



- **SINGLE MODE OPTICAL FIBER (ITU-T G.657A, LBRF; Low Bending Radius Fiber)**
- **CENTRAL LOOSE TUBE (Jelly filled) – White Color**
- **PERIPHERAL STRENGTH MEMBER (Aramid yarns)**
- **MCT_APE* SHEATH FOR MICRO DUCT INSTALLATION (Halogen free PE)**

Total Fiber Counts		**2C, 4C, 12C**
Nom. cable diameter (mm)		**3.3**
Nom. loose tube diameter (mm)		2.2
Nom. outer sheath thickness (mm)		0.5
Min. bend radius (mm)	No load	70
	Under load	100
Max. pulling tension (N)	Installation	250
	Operation	150
Cable weight (kg/km)		9.0
Drum Length (m)		4000
Recommended temperature range		-40℃ ~ +70℃ (Transportation & Storage) -10℃ ~ +50℃ (Installation) -20℃ ~ +60℃ (Operation)

Note) MCT_APE* : Micro Central Tube _ Aramid yarns + PE

● **Mechanical and Environmental Properties**

Item	Test Method	Test Condition	Acceptance Criteria
Tensile strength	IEC 60794-1-E1	- Load: 250 N	Note 1), 2)
Crush	IEC 60794-1-E3	- Load: 700N/100mm	Note 1), 2)
Impact	IEC 60794-1-E4	- Impact energy : 1J (1Nm) - Impact diameter: 25mm, 3points	Note 1), 2)
Repeated bending	IEC 60794-1-E6	- Bending radius: 20×cable diameter - Bending cycles: 35	Note 1), 2)
Torsion	IEC 60794-1-E7	- Test length: 2m - Twist angle: ±180 degrees - Twist cycles: 10	Note 1), 2)
Temperature cycling	IEC 60794-1-F1	- Temperature change: -20℃→+60℃	Note 3)
Water penetration	IEC 60794-1-F5	- Cable length: 3m, Water height: 1m - Duration time: 24 hrs	No water leak

Note 1) Attenuation : ≤ 0.1dB 2) No mechanical damage
3) Attenuation : ≤ 0.2dB/km (each procedure), ≤ 0.1dB/km (after test)

● **Optical Properties of ITU-T G.657A (LBRF : Low Bending Radius Fiber)**

Items of Properties		Value
Geometrical Characteristics	Effective group index (step index) @1310nm @1550nm & 1625nm	 1.468 1.469
	Mode field diameter @1310nm	8.6 ± 0.4 ㎛
	Core/Clad concentricity error	≤ 0.7 ㎛
	Cladding diameter	125 ± 0.7 ㎛
	Cladding non-circularity	≤ 1.0 %
	Coating diameter (Uncolored)	245 ± 10 ㎛
Optical Characteristics	Cutoff wavelength (λ cc)	≤ 1260nm
	Attenuation coefficient @1310nm @1383nm @1550nm @1625nm	 ≤ 0.36 dB/km ≤ 0.31 dB/km ≤ 0.22 dB/km ≤ 0.27 dB/km
	Bending loss (@1550nm/@1625nm) 15mm mandrel radius, 10 turns 10mm mandrel radius, 1 turn 7.5mm mandrel radius, 1 turn	 ≤ 0.03 dB / ≤ 0.10 dB ≤ 0.10 dB / ≤ 0.20 dB ≤ 0.50 dB / ≤ 1.00 dB
	Attenuation uniformity	≤ 0.05 dB
	Chromatic dispersion coefficient @1290~1330nm @1550nm	 ≤ 2.8 ps/nm.km ≤ 18 ps/nm.km
	Zero dispersion wavelength	1300~1322nm
	Zero dispersion slope	≤ 0.092 ps/nm^2.km
	PMD (maximum individual fiber)	≤ 0.2 ps/√ km

Annex 1. Color Code of Optical Fiber

No.	1	2	3	4	5	6	7	8	9	10	11	12
Color	White	Red	Yellow	Green	Blue	Grey	Brown	Black	Violet	Turquoise	Orange	Pink

Note) Color code may be changed upon customer's request.