Specification

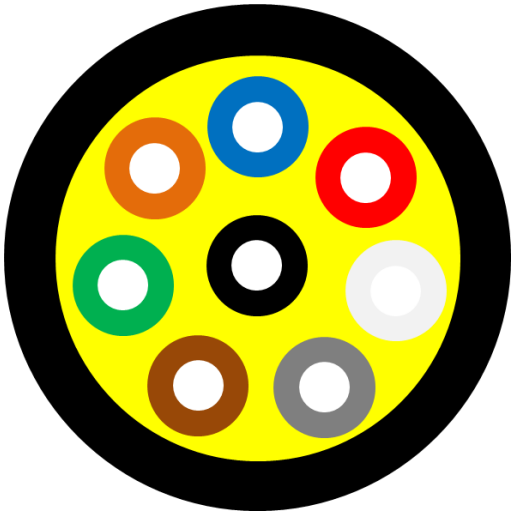
For

<Distribution Cable>

■ Type: Distribution Cable

SMF(G.657A2/B3), MMF(OM2, OM3)

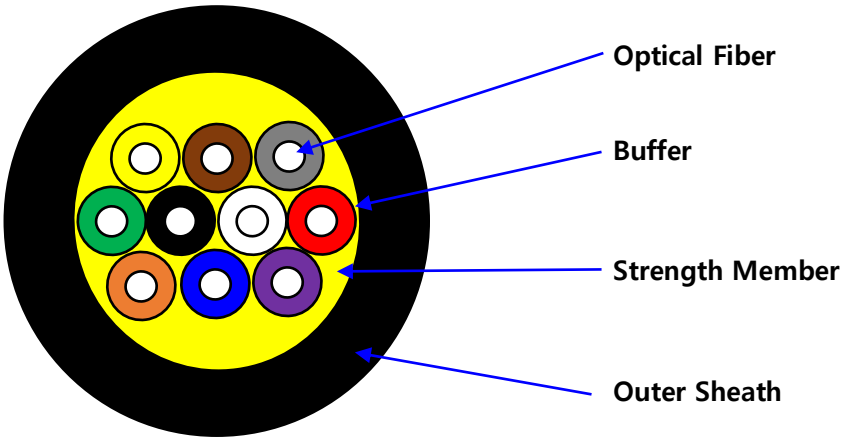
2F/4F/6F/8F/10F



1. Cable Structure

1.1 Cross Section

1.1.1 2F/4F/6F/8F/10F



1.2 Construction

Structure		Material	Specification
Optical Fiber		Fiber	- SMF: G.657A2 or G.657B3 - MMF: OM2, OM3
		Color	- Natural
Tight Buffer		Material	- Hytrel
		Diameter	- 0.90 ± 0.05㎜
		Color	- Blue, Orange, Green, Brown, Gray, White, Red, Black Yellow, Violet
Outer Jacket	Strength Member		- Aramid yarn
	Jacket	Material	- PU
		Diameter	- Diameter: 1.3 Reference - Jacket thickness: Nom. 1.2mm
		Color	- Black
Marking		Ink Jet	- White, Marking Interval 1m

1.3 Cable Diameter & Tensile Strength

Fiber Count	Outer Diameter	Weight (Nominal)	Tensile Strength		Remark
			Long term	Short term	
	mm	kg/km	N		
2	5.4 ± 0.15	27.0	600	1800	1km/drum
4	5.4 ± 0.15	28.0	600	1800	1km/drum
6	6.0 ± 0.3	33.0	600	1800	1km/drum
8	6.5 ± 0.3	38.5	600	1800	1km/drum
10	6.5 ± 0.3	40.0	600	1800	1km/drum

1.4 Cable Order Code

XDPYH-SA C4D55
1 2

Fiber	SA	G652
1	SB	G657A2
	SC	G657B3
	MA	OM1
	MB	OM2
	MC	OM3
	MD	OM4
Fiber Count	C2D55	Fiber Count 2, Cable diameter 5.4 mm
2	C4D55	Fiber Count 4, Cable diameter 5.4 mm
	C6D60	Fiber Count 6, Cable diameter 6.0 mm
	C8D65	Fiber Count 8, Cable diameter 6.5 mm

2. Optical Fiber Property

2.1 Properties of Single Mode Fiber (ITU.G.657A2)

Parameter		Specification
Attenuation coefficient @ 1310 nm @ 1550 nm		(Cable) ≤ 0.40dB/km ≤ 0.30dB/km
PMD		≤ 0.2dB(ps/km$^{1/2}$)
Cable cut-off wavelength		≤ 1260 nm
Zero-dispersion wavelength		1300 ~ 1324 nm
Zero-dispersion slope		≤ 0.092 ps/(nm^2.km)
Chromatic dispersion @ 1285 ~ 1330m @ 1550 nm		 ≤ 3.2 ps/(nm.km) ≤ 18.0 ps/(nm.km)
Mode field diameter @ 1310 nm		8.6± 0.4㎛
Core/Clad concentricity error		≤ 0.5 ㎛
Cladding diameter		125.0 ± 0.7
Cladding non-circularity		≤ 1.0 %
Primary Coating diameter		245 ± 10㎛
Proof test level		100 kpsi, 1%
Attenuation with bending Loss	15 mm diameter, 1 turn	1550nm ≤ Δ 0.50 dB 1625nm ≤ Δ 1.00 dB
	20 mm diameter, 1 turn	1550nm ≤ Δ 0.10 dB 1625nm ≤ Δ 0.20 dB
	30 mm diameter, 10 turn	1550nm ≤ Δ 0.03 dB 1625nm ≤ Δ 0.10 dB

2.2 Properties of Single Mode Fiber (ITU.G.657B3)

Parameter		Specification
Attenuation coefficient @ 1310 nm @ 1550 nm		(Cable) ≤ 0.40dB/km ≤ 0.30dB/km
PMD		≤ 0.5 dB(ps/km$^{1/2}$)
Cable cut-off wavelength		≤ 1260 nm
Zero-dispersion wavelength		1250 ~ 1350 nm
Zero-dispersion slope		≤ 0.092 ps/(nm^2.km)
Chromatic dispersion @ 1285 ~ 1310 nm @ 1550 nm		 ≤ 3.0 ps/(nm.km) ≤ 18.0 ps/(nm.km)
Mode field diameter @ 1310 nm		8.6 ± 0.4 ㎛
Core/Clad concentricity error		≤ 0.5 ㎛
Cladding diameter		125.0 ± 0.7 ㎛
Cladding non-circularity		≤ 1.0 %
Primary Coating diameter		245 ± 10㎛
Proof test level		100 kpsi, 1%
Attenuation Coefficient	Max. at 1310nm	0.5dB/km
	Max. at 1383nm ±3nm	0.3dB/km
	Max. at 1550nm	0.4dB/km
Attenuation with bending Loss	10 mm diameter, 1 turn	1550nm ≤ Δ 0.15 dB 1625nm ≤ Δ 0.45 dB
	15 mm diameter, 1 turn	1550nm ≤ Δ 0.08 dB 1625nm ≤ Δ 0.25 dB
	20 mm diameter, 1 turn	1550nm ≤ Δ 0.03 dB 1625nm ≤ Δ 0.1 dB

2.3 Properties of Cabled Multi Mode fiber (MM50/125)

Parameter	Specification	
	50/125 um (OM2)	**50/125 um (OM3)**
Attenuation coefficient @ 850 nm @ 1300 nm	 ≤ 3.0 dB/km ≤ 1.0 dB/km	 ≤ 3.0 dB/km ≤ 1.0 dB/km
Bandwidth @ 850 nm @ 1300 nm	 ≥ 500 Mhz.km ≥ 500 Mhz.km	 ≥ 1500 Mhz.km ≥ 500 Mhz.km
Link Distance(m)	1000Base-SX, 550m 1000Base-LX, 550m 10000Base-SX, 82m	1000Base-SX, 900m 1000Base-LX, 550m 10000Base-SX, 300m
Numerical Aperture	0.20 ± 0.015	0.20 ± 0.015
Core Diameter	50 ± 2.5 um	50 ± 2.5 um
Core Non-circularity	≤ 6 %	≤ 6%
Cladding Diameter	125 ± 1 um	125 ± 1 um
Cladding Non-circularity	≤ 2.0 %	≤ 2.0 %
Core/Cladding Concentricity Error	≤ 2 um	≤ 2 um
Coating Diameter	245 ± 10 um	245 ± 10 um
Proof Test	100 kpsi, 1%	100 kpsi, 1%

3. Cable Property

3.1 Mechanical & Environmental Properties

3.1.1 Cable bending radius: 10 x cable diameter (during operation)
15 x cable diameter (during installation)

3.1.2 Operating temperature range : -30°C to +85°C
Installation temperature range : -20°C to +60°C

3.2 Mechanical & Environmental Requirements

No	Item	Test Method	Specification
1	Tensile load IEC60794-1-2-E1	- Load: Refer 1.3 - Length: 50m ↑ - Time: Long term: 60 mins. Short term: 10 mins.	-Loss change ≤ 0.1 dB @1550 nm(SMF) ≤ 0.1 dB @1300 nm(MMF)
2	Crush test IEC60794-1-2-E3	- Load: 1,000N - Plate: 10*10mm - Time: 10 mins.	-Loss change ≤ 0.1 dB @1550 nm(SMF) ≤ 0.1 dB @1300 nm(MMF)
3	Bending test IEC60794-1-2-E11B	- Mandrel dia.: Cable dia. X 10 - 25 times	-Loss change ≤ 0.1 dB @1550 nm(SMF) ≤ 0.1 dB @1300 nm(MMF)
4	Impact test IEC60794-1-2-E4	- Radius of impacted surface: 12.5mm - Impact load: 3J - Point: 10 difference Points	-Loss change ≤ 0.1 dB @1550 nm(SMF) ≤ 0.1 dB @1300 nm(MMF)
5	Torsion IEC60794-1-2-E7	- Length: 2m - Load: 50N - Twist angle: ±180° - Times: 10 times	-Loss change ≤ 0.1 dB @1550 nm(SMF) ≤ 0.1 dB @1300 nm(MMF)
6	Temperature Cycling IEC60794-1-2-F1	- Length: 1,000m - Temperature cycle: 20°C→-30°C→+85°C→-30°C→+85°C→20°C - Number of cycles: 1 - Time per step: 12hours	-Loss change ≤ 0.1 dB/km @1550 nm(SMF) ≤ 0.2 dB/km @1300 nm(MMF)