



REAL OPTIC

INDOOR & OUTDOOR CABLE SPECIFICATION

■ Type : DISTRIBUTION CABLE

SMF, MMF

6F, 12F, 24F

■ Spec. No. : OMXTBXX

■ REAL OPTIC

■ Date : November 13, 2022

= 1 / 7 =

Importado y Distribuido por Real Optic Limitada

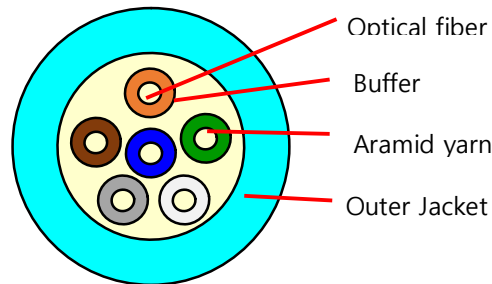
Avenida Ventisquero #1204 Modulo 18 - Renca, Chile - ventas@realoptic.com - www.realoptic.com -WP:+56996374501



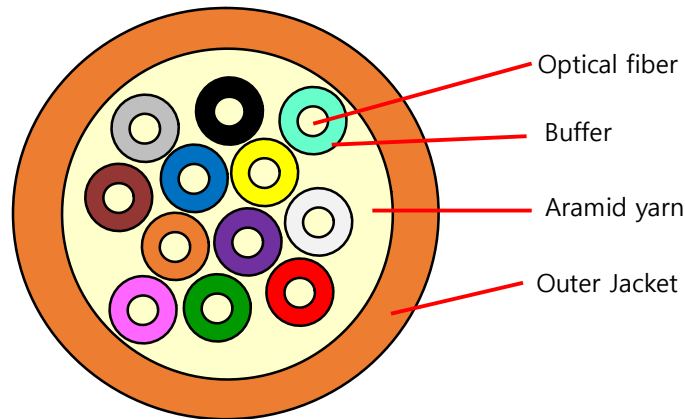
1. Cable Structure

1.1 Cross Section

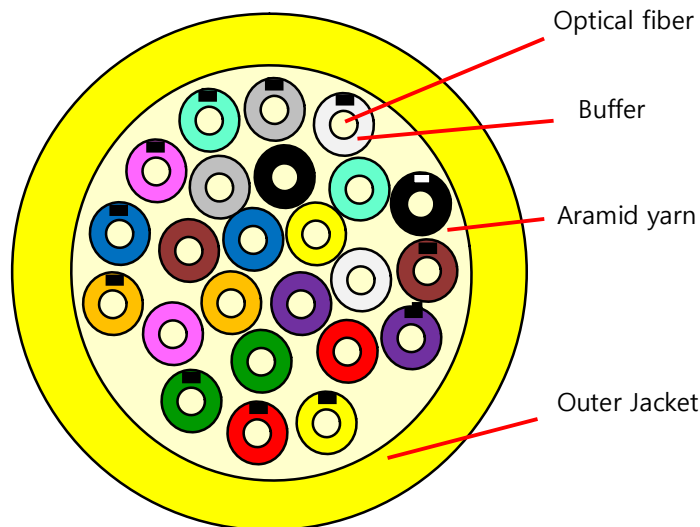
1.1.1 6F



1.1.2 12F



1.1.3 24FC



<Not to Scale, Color could vary upon customer's request>

= 2 / 7 =

Importado y Distribuido por Real Optic Limitada

Avenida Ventisquero #1204 Modulo 18 - Renca, Chile - ventas@realoptic.com - www.realoptic.com -WP:+56996374501



1.2 Construction

Structure		Material	SPECIFICATION
Optical Fiber		Fiber	- SMF : G652D - MMF : 62.5(OM1), 50.0(OM3), 50.0(OM4)
Tight Buffer		Material	- LSZH
		Diameter	- 0.90 ± 0.05mm
		Color	- 1C~12C : Blue, Orange, Green, Brown, Gray, White Red, Black, Yellow, Violet, Pink, Aqua - 13C~24C(line marking) : Blue, Orange, Green, Brown, Gray, White, Red, Black, Yellow, Violet, Pink, Aqua
Outer Jacket	Strength Member		- Aramid yarn
	Jacket	Material	- LSZH
		Diameter	- Diameter : 1.3 Reference - Jacket thickness : 6F, 12F : 1.1 ± 0.2mm 24F : 1.2 ± 0.2mm
		Color	- G.652D : Yellow - OM1 : Orange, OM3 : Aqua, OM4 : Erika Violet
Marking		Ink Jet	- Black, Marking Interval 1m

1.3 Cable diameter & Tensile strength

Fiber Count	Outer Diameter	Weight (Nominal)	Max. Pulling Strength	Remark
	mm	Kg/km	N	
6	6.0 ± 0.3	35.0	1,500	2km/drum
12	7.1 ± 0.3	47.9	1,600	2km/drum
24	8.9 ± 0.3	72.8	2,200	2km/drum



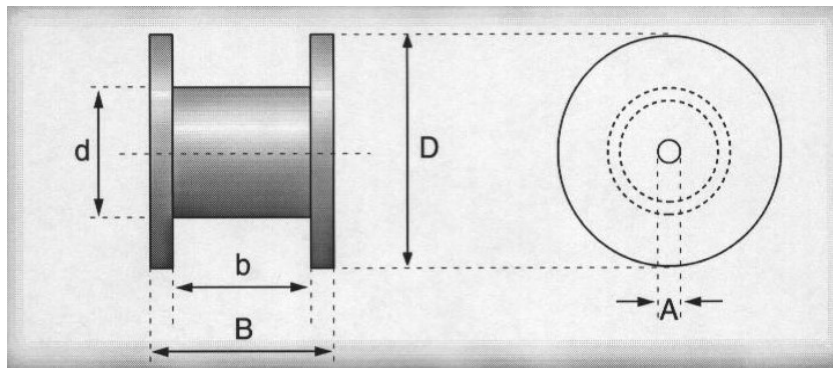
1.4 Marking

DISTRIBUTION CABLE ●● □□/125 ■■F XXXX M

- ●● : Single mode : SM, Multi-mode : MM, MM OM1(or OM3, OM4)
- □□ : Single mode → 9, Multi mode → 50 / 62.5, ■■ → 04 ~ 24
- XXXXM : figure of meter
- The marking is printed every 1 meter

1.5 Packing

- 2km/drum
- Plywood drum



Note: The value “D” doesn’t contain the seal dimension.

Item	Cable Length (m)	Drum Dimensions				Packing
		D (mm)	d (mm)	b (mm)	B (mm)	Material
6F	2,000	800	500	450	485	Lamiflex + Wrapping
12F	2,000	800	500	450	485	Lamiflex + Wrapping
24F	2,000	1000	530	450	490	Lamiflex + Wrapping

= 4 / 7 =

Importado y Distribuido por Real Optic Limitada

Avenida Ventisquero #1204 Modulo 18 - Renca, Chile - ventas@realoptic.com - www.realoptic.com -WP:+56996374501



2. Optical Fiber Property

2.1 The properties of single mode fiber (ITU-T G.652D)

Parameter	Specification
Attenuation coefficient	
@ 1310 nm	$\leq 0.40\text{dB/km}$
@ 1383 nm	$\leq 0.40\text{dB/km}$
@ 1550 nm	$\leq 0.30\text{dB/km}$
@ 1625 nm	$\leq 0.35\text{dB/km}$
PMD(Maximum individual fiber)	$\leq 0.2\text{dB}(\text{ps}/\text{km}^{1/2})$
Cable cut-off wavelength	$\leq 1260\text{ nm}$
Zero-dispersion wavelength	1300 ~ 1324 nm
Zero-dispersion slope	$\leq 0.092\text{ ps}/(\text{nm}^2.\text{km})$
Chromatic dispersion	
@ 1285 ~ 1310 nm	$\leq 3.0\text{ ps}/(\text{nm}^2.\text{km})$
@ 1550 nm	$\leq 18.0\text{ ps}/(\text{nm}^2.\text{km})$
Mode field diameter @ 1310 nm	$9.2 \pm 0.4\text{ }\mu\text{m}$
Core/Clad concentricity error	$\leq 0.3\text{ }\mu\text{m}$
Cladding diameter	$125.0 \pm 1.0\text{ }\mu\text{m}$
Cladding non-circularity	$\leq 1.0\%$
Primary Coating diameter	$245 \pm 10\text{ }\mu\text{m}$
Refractive index	1.4690 @ 1310 nm 1.4695 @ 1550 nm
Proof test level	100 kpsi, 1%



2.2 The properties of cabled multi-mode fiber

Parameter	Specification		
	62.5/125um (OM1)	50/125 um (OM3)	50/125 um (OM4)
Attenuation coefficient @ 850 nm @ 1300 nm	≤ 3.5 dB/km ≤ 1.0 dB/km	≤ 3.0 dB/km ≤ 1.0 dB/km	≤ 3.0 dB/km ≤ 1.0 dB/km
Bandwidth @ 850 nm @ 1300 nm	≥ 200 Mhz.km ≥ 500 Mhz.km	≥ 1500 Mhz.km ≥ 500 Mhz.km	≥ 3500 Mhz.km ≥ 500 Mhz.km
Link Distance(m)	1000Base-SX, 275m 1000Base-LX, 550m	1000Base-SX, 900m 1000Base-LX, 550m 10000Base-SX, 300m	1000Base-SX, 1100m 1000Base-LX, 550m 10000Base-SX, 550m
Numerical Aperture	0.275 ± 0.015	0.200 ± 0.015	0.200 ± 0.015
Core diameter @ 1300 nm	62.5 ± 2.0 um	50.0 ± 2.5 um	50.0 ± 2.5 um
Core / Cladding concentricity error	≤ 3.0 um	≤ 3.0 um	≤ 3.0 um
Core non-circularity	≤ 6 %	≤ 6 %	≤ 6 %
Cladding diameter	125.0 ± 2.0 um	125.0 ± 2.0 um	125.0 ± 2.0 um
Cladding non-circularity	≤ 2.0 %	≤ 2.0 %	≤ 2.0 %
Primary Coating diameter	245 ± 15 um	245 ± 15 um	245 ± 15 um
Proof test level	100 kpsi, 1%	100 kpsi, 1%	100 kpsi, 1%



3. Cable Property

3.1 Mechanical & Environmental properties

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

3.1.2 Operating/Storage temperature range : -20°C to +60°C
Installation temperature range : -10°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: 100 m - Time: 10 mins	-Loss change ≤ 0.1 dB @1550 nm (SM) ≤ 0.1 dB @1300 nm (MM)
2	Crush test IEC60794-1-2-E3	- Load: 1,000N - Plate : 100*100mm - Time: 5 mins.	-Loss change ≤ 0.1 dB @1550 nm (SM) ≤ 0.1 dB @1300 nm (MM)
3	Bending test IEC60794-1-2-E11B	- Mandrel dia. : Cable OD * 15 - Angle: ±90° - No. of cycle : 5	-Loss change ≤ 0.1 dB @1550 nm (SM) ≤ 0.1 dB @1300 nm (MM)
4	Impact test IEC60794-1-2-E4	- Radius of impacted surface: 25 mm - Impact load: 0.5 kg - Falling height: 1000mm - Times : 10	-Loss change ≤ 0.1 dB @1550 nm (SM) ≤ 0.1 dB @1300 nm (MM)
5	Torsion IEC60794-1-2-E7	- Length: 2 m - Load: 50 N - Twist angle: ±180° - No. of cycle : 5	-Loss change ≤ 0.1 dB @1550 nm (SM) ≤ 0.1 dB @1300 nm (MM)
6	Temperature Cycling IEC60794-1-2-F1	- Length : 1,000m: - Temperature cycle: 20°C→-20°C→+60°C→-20°C→+60°C→20°C - Number of cycle: 1 - Time per step: 12 hours	-Loss change ≤ 0.1 dB @1550 nm (SM) ≤ 0.3 dB @1300 nm (MM)