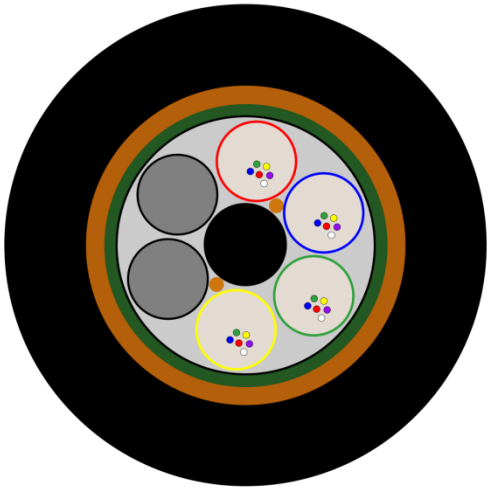
Outdoor Fiber Optic Cable

Type: OPUG 24/M6 G652D NA SJ MDPE 2.5kN D10



Application

For outdoor installation, in ducts

Fully dielectric cable

~ IEC 60793-1 - Optical fiber Part 1: Generic specifications

~ IEC 60793-2 - Optical fiber Part 2: Product specifications

~ IEC 60794-1-2 - Basic optical cable test procedures

~ ITU-T G.652 - Characteristics of a single-mode optical fiber cable

Cable Construction

~ **Central Strength Member** (CSM)- glass fiber reinforced plastic rod (FRP);

~ **PBT Loose Tube** filled with a suitable water tightness compound;

~ **Optical Fibers**

~ **Filler(s)** if needed

~ **Longitudinal Water Tightness:** dry core with water swellable elements (water blocking yarns and tape);

~ **Aramid Yarns;**

~ **Outer Jacket** (Black MDPE)

Stranding: Loose tube and fillers, SZ stranded around CSM;

Technical Characteristics

Optical Fiber Performance - G.652D	
Characteristic	**Specified Value**
Attenuation Coefficient: at 1310 nm Max :	≤ 0.35 dB/km

at 1550 nm Max :	≤ 0.22 dB/km
Chromatic Dispersion: between 1285 - 1330 nm: at 1550nm	 ≤ 3.5 ps/nm·km ≤ 18 ps/nm·km
Attenuation Non-uniformity at 1310 nm at 1550 nm	 ≤ 0.03 dB ≤ 0.03 dB
Point Discontinuity: at 1310&1550 nm	 ≤ 0.1 dB
Polarization Mode Dispersion (PMD) PMD Q value	≤ 0.2 ps/√km
The optical fiber core and sheath shall be of the E9 / 125 type. The protective cover must be in direct contact with the surface of the optical fiber to protect it and avoid cracking of the optical fiber	E9 / 125 type
Cable Cut off Wavelength (λcc)	≤ 1260 nm
Mode Field Diameter: at 1310 nm at 1550 nm	 9.2 ±0.4μm 10.4±0.5μm
The uniformity attenuation at any projected wavelength	≤ 0.1 dB/km
Cladding Diameter	125 ±1.0μm
Mode field (Core/clad) concentricity error	≤ 0.6 μm
Cladding Non-Circularity	≤1%
Coating Diameter	245 ± 7μm
Core / Cladding Concentricity error	≤ 0.6μm
The increase in attenuation of 100 optical fiber cores wrapped on a 50 mm diameter chuck at 1310 nm: at 1550 nm:	 ≤0,05 dB; ≤ 0,05 dB
Coating-Cladding Concentricity error	≤ 12μm
Proof Test	≥ 1.0%, 1 sec. ≥ 0.69Gpa (100kpsi)
Temperature Cycling Induced Attenuation: at 1550nm and 1625 nm (-400C to +700C)	0.05dB/km
Macro bending Loss : at 1550nm and 1625 nm (100 turns; Φ 60 mm)	 ≤ 0.1dB

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Fiber Optic Cable Parameters	
Core Type *	G.652.D
Fiber Count	24
Tube Count	4
Filler Count	2
Cable Diameter (mm)	10.0
Cable Weight (kg/km)	77.0
Allowable Tensile Strength (short-term)	2.5 kN
Crush	1500 N/10cm
Water ingress resistance	1m, 24H, 3 samples
Minimum Bending Radius (Installing)	20 x D
Minimum Bending Radius (Operating)	15 x D
Temperature (Installation)	-10°C ~ +60 °C
Temperature (Transportation and Operation)	-25°C ~ +70 °C
Life Span	>30 yr
Packing	Wooden drum with protection
Delivery Lengths	To be confirmed, ± %5 tolerance
Marking	<OPTIVINE> + <OPUG 24/M6 G652D NA SJ MDPE 2.5kN D10> + <manufacturing date> + <length >

Fiber Color Identification**																
No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Color	Green	Red	Blue	Yellow	Grey	Violet	Brown	Orange	White	Black	Pink	Turquoise	Green + BR	Red + BR	Blue + BR	Yellow + BR

Tube Color Identification***																		
No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Color	Green	Red	Blue	Yellow	Grey	Violet	Brown	Orange	White	Black	Pink	Turquoise	Green + BS	Red + BS	Blue + BS	Yellow + BS	Grey + BS	Violet + BS

* Other fiber types can be used upon request.

** When tubes go beyond 12 fibers, the colors repeat but black rings are used to distinguish the fibers.

*** When cables go beyond 12 tubes, the colors repeat but black stripes are used to distinguish the tubes.

**** Customized solutions can be offered upon request.