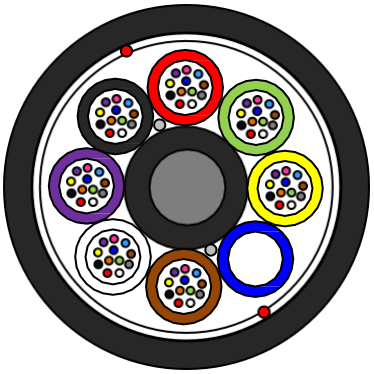
Duct Cable

Cable Design

Buffer Tube Optical Fiber Cable-Glass Yarn Reinforcing-Dielectric-Dry Core-G.652D Fiber



- **Central Strength Member (CSM):** glass fiber reinforced plastic rod (FRP), with PE sheath covering when needed.
- **Buffer Tube**: PBT plastic material, containing 4/812 fibers and filled with a suitable water tightness compound.
- **Filler Elements**: Nature PP plastic rods, when needed.
- **Stranding:** loose tubes (and fillers), SZ stranded around the CSM
- **Longitudinal Water Tightness:** dry core with water swellable elements (water blocking tape & yarn).
- **Glass Yarns:** glass yarn flat tape.
- **Ripcord(s):** 2 polyester ripcords under sheath.
- **Outer Sheath:** Black HDPE.

Cable Specification

Cable Cores		20	24	48	12	24	48	96	192
No. of Tubes		5	6	6	1	2	4	8	16
No. of Fillers		0	0	0	5	4	2	0	2
Fiber Counts in Tube		4		8	12				
Tube/Filler- Φ	mm	2.2			2.4				
CSM- Φ	mm	1.8	2.3		2.5			3.0	2.5
Coated CSM- Φ	mm	/			/			4.2	/
Thickness of Outer PE Sheath	mm	1.5							
Nominal Cable Diameter	mm	10.2	10.7		11.0			13.0	16.5
Nominal Cable Weight	Kg/km	80	90		96			134	194

Main Mechanical and Environmental Characteristics

Temperature Range		Minimum Bend Radius	
Transportation & Storage	-30~+70℃	Load	20×D
Operation	-30~+70℃	Unload	15×D

Cable Application

Test	Test Standard	Specified Value	Acceptance Criteria
Tensile	IEC 60794-1-2-E1	2700N, 5min	△α≤0.05dB, no fiber strain
Crush	IEC 60794-1-2-E3	3000N/10cm, 15min, 3times	△α≤0.1dB, no damage
Impact	IEC 60794-1-2-E4	10J, R=20mm, 3impacts	△α reversible, no damage
Repeated Bending	IEC 60794-1-2-E6	R=20D, 100N, 35cycles	△α reversible, no damage
Torsion	IEC 60794-1-2-E7		△α≤0.1dB, no damage
Temperature Cycling	IEC 60794-1-2-F1	-30~+70℃, 2cycles, 8h	△α≤0.10dB/km, no damage
Water Penetration	IEC 60794-1-2-F5	3m sample, 1m height, 24h	No water leakage

Duct Cable

Fiber & Tube Color

Color Identification of Fiber

No	1	2	3	4	5	6	7	8	9	10	11	12
Color	Red	Green	Yellow	Blue	Brown	White	Purple	Black	Gray	Orange	Aqua	Pink

Color Identification of Tube

No	1	2	3	4	5	6	7	8
Color	Red	Green	Yellow	Blue	Brown	White	Purple	Black

Cabled Fiber Performance (G.652D)

Characteristics		Acceptance Value
Attenuation	@1310nm	≤0.35dB/km
	@1383nm	≤0.34dB/km
	@1550nm	≤0.21dB/km
Mode Field Diameter	@1310nm	9.2±0.4μm
	@1550nm	10.4±0.5μm
Dispersion	@1300+30/-15nm	≤3.5ps/(nm·km)
	@1550nm	≤18ps/(nm·km)
	@1625nm	≤22ps/(nm·km)
Zero-Dispersion wavelength		1302nm～1322nm
Zero-Dispersion slope		≤0.092ps/(nm^2·km)
Cable cutoff wavelength λ_{cc}(nm)		≤1260nm
Polarization Mode Dispersion	Max. individual	≤0.10ps/km$^{1/2}$
Cladding diameter		125±0.7μm
Cladding non-circularity		≤0.7%
Core/cladding concentricity error		≤0.5μm
Fiber diameter with coating (colored)		245±10μm
Cladding/coating concentricity error		≤12.0μm
Proof stress		≥0.69GPa(100kpsi)
Dynamic stress corrosion susceptibility parameter (typical value)		≥20

Sheath Marking

The outer sheath is marked in 1 meter intervals as follows:

In Accordance with Custom's Requirement

Delivery Lenght

Standard delivery length could be 2,3, 4 or 6km.