

Optical Fiber Mini Cable 288F G.652D

Cable Design

Loose Tube Optical Fiber Cable-Non-Armored-Dielectric-Dry Core-G.652D Fiber



- **Central Strain-support Element (CE):** glass fiber reinforced plastic rod (FRP), with PE sheath covering when needed.
- **Buffer Tube:** PBT plastic material, containing 12 fibers and filled with a suitable water tightness compound.
- **Filler Elements:** Nature plastic rods, when needed.
- **Stranding:** loose tubes (and fillers), SZ stranded around the CE.
- **Longitudinal Water Tightness:** dry core with water swellable elements.
- **Ripcord(s):** 1 aramid ripcord under sheath.
- **Outer Sheath:** Black HDPE.

Cable Specification

Cable Cores		288
Fiber Counts in Tube		12
No. of Tubes		24
No. of Fillers		0
Tube/Filler- \varnothing	mm	1.4
CE- \varnothing	mm	2.5
Coated CE- \varnothing	mm	3.0
Thickness of Outer PE Sheath	mm	0.5
Nominal Cable Diameter	mm	9.6 \pm 0.3
Nominal Cable Weight	Kg/km	71
Max tensile load	daN	100
Max Crush resistance	daN/cm	10
Min cable static bending radius	mm	10xD

Cable Application

Temperature Range		Minimum Bend Radius	
Transportation & Storage	-30 \sim +70 $^{\circ}$ C	Load	20xD
Operation	-30 \sim +70 $^{\circ}$ C	Unload	10xD

Main Mechanical and Environmental Characteristic

Test	Test Standard	Specified Value	Acceptance Criteria
Tensile	IEC 60794-1-2-E1	100 daN, 5min	$\Delta\alpha\leq 0.05$ dB reversible, fiber strain $\leq 0.33\%$
Crush	IEC 60794-1-2-E3	100 daN/m, 1 min	$\Delta\alpha$ reversible, no damage
Impact	IEC 60794-1-2-E4	2.5J, R=300mm	$\Delta\alpha$ reversible, no damage
Repeated Bending	IEC 60794-1-2-E6	R=20D, 40N, 25 cycles	$\Delta\alpha$ reversible, no damage

Optical Fiber Mini Cable 288F G.652D

Bend	IEC 60794-1-2-E11	R=10D, 3 cycles, 4 turns	$\Delta\alpha$ reversible, no damage
Torsion	IEC 60794-1-2-E7	40N, 5 cycles, +/-360°	$\Delta\alpha$ reversible, no damage
Temperature Cycling	IEC 60794-1-2-F1	-30°C, -15°C ~+60°C, +70°C,	$\Delta\alpha \leq 0.10\text{dB/km}$, after test, no damage
Water Penetration	IEC 60794-1-2-F5	3m sample, 1m height, 24h	No water leakage

Cabled Fiber Performance (G.652D)

Characteristic		Acceptance Value
Attenuation	@1310nm	$\leq 0.35\text{dB/km}$
	@1383nm	$\leq 0.34\text{dB/km}$
	@1490nm	$\leq 0.23\text{dB/km}$
	@1550nm	$\leq 0.21\text{dB/km}$
	@1625nm	$\leq 0.24\text{dB/km}$
Mode Field Diameter	@1310nm	$9.2 \pm 0.4 \mu\text{m}$
	@1550nm	$10.4 \pm 0.5 \mu\text{m}$
Dispersion	@1300 +30/-15nm	$\leq 3.5\text{ps}/(\text{nm}\cdot\text{km})$
	@1550nm	$\leq 17\text{ps}/(\text{nm}\cdot\text{km})$
	@1625nm	$\leq 22\text{ps}/(\text{nm}\cdot\text{km})$
Macrobend loss at 1550nm	$\Phi 50\text{mm}, 100$ turns	$\leq 0.05\text{dB}$
Macrobend loss at 1625nm	$\Phi 30\text{mm}, 100$ turns	$\leq 0.10\text{dB}$
Zero-Dispersion wavelength		$1300\text{nm} \sim 1324\text{nm}$
Zero-Dispersion slope		$\leq 0.092\text{ps}/(\text{nm}^2\cdot\text{km})$
Cable cutoff wavelength $\lambda_{cc}(\text{nm})$		$\leq 1260\text{nm}$
PMD	Max. individual	$\leq 0.20\text{ps}/\text{km}^{1/2}$
	Linked design	$\leq 0.06\text{ps}/\text{km}^{1/2}$
Cladding diameter		$125 \pm 1.0 \mu\text{m}$
Cladding non-circularity		$\leq 1.0\%$
Core/cladding concentricity error		$\leq 0.6 \mu\text{m}$
Fiber Diameter with coating (un-colored)		$245 \pm 10 \mu\text{m}$
Fiber Diameter with coating (colored)		$250 \pm 15 \mu\text{m}$
Cladding/coating concentricity error		$\leq 12.5 \mu\text{m}$
Proof stress		$\geq 0.69\text{GPa}(100\text{kpsi})$
Dynamic stress corrosion susceptibility parameter (typical value)		≥ 20

Fiber and Tube Color

Optical Fiber Mini Cable 288F G.652D

Color Identification of Fiber

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

Color Identification of Tube

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

* if the color number is more than 12, the tube color code will be marked black ring and repeated.

Sheath Marking, Delivery Length

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

In Accordance with Custom's Requirement

Standard delivery length will be 4 or 6km with -1 /+3% tolerance.