

Standard Induct O.F. Cable 24-288F 2700N

Cable Design

Loose Tube Optical Fiber Cable-Glass Yarn Reinforced-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 PP plastic rods, when needed.
- **Stranding:** loose tubes (and fillers), SZ stranded around the CE.
- **Longitudinal Water Tightness:** dry core with water swellable elements.
- **Glass Yarn:** additional strength member
- **Ripcord(s):** 2 polyester ripcords under sheath.
- **Outer Sheath:** Black HDPE.

Cable Specification

Cable Cores		24	48	72	96	144	192	288	
No. of Tubes		2	4	6	8	12	16	24	
No. of Fillers		4	2	0	0	0	2	0	
Fiber Counts in Fiber		12							
Tube/Filler- ϕ	mm	2.4							
CE- ϕ	mm	2.5		2.5	3.0	2.5	3.0		
Coated CE- Φ	mm	/		4.2	7.3	/		4.8	
Thickness of Outer PE Sheath	mm	1.5					1.6	1.6	
Nominal Cable Diameter (± 0.5 mm tolerance)	mm	10.9		12.6	15.7	16.2	18.2		
Nominal Cable Weight	Kg/km	90		115	180	190	235		
Max Tensile Load	daN	270							
Max Crush resistance	daN/cm	30							
Min cable static bending radius	mm	10D							

Cable Application

Temperature Range		Minimum Bend Radius	
Transportation & Storage	-40~+70°C	Load	20×D
Operation	-40~+70°C	Unload	10×D

Main Mechanical and Environmental Characteristic

Test	Test Standard	Specified Value	Acceptance Criteria
Tensile	IEC 60794-1-2-E1	270daN, 5 min	$\Delta\alpha \leq 0.05$ dB, fiber strain $\leq 0.6\%$
Crush	IEC 60794-1-2-E3	30daN/cm, 1 min 3 times	$\Delta\alpha$ reversible, no damage
Impact	IEC 60794-1-2-E4	4J, 3 impacts R=300mm	$\Delta\alpha$ reversible, no damage
Repeated Bending	IEC 60794-1-2-E6	R=20D, 100cycles, 5 cycles	$\Delta\alpha \leq 0.05$ dB, no damage
Bend	IEC 60794-1-2-E11	R=20D, 3 cycles, 4 turns	$\Delta\alpha$ reversible, no damage

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Torsion	IEC 60794-1-2-E7	250N,10 cycles, +/-180°	$\Delta\alpha$ reversible, no damage
Temperature Cycling	IEC 60794-1-2-F1	-40~+70°C, 2 cycles, 6h	$\Delta\alpha\leq 0.05\text{dB}$, no damage
Water Penetration	IEC 60794-1-2-F5	3m sample, 1m height, 24h	No water leakage
Sheath abrasion	IEC 60794-1-2-E2A	4N, 300cycles, 10mm length	Non-penetrating on sheath
Marking abrasion	IEC 60794-1-2-E2B	60cycles, 1.0mm 4N	Print clearly
Drip test_loose tube	IEC 60794-1-2-E14	75°C length 300mm	No Drip
Sheath aging test	IEC 60794-1-2-F9	100°C, 7*24h, 0.5J, 10D	No aging phenomenon
Loose Kinking	IEC 60794-1-23:G7	5cycles, L=70, L1, L2	No kink

Cabled Fiber Performance (G.652D)

Characteristics		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	$\Phi 50\text{mm}, 100\text{ turns}$	$\leq 0.05\text{dB}$
Macrobend loss at 1625nm	$\Phi 30\text{mm}, 100\text{ turns}$	$\leq 0.10\text{dB}$
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 $\lambda_{cc}(\text{nm})$		$\leq 1260\text{nm}$
Polarization Mode Dispersion 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

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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

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 km with -1+3% tolerance.