

Micro-Module Multi-Purpose Fiber Optic Cable

Type: MMMP 288/M12 G657A2 60m 4SFRP SJ HDPE CA



Application & Standards

- ~ For aerial or duct installation;
- ~ Fully dielectric cable;
- ~ Easy strippable micro-modules without any tools needed;
- ~ IEC 60794-1-2 - Basic optical cable test procedures;
- ~ XP C 93-850-3-25 - Color code of fiber optic cables;
- ~ ITU-T G.657A2 - Characteristics of a bending-loss insensitive single-mode optical fibre and cable

Cable Construction

- ~ Optical Fibres
- ~ Jelly
- ~ Easy strippable micromodule
- ~ Aramid Yarns
- ~ Waterproof Yarns
- ~ Strength Member (2x2 side FRP)
- ~ Outer Sheath (Black HDPE)

Technical Characteristics

| Optical Fiber Performance | |
|---------------------------|---------------------------|
| Characteristic | Specified Value |
| Attenuation Coefficient: | |
| at 1310nm : | ≤ 0.36 dB/km |
| at 1550nm : | ≤ 0.22 dB/km |
| Mode Field Diameter: | |
| at 1310nm | $8.6 \pm 0.4 \mu\text{m}$ |
| Chromatic Dispersion: | |
| at 1330nm | ≤ 3.5 ps/(nm.km) |

| | | |
|---|---|------------------------|
| at 1550nm | $\leq 18 \text{ ps}/(\text{nm.km})$ | |
| at 1625nm | $\leq 22 \text{ ps}/(\text{nm.km})$ | |
| Zero Dispersion Wavelength | 1300 ~ 1324 nm | |
| Zero Dispersion Slope | $\leq 0.092 \text{ ps}/(\text{nm}^2.\text{km})$ | |
| Cable Cut off Wavelength (λ_{cc}) | $\leq 1260 \text{ nm}$ | |
| Macro Bending Loss | 10 cycles \varnothing 15mm at 1550 | $\leq 0.03 \text{ dB}$ |
| | 10 cycles \varnothing 15mm at 1625 | $\leq 0.10 \text{ dB}$ |
| | 1 cycle \varnothing 10mm at 1550 | $\leq 0.10 \text{ dB}$ |
| | 1 cycle \varnothing 10mm at 1625 | $\leq 0.20 \text{ dB}$ |
| | 1 cycle \varnothing 7.5mm at 1550 | $\leq 0.50 \text{ dB}$ |
| | 1 cycle \varnothing 7.5mm at 1625 | $\leq 1.0 \text{ dB}$ |
| Cladding Diameter | $125 \pm 1 \mu\text{m}$ | |
| Cladding Non-Circularity | $\leq 1.0\%$ | |
| Core-Cladding Concentricity error | $\leq 0.6 \mu\text{m}$ | |
| Proof Test | $\geq 0.69 \text{ GPa}$ (100kpsi) | |
| Dynamic Fatigue | ≥ 20 | |

| Fiber Optic Cable Parameters | | |
|--|--|-------------------------|
| Fiber Type ** | G.657A2 | |
| Fiber Count | 288 | |
| Module Count | 24 | |
| Average Outer Sheath Thickness (mm) | 2.1 | |
| Approximate Cable Diameter (mm) | 14.5 | |
| Approximate Cable Weight (kg/km) | 148 | |
| Tensile Strength (Short Term) - Fiber Strain $\leq 0.33\%$ | 3200 N | For 60 m span*** / Duct |
| Tensile Strength (Long Term) - Fiber Strain $\leq 0.1\%$ | 1000 N | For 60 m span*** / Duct |
| Crush (Short Term) | 2000 N/10 cm | |
| Impact | 5J, R=300mm, 3 impacts | |
| Torsion | 40N, 20 cycles, $\pm 90^\circ$ | |
| Water Penetration | 3m sample, 1m height, 24h | |
| Minimum Bending Radius (Installing) | 25 x D | |
| Minimum Bending Radius (Operating) | 15 x D | |
| Temperature (Operation) | $-30^\circ\text{C} \sim +70^\circ\text{C}$ | |
| Temperature (Transportation and Storage) | $-40^\circ\text{C} \sim +70^\circ\text{C}$ | |
| Packing | Wooden drum with protection | |
| Delivery Lengths | To be confirmed, $\pm 5\%$ tolerance | |

| | |
|---------|---|
| Marking | <OPTIVINE> + <MICROMODULE> + <fiber count and type> + <DUCT AND AERIAL> + <manufacturing date> + <length marking> |
|---------|---|

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

| Module Color Identification**** | | | | | | | | | | | | |
|---------------------------------|-----|------|-------|--------|--------|-------|--------|------|-------|-------------|------|------|
| No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Color | Red | Blue | Green | Yellow | Violet | White | Orange | Grey | Brown | Light Green | Aqua | Pink |

* Drawing it's for indicative purpose only.

** Other fiber types can be used upon request.

*** A span of 60 m can be reached under NESC medium conditions (wind speed 17.7m/s, ice thickness 6.5mm).

**** If more than 12 tubes are used, the color code will be repeated again containing black rings

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