



**Product:** [GRAJF20](#)

Universal OFC MLT: LSZH + ARAMID + LSZH with 12 Tubes of Ø1.9mm 120f SM OS2 G.657.A2.

## Product Description

Universal (Indoor/Outdoor) dry core optical fiber Multi Loose Tube cable with Low Smoke Zero Halogen inner jacket, aramid yarns as strength member and Low Smoke Zero Halogen outer jacket. Existing out of 12 tubes with a diameter of 1.9mm with 120 fibers (10t x 12f) SM OS2 G.657.A2.

## Technical Specifications

### Product Overview

|                        |  |
|------------------------|--|
| Construction Type:     | Multi Loose Tube   |
| Environmental Space:   | Indoor/Outdoor   |
| Suitable Applications: | For outdoor and indoor use in structured (data) wiring systems such as industrial backbone, campus backbone, building backbone (riser) and/or horizontal cabling. For outdoor and indoor use in networks for industrial, telecom, cable TV and/or broadcast. Easy to install in ducts, tunnels and/or tubes. |

### Construction

#### Fiber Cable Construction

| Fiber Type                | Fiber Grade acc. ITU-T   | Fiber Count | Subunit Color  |
|---------------------------|--|-------------|--|
| OS2                       | G.657A2  | 120         | TIA coding (Gxxxxx.T): Blue, Orange, Green, Brown, Gray, White, Red, Black, Yellow, Violet |
| Fiber Color Coding:       | TIA coding (Gxxxxx.T): Blue, Orange, Green, Brown, Gray, White, Red, Black, Yellow, Violet, Pink, Aqua |             |  |
| Central Strength Member:  | GRP  |             |  |
| Cable Core Water Tight:   | Yes  |             |  |
| Cable Core Waterblocking: | Waterblocking Aramid Yarns + Tape  |             |  |
| Bulk Cable Weight:        | 240 kg/km  |             |  |

#### SubUnit Specifications

|                              |            |
|------------------------------|------------|
| Number of Active Subunits:   | 10         |
| Number of Subunit Positions: | 12         |
| Fibers Per Subunit:          | 12         |
| Subunit Diameter:            | 1.9 mm     |
| Subunit Waterblocking:       | Gel Filled |

#### Jacket Specifications

|                    |               |
|--------------------|---------------|
| Number of Jackets: | Double Jacket |
| Type of Armor:     | Non-Armored   |

#### Inner Jacket

|           |   |
|-----------|---|
| Material: | LSZH - Low Smoke Zero Halogen (Flame Retardant) |
|-----------|---|

#### Outer Jacket Specifications

##### Outer Jacket

| Material  | Nominal Diameter | Ripcord |
|---|------------------|---------|
| LSZH - Low Smoke Zero Halogen (Flame Retardant) | 15.1 mm          | Yes     |

|              |  |
|--------------|--|
| Table Notes: | Standard color: Orange. Available colors: Orange, Yellow, Turquoise, Erika Violet, Red, Blue, Green, Brown, Violet, Pink, Grey, White, Black, Lime Green |
|--------------|--|

#### Optical Characteristics

|                              |            |
|------------------------------|------------|
| Max. Attenuation at 1310 nm: | 0.40 dB/km |
| Max. Attenuation at 1550 nm: | 0.30 dB/km |
| Max. Attenuation at 1625 nm: | 0.30 dB/km |

## Mechanical Characteristics

### Mechanical Tests

| Description   | Tested Standard    | Requirement/Value             | According to Family Specification |
|---|--------------------|-------------------------------|-----------------------------------|
| Cable Min. Bend Radius Installation (Short Term)      | IEC 60794-1-21-E6  | 302 mm                        | IEC 60794-3-10                    |
| Cable Min. Bend Radius Operation (Long Term)          | IEC 60794-1-21-E11 | 226.5 mm                      | IEC 60794-3-10                    |
| Cable Max. Tensile Strength Installation (Short Term) | IEC 60794-1-21-E1  | 6000 N (1349 lbf)             | IEC 60794-3-10                    |
| Cable Max. Tensile Strength Operation (Long Term)     | IEC 60794-1-21-E1  | 2000 N (450 lbf)              | IEC 60794-3-10                    |
| Cable Max. Crush Resistance Installation (Short Term) | IEC 60794-1-21-E3  | 15 kN/m                       | IEC 60794-3-10                    |
| Cable Max. Crush Resistance Operation (Long Term)     | IEC 60794-1-21-E3  | 7.5 kN/m                      | IEC 60794-3-10                    |
| Cable Impact Resistance                               | IEC 60794-1-21-E4  | 10 J, 300 mm Radius, 3 Cycles | IEC 60794-3-10                    |
| Cable Torsion Resistance                              | IEC 60794-1-21-E7  | 180°, 2 m, 10 cycles          | IEC 60794-3-10                    |

### Temperature Range

|                                 |                  |
|---------------------------------|------------------|
| Operating Temperature Range:    | -30 °C to +70 °C |
| Installation Temperature Range: | -5 °C to +40 °C  |
| Storage Temperature Range:      | -30 °C to +70 °C |

### Standards

|  |                            |
|--|----------------------------|
| UL Rating/Flame Test:                                      | Non-UL Rated               |
| Reaction to Fire - Bundle Flame Test:                      | IEC 60332-3-24             |
| IEC 60754-1 - Halogen Amount:                              | Zero                       |
| IEC 60754-2 - Halogen Acid Gas Amount - Max. Conductivity: | 10 µS/mm                   |
| IEC 60754-2 - Halogen Acid Gas Amount - Min. pH:           | 4.3                        |
| REACH:   | Compliant                  |
| ISO/IEC Compliance:  | IEC 60794, ISO/IEC 11801-1 |
| EU Directive 2011/65/EU (RoHS 2):                          | Compliant                  |
| UV/ Sunlight Protection:                                   | Yes                        |

### History

|                      |   |
|----------------------|---|
| Update and Revision: | Revision Number: 0.77 Revision Date: 09-17-2024 |
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