



# Product: <u>GRRHF24</u> ☑

Universal OFC MLT: LSZH + GLASS YARNS + LSZH with 6 Tubes of Ø1.9mm 24f 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, glass yarns as strength member and Low Smoke Zero Halogen outer jacket. Product feature: This cable has rodent protection by glass yarns. Existing out of 6 tubes with a diameter of 1.9mm with 24 fibers (2t 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 Type  | Fiber Grade acc. ITU-T | Fiber Count | Subunit Color                       |  |  |
|---|------------------------|-------------|-------------------------------------|--|--|
| OS2   | G.657A2                | 24          | TIA coding (Gxxxxx.T): Blue, Orange |  |  |
| Fiber Color Coding: TIA coding (Gxxxxxx.T): Blue, Orange, Green, Brown, G |                        |             |                                     |  |  |
| Central Stre  | ngth Member:           | GRP         | GRP                                 |  |  |
| Cable Core  | Water Tight: Yes       |             |                                     |  |  |
| Cable Core Waterblocking: Waterblocking Glass Yarns + Tape                |                        |             |                                     |  |  |
| Bulk Cable  | leight: 175 kg/km      |             |                                     |  |  |

## **SubUnit Specifications**

| Number of Active Subunits:   | 2          |
|------------------------------|------------|
| Number of Subunit Positions: | 6          |
| Fibers Per Subunit:          | 12         |
| Subunit Diameter:            | 1.9 mm     |
| Subunit Waterblocking:       | Gel Filled |

### **Jacket Specifications**

| Number of Jackets: | Double Jacket  |
|--------------------|----------------|
| Type of Armor:     | All Dielectric |
|                    |                |

# 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 | e Retardant) | 12.1 mm                | Yes         |
| ĺ | Table Notes:                         | Standard co  | lor: Orange. Available | e colors: C |

#### **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  | 242 mm                        | IEC 60794-3-10                    |
| Cable Min. Bend Radius Operation (Long Term)          | IEC 60794-1-21-E11 | 242 mm                        | IEC 60794-3-10                    |
| Cable Max. Tensile Strength Installation (Short Term) | IEC 60794-1-21-E1  | 4950 N (1113 lbf)             | IEC 60794-3-10                    |
| Cable Max. Tensile Strength Operation (Long Term)     | IEC 60794-1-21-E1  | 1650 N (371 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 +50 °C  |
| Storage Temperature Range:      | -30 °C to +70 °C |

#### **Standards**

| UL Rating/Flame Test:   | Non-UL Rated               |  |
|---|----------------------------|--|
| OL Rating/Hame rest.  |                            |  |
| Reaction to Fire - Bundle Flame Test:                         | IEC 60332-3-24             |  |
| IEC 60754-1 - Halogen Amount:                                 | Zero                       |  |
| IEC 60754-2 - Halogen Acid Gas<br>Amount - Max. Conductivity: | 10 µS/mm                   |  |
| IEC 60754-2 - Halogen Acid Gas<br>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: 0.79 Revision Date: 09-17-2024

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