



**Product:** [GRAHE48](#)

Universal OFC MLT: LSZH + ARAMID + LSZH with 6 Tubes of Ø1.9mm 48f MM OM4.

### 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 6 tubes with a diameter of 1.9mm with 48 fibers (4t x 12f) MM OM4.

### 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 Count	Subunit Color
OM4	48	TIA coding (Gxxxxx.T): Blue, Orange, Green, Brown
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:	155 kg/km	

#### SubUnit Specifications

Number of Active Subunits:	4
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:	Non-Armored

#### Inner Jacket

Material:	LSZH - Low Smoke Zero Halogen (Flame Retardant)
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#### Outer Jacket Specifications

##### Outer Jacket

Material	Nominal Diameter	Ripcord
LSZH - Low Smoke Zero Halogen (Flame Retardant)	12.1 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 1300 nm:	0.9 dB/km
Max. Attenuation at 850 nm:	2.9 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	3900 N (877 lbf)	IEC 60794-3-10
Cable Max. Tensile Strength Operation (Long Term)	IEC 60794-1-21-E1	1300 N (292 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
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: 0.82 Revision Date: 09-17-2024
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