



## Features and Benefits

Molex Fibre Optic distribution or mini-breakout cable is suitable for both indoor and outdoor applications. The cable is suitable for installation in ducts and trays. The cable features a UV stabilised, water and moisture resistant LSOH sheath and is therefore suitable for shorter outdoor runs. This cabled fibre is a graded-index multimode fibre with extended reach, optimised for 10 Gb/s transmission speeds. It has a 50 µm core diameter and a 125 µm cladding diameter. The fibre is designed for use at 850 nm, but can also be used at 1300 nm.

## Commercial Standards

EN 187000, IEC 60794-2, IEC 60794-20, ISO 11801, EN 50173.

## Fibre Core Standards

IEC 60793-2-10: type A1a.3 (in development),  
EN 60793-2-10: type A1a.3 (in development),  
TIA/EIA-492 AAAD,  
EN 50173-1:2007. Amendment AB category OM4,  
ISO/IEC 11801:2002. Amendment 2 category OM4,  
IEEE 802.3 - 2002. incl. amendment 802.3ae - 2002.

## Fire Propagation Tests

IEC 60332-1-2 Single vertical wire test  
IEC 60332-3-24 = IEC 332-3C Vertically-mounted bunched wires and cables  
IEC 60754-1 No halogens  
IEC 60754-2 No acid matters  
IEC 61034-2 No dense smoke

## Technical Information

### Mechanical Characteristics

Strength member: FRP rod with LSOH covering  
Fibre: 36 - 96  
Fibre unit: 6 tightly buffered fibres 900µm ±50µm  
1: Red  
2: Green  
3: Blue  
4: Yellow  
5: White  
6: Grey  
Aramid yarns.

Thin LSOH sheath in the same colours as the outer sheath, marked with unit number 1, 2, 3 .. Unit diameter app. 3.5 mm

Stranding: 5 – 16 fibre units in one or two layers

### Sheath colours:

Cable with OS2 fibres: Yellow  
Cable with OM2 fibres: Grey  
Cable with OM3 and OM4 fibres: Aqua  
Sheath: LSHF-FR fire retardant, UV stabilised, EN 50290-2-27

## Physical Properties

	E1	Permanent Tensile Strength	Short Term Tensile Strength (some days)	Maximum installation load (a few hours)
36 fibres		1200 N	2400 N	3600 N
42 fibres		1300 N	2600 N	3900 N
48 fibres		1400 N	2800 N	4200 N
54 fibres		1500 N	3000 N	4500 N
60 fibres		1600 N	3200 N	4800 N
66 fibres		1700 N	3400 N	5100 N
72 fibres		1800 N	3600 N	5400 N
78 – 96 fibres		2200 N	4400 N	6600 N
Impact	E4	20 J		
Crush (compressive strength)	E3	3000 N/100mm		
Torsion	E7	5 cycles ± 1 turn		
Temperature range	F1	Operation and Installation	-40°C to 70°C	
		Storage	-40°C to 70°C	

## MOLEX PREMISE NETWORKS

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## Electrical/Optical Characteristics

### OM4

#### Attenuation

Maximum at 850 nm:  $\leq 3.0$  dB/km  
 Maximum at 1300 nm:  $\leq 1.0$  dB/km  
 Attenuation limit according to IEC 60793-2-10, 850 nm:  $\leq 2.5$  dB/km  
 Attenuation limit according to IEC 60793-2-10, 1300 nm:  $\leq 0.8$  dB/km  
 Inhomogeneity of OTDR trace for any two 1000 metre fibre lengths:  
 Max. 0.1 dB/km

#### Bandwidth

Overfilled (OFL) modal bandwidth at 850 nm:  $\geq 3500$  MHz • km  
 Overfilled (OFL) modal bandwidth at 1300 nm;  $\geq 500$  MHz • km  
 Effective Modal Bandwidth (EMB) at 850 nm (Assured by means of differential mode delay (DMD) measurement as specified in IEC 60793-1-49):  $\geq 4700$  MHz • km

#### Group index of refraction

Group index of refraction at 850 nm: 1.482

Group index of refraction at 1300 nm: 1.477

### OM3

#### Attenuation

Maximum at 850 nm:  $\leq 3.0$  dB/km  
 Maximum at 1300 nm:  $\leq 1.0$  dB/km  
 Maximum value of fibre (for reference only) at 850 nm:  $\leq 2.5$  dB/km  
 Maximum value of fibre (for reference only) at 1300 nm:  $\leq 0.7$  dB/km

#### Bandwidth

OFL value at 850 nm:  $\geq 1500$  MHz • km  
 OFL value at 1300 nm:  $\geq 500$  MHz • km

#### Group index of refraction

Group index of refraction at 850 nm: 1.482

Group index of refraction at 1300 nm: 1.477

### OM2

#### Attenuation

Maximum at 850 nm:  $\leq 2.7$  dB/km  
 Maximum at 1300 nm:  $\leq 0.8$  dB/km  
 Typical value at 850 nm:  $\leq 2.5$  dB/km  
 Typical value at 1300 nm:  $\leq 0.6$  dB/km

#### Bandwidth

850 nm: 600 MHz • km  
 1300 nm: 1200 MHz • km

#### Group Index of Refraction

Group index of refraction at 850 nm: 1.482

Group index of refraction at 1300 nm: 1.477

### OS2

#### Attenuation

1310 nm – 1625 nm:  $\leq 0.39$  dB/km  
 1550 nm:  $\leq 0.25$  dB/km

## Other Properties

Attribute	Measurement method	Units	Limits
Core diameter	IEC/EN 60793-1-20	$\mu\text{m}$	$50 \pm 2.5$
Cladding diameter	IEC/EN 60793-1-20	$\mu\text{m}$	$125.0 \pm 1.0$
Cladding non-circularity	IEC/EN 60793-1-20	%	$\leq 0.7$
Core non-circularity	IEC/EN 60793-1-20	%	$\leq 5$
Core-cladding concentricity error	IEC/EN 60793-1-20	$\mu\text{m}$	$\leq 1.5$
Primary coating diameter – uncoloured	IEC/EN 60793-1-21	$\mu\text{m}$	$242 \pm 7$
Primary coating diameter – coloured	IEC/EN 60793-1-21	$\mu\text{m}$	$250 \pm 15$
Primary coating non-circularity	IEC/EN 60793-1-21	%	$\leq 5$
Primary coating-cladding concentricity error	IEC/EN 60793-1-21	$\mu\text{m}$	$\leq 10$
Proof stress level	IEC/EN 60793-1-30	GPa	$\geq 0.7$ ( $\approx 1\%$ )
Typical average strip force	IEC/EN 60793-1-32	N	1.7
Strip force (peak)	IEC/EN 60793-1-32	N	$1.3 \leq F_{\text{peak.strip}} \leq 8.9$
Numerical aperture:	IEC/EN 60793-1-43	N	$0.200 \pm 0.015$

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<b>Order No.</b>	<b>SAP No.</b>	<b>Description</b>
CFR-00599	Consult Molex	Fibre Optic Cable Internal/External Tight Buffered LS0H OM2 36 core
CFR-00600	Consult Molex	Fibre Optic Cable Internal/External Tight Buffered LS0H OM2 48 core
CFR-00601	Consult Molex	Fibre Optic Cable Internal/External Tight Buffered LS0H OM2 72 core
CFR-00602	Consult Molex	Fibre Optic Cable Internal/External Tight Buffered LS0H OM2 96 core
CFR-00603	Consult Molex	Fibre Optic Cable Internal/External Tight Buffered LS0H OM3 36 core
CFR-00604	Consult Molex	Fibre Optic Cable Internal/External Tight Buffered LS0H OM3 48 core
CFR-00605	Consult Molex	Fibre Optic Cable Internal/External Tight Buffered LS0H OM3 72 core
CFR-00606	Consult Molex	Fibre Optic Cable Internal/External Tight Buffered LS0H OM3 96 core
CFR-00607	Consult Molex	Fibre Optic Cable Internal/External Tight Buffered LS0H OM4 36 core
CFR-00608	Consult Molex	Fibre Optic Cable Internal/External Tight Buffered LS0H OM4 48 core
CFR-00609	Consult Molex	Fibre Optic Cable Internal/External Tight Buffered LS0H OM4 72 core
CFR-00610	Consult Molex	Fibre Optic Cable Internal/External Tight Buffered LS0H OM4 96 core
CFR-00611	Consult Molex	Fibre Optic Cable Internal/External Tight Buffered LS0H OS2 36 core
CFR-00612	Consult Molex	Fibre Optic Cable Internal/External Tight Buffered LS0H OS2 48 core
CFR-00613	Consult Molex	Fibre Optic Cable Internal/External Tight Buffered LS0H OS2 72 core
CFR-00614	Consult Molex	Fibre Optic Cable Internal/External Tight Buffered LS0H OS2 96 core

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