



## Mini Breakout Distribution Cable Multi-core (12-144 Fibres)

12 to 144 fibre mini breakout multi-core distribution cable, consists of 4 to 8 individually coloured, 12 fibre stranded sub units around an FRP central strength member with polyester wrapping tape, all enclosed in aramid yarn strength members and an outer Low Smoke Zero Halogen (LSZH) jacket with a ripcord.

---

### Features

- Small outer diameter
- Aramid yarn strength members
- Available in various fibre types: OS<sub>1</sub>/OS<sub>2</sub>, OM<sub>1</sub>, OM<sub>2</sub>, OM<sub>3</sub>, OM<sub>4</sub> & OM<sub>5</sub>
- Colour coded fibres
- Lightweight and compact
- LSZH jacket
- RoHS compliant

---

### Applications

- Internal applications (horizontal or riser installations)

## Specifications

DESCRIPTION		12-CORE	24-CORE	24~48-CORE	72-CORE	96-CORE	144-CORE
Outer Diameter	mm	3.0 ±0.15	4.2 ±0.3	9.0 ±0.3	11.2 ±0.5	13.5 ±0.5	17.5 ±0.5
Weight	kg/km	7.8	31	78	126	178	285
Max. Tensile (Short-term)	N	150	300	500	1000	1000	1000
Max. Tensile (Long-term)	N	80	160	180	300	300	300
Min. Bend Radius (Short-term)	mm	20D					
Min. Bend Radius (Long-term)	mm	10D					
Strength Member	FRP & Aramid						
Outer Jacket	LSZH						
Operating Temperature	°C	-20~+70	-20~+70	-20~+70	-20~+70	-20~+70	-20~+70
Storage Temperature	°C	-20~+70	-20~+70	-20~+70	-20~+70	-20~+70	-20~+70
Installation Temperature	°C	0~+50	0~+50	0~+50	0~+50	0~+50	0~+50
Crush Resistance (Short-term)	N/100mm	500	500	1000	1000	1000	1000
Crush Resistance (Long-term)	N/100mm	100	100	300	300	300	300

## OM1 Fibre Characteristics

ITEMS		DESCRIPTION
Attenuation	@850nm	3.2 dB/km (Maximum)
	@1300nm	1.0 dB/km (Maximum)
Overfilled Modal Bandwidth	@850nm	200 MHz.km
	@1300nm	600 MHz.km
Core Diameter	IEC/EN 60793-1-20	62.5±2.5µm
Core Non-circularity	IEC/EN 60793-1-20	≤5%
Cladding Diameter	IEC/EN 60793-1-20	125.0±1.0µm
Cladding Non-circularity	IEC/EN 60793-1-20	≤5%
Core – Cladding Concentricity Error	IEC/EN 60793-1-20	≤1.5µm
Primary Coating Diameter – Uncoloured	IEC/EN 60793-1-21	242±7µm
Primary Coating Diameter – Coloured	IEC/EN 60793-1-21	250±15µm
Primary Coating Non-circularity	IEC/EN 60793-1-21	≤5%
Primary Coating – Cladding Concentricity Error	IEC/EN 60793-1-21	≤10µm
Group Index of Refraction	IEC/EN 60793-1-22	
	@850nm	1.496
	@1300nm	1.491
Proof Stress Level	EC/EN 60793-1-30	≥0.7 (≈1% strain) Gpa
Typical Average Stripe Force	EC/EN 60793-1-32	1.7N
Stripe Force (peak)	EC/EN 60793-1-32	1.3≤F <sub>peak.strip</sub> ≤8.9N
Numerical Aperture	EC/EN 60793-1-43	0.275±0.015

## OM2 Fibre Characteristics

ITEMS		DESCRIPTION
Attenuation	@850nm	2.7 dB/km (Maximum)
	@1300nm	0.8 dB/km (Maximum)
Overfilled Modal Bandwidth	@850nm	500 MHz.km
	@1300nm	500 MHz.km
Core Diameter	IEC/EN 60793-1-20	50±1.0um
Core Non-circularity	IEC/EN 60793-1-20	≤5%
Cladding Diameter	IEC/EN 60793-1-20	125.0±1.0um
Cladding Non-circularity	IEC/EN 60793-1-20	≤0.7%
Core – Cladding Concentricity Error	IEC/EN 60793-1-20	≤1.0um
Primary Coating Diameter – Uncoloured	IEC/EN 60793-1-21	242±7um
Primary Coating Diameter – Coloured	IEC/EN 60793-1-21	250±15um
Primary Coating Non-circularity	IEC/EN 60793-1-21	≤5%
Primary Coating – Cladding Concentricity Error	IEC/EN 60793-1-21	≤6um
Group Index of Refraction	IEC/EN 60793-1-22	
	@850nm	1.482
	@1300nm	1.477
Proof Stress Level	EC/EN 60793-1-30	≥0.7 (≈1% strain) Gpa
Typical Average Stripe Force	EC/EN 60793-1-32	1.7N
Stripe Force (peak)	EC/EN 60793-1-32	1.3≤F <sub>peak.strips</sub> ≤8.9N
Numerical Aperture	EC/EN 60793-1-43	0.200±0.015
Fibre Bending Loss R-7.5mm	@850nm	≤0.2dB
	@1300nm	≤0.5dB
Fibre Bending Loss R-15mm	@850nm	≤0.1dB
	@1300nm	≤0.3dB

## OM3 Fibre Characteristics

ITEMS		DESCRIPTION
Attenuation	@850nm	3.0 dB/km (Maximum)
	@1300nm	1.0 dB/km (Maximum)
Overfilled Modal Bandwidth	@850nm	≥1500 MHz.km
Effective Modal Bandwidth	@1300nm	≥500 MHz.km
	@850nm	≥2000 MHz.km
Core Diameter	IEC/EN 60793-1-20	50±2.0um
Core Non-circularity	IEC/EN 60793-1-20	≤5%
Cladding Diameter	IEC/EN 60793-1-20	125.0±1.0um
Cladding Non-circularity	IEC/EN 60793-1-20	≤0.7%
Core – Cladding Concentricity Error	IEC/EN 60793-1-20	≤1.0um
Primary Coating Diameter – Uncoloured	IEC/EN 60793-1-21	242±7um
Primary Coating Diameter – Coloured	IEC/EN 60793-1-21	250±15um
Primary Coating Non-circularity	IEC/EN 60793-1-21	≤5%
Primary Coating – Cladding Concentricity Error	IEC/EN 60793-1-21	≤6um
Group Index of Refraction	IEC/EN 60793-1-22	
	@850nm	1.482
	@1300nm	1.477
Proof Stress Level	EC/EN 60793-1-30	≥0.7 (=1% strain) Gpa
Typical Average Stripe Force	EC/EN 60793-1-32	1.7N
Stripe Force (peak)	EC/EN 60793-1-32	1.3≤F <sub>peak.strip</sub> ≤8.9N
Numerical Aperture	EC/EN 60793-1-43	0.200±0.015
Fibre Bending Loss R-7.5mm	@850nm	≤0.2dB
Fibre Bending Loss R-15mm	@1300nm	≤0.5dB
	@850nm	≤0.1dB
	@1300nm	≤0.3dB

## OM4 Fibre Characteristics

ITEMS		DESCRIPTION
Attenuation	@850nm	3.0 dB/km (Maximum)
	@1300nm	1.0 dB/km (Maximum)
Overfilled Modal Bandwidth	@850nm	≥3500 MHz.km
Effective Modal Bandwidth	@1300nm	≥500 MHz.km
	@850nm	≥4700 MHz.km
Core Diameter	IEC/EN 60793-1-20	50±2.0um
Core Non-circularity	IEC/EN 60793-1-20	≤5%
Cladding Diameter	IEC/EN 60793-1-20	125.0±1.0um
Cladding Non-circularity	IEC/EN 60793-1-20	≤0.7%
Core – Cladding Concentricity Error	IEC/EN 60793-1-20	≤1.5um
Primary Coating Diameter – Uncoloured	IEC/EN 60793-1-21	242±7um
Primary Coating Diameter – Coloured	IEC/EN 60793-1-21	250±15um
Primary Coating Non-circularity	IEC/EN 60793-1-21	≤5%
Primary Coating – Cladding Concentricity Error	IEC/EN 60793-1-21	≤6um
Group Index of Refraction	IEC/EN 60793-1-22	
	@850nm	1.482
	@1300nm	1.477
Proof Stress Level	EC/EN 60793-1-30	≥0.7 (≈1% strain) Gpa
Typical Average Stripe Force	EC/EN 60793-1-32	1.7N
Stripe Force (peak)	EC/EN 60793-1-32	1.3≤F <sub>peak.strip</sub> ≤8.9N
Numerical Aperture	EC/EN 60793-1-43	0.200±0.015
Fibre Bending Loss R-7.5mm	@850nm	≤0.2dB
Fibre Bending Loss R-15mm	@1300nm	≤0.5dB
	@850nm	≤0.1dB
	@1300nm	≤0.3dB

## OM5 Fibre Characteristics

ITEMS		DESCRIPTION
Attenuation	@850nm	≤ 2.4 dB/km (Maximum)
	@953nm	≤ 1.7 dB/km (Maximum)
	@1300nm	≤ 0.6 dB/km (Maximum)
Overfilled Modal Bandwidth	@850nm	≥ 3500 MHz.km
	@953nm	≥ 1850 MHz.km
	@1300nm	≥ 500 MHz.km
Effective Modal Bandwidth	@850nm	≥ 4700 MHz.km
	@953nm	≥ 2470 MHz.km
Core Diameter	IEC/EN 60793-1-20	50±2.5µm
Core Non-circularity	IEC/EN 60793-1-20	≤5%
Cladding Diameter	IEC/EN 60793-1-20	125.0±0.8µm
Cladding Non-circularity	IEC/EN 60793-1-20	≤0.6%
Core – Cladding Concentricity Error	IEC/EN 60793-1-20	≤1.0µm
Primary Coating Diameter – Uncoloured	IEC/EN 60793-1-21	242±7µm
Primary Coating Diameter – Coloured	IEC/EN 60793-1-21	250±15µm
Primary Coating Non-circularity	IEC/EN 60793-1-21	≤5%
Primary Coating – Cladding Concentricity Error	IEC/EN 60793-1-21	≤6µm
Group Index of Refraction	IEC/EN 60793-1-22	
	@850nm	1.482
	@1300nm	1.477
Proof Stress Level	EC/EN 60793-1-30	≥0.7 (≈1% strain) Gpa
Typical Average Stripe Force	EC/EN 60793-1-32	1.5N
Stripe Force (peak)	EC/EN 60793-1-32	1.3≤F <sub>peak.strip</sub> ≤8.9N
Numerical Aperture	EC/EN 60793-1-43	0.200±0.015
Fibre Bending Loss R-7.5mm	@850nm	≤0.2dB
Fibre Bending Loss R-15mm	@1300nm	≤0.5dB
	@850nm	≤0.1dB
	@1300nm	≤0.3dB

## OS2 Fibre Characteristics

ITEMS		DESCRIPTION
Attenuation	@1310nm	0.39 dB/km (Maximum)
	@1550nm	0.25 dB/km (Maximum)
Reflex Index	@1310nm	1.467
	@1550nm	1.468
Cladding Diameter	IEC/EN 60793-1-20	125.0±0.7µm
Cladding Non-circularity	IEC/EN 60793-1-20	≤0.7%
Core – Cladding Concentricity Error	IEC/EN 60793-1-20	≤0.5µm
Primary Coating Diameter	IEC/EN 60793-1-21	242±7µm
Primary Coating Non-circularity	IEC/EN 60793-1-21	≤5%
Primary Coating – Cladding Concentricity Error	IEC/EN 60793-1-21	≤12µm
Chromatic Dispersion Coefficient	IEC/EN 60793-1-42	
	In 1285-1330nm	≤   3.0   ps/km·nm
	@1550nm	≤   18.0   ps/km·nm
	@1625nm	≤   22.0   ps/km·nm
Zero Dispersion Wavelength, $\lambda_0$		1300-1322nm
Zero Dispersion Slope		≤0.090 ps/(km·nm <sup>2</sup> )
Cut-off Wavelength	EC/EN 60793-1-44	≤1260λccnm
Mode Field Diameter	EC/EN 60793-1-45	
	@1310nm	9.0±0.4µm
	@1550nm	10.1±0.5µm
Macro Bending Loss (100 turns)	EC/EN 60793-1-47	
	50mm mandrel	≤0.05dB@1310nm &1550nm
	60mm mandrel	≤0.05dB@1625nm
PMD Coefficient, Max. Uncabled	EC/EN 60793-1-48	≤0.5ps/√km
PMDQ Link Design Value	EC/EN 60794-3	≤0.2ps/√km
Proof Stress Level	EC/EN 60793-1-30	≥0.7 (=1% strain) Gpa
Fibre Curl Radius	EC/EN 60793-1-34	>4m
Stripe Force (peak)	EC/EN 60793-1-32	1.2≤Fpeak.strip≤8.9N
Dynamic Fatigue Resistance Aged and Unaged	EC/EN 60793-1-33	≥20
Static Fatigue Resistance	EC/EN 60793-1-33	≥23



### Ordering Information

	Fibre Type		Jacket Type		Fibre Count	
OFC-MMB	9	G.652D	1	LSZH	12	12
	A1	G.657A1			...	...
	1	OM1			144	144
	2	OM2				
	3	OM3				
	4	OM4				
	5	OM5				

### Example order code

OFC-MMB - 9 1 - 96

Mini Breakout Multi Core Distribution Cable Singlemode LSZH 96 Fibres

### Technical Drawing

