



X 25 Year System Warranty

X Internal External Grade

X Sequentially Metre Marked

X Bend insensitive construction

### Features

- 25 Year System Warranty
- Sequentially Metre Marked
- 50/125 Multimode Fibre
- 500 MHz.km Bandwidth
- Cut to length service
- Internal External Grade
- Bend insensitive construction
- LSOH Black Sheath
- Duct Grade

### Product Overview

Excel loose tube optical fibre cables have been designed specifically for internal and external applications. The improved bend insensitivity make these compact, lightweight cables extremely flexible and are quick and easy to install. The cables are constructed around a gel filled (non-dripping and silicon free) tube containing up to 24 colour coded 250µm primary coated 50/125µm fibres. This tube is covered with swellable (for the longitudinal watertightness) yarns as strength members and for the standard rodent protection. The outer jacket is Flame Retardant, Low Smoke Zero Halogen.



### Performance Overview

Excel OM2 multimode cables are made of a high grade bend-insensitive graded-index fibre. Transmission speeds of 10/Mb/s, 100Mb/s, 1 Gb/s and 10 Gb/s are supported and the fibre is compatible with all types of OM2 optical fibre. It has a 50 µm core with 125 µm cladding diameter.

### Cores Colours

1. Red	2. Green	3. Blue	4. Yellow
5. White	6. Grey	7. Brown	8. Violet
9. Turquoise	10. Black	11. Orange	12. Pink
13. Yellow with mark every 70 mm	14. White with mark every 70 mm	15. Grey with mark every 70 mm	16. Turquoise with mark every 70 mm
17. Orange with mark every 70 mm	18. Pink with mark every 70 mm	19. Yellow with mark every 35 mm	20. White with mark every 35 mm
21. Grey with mark every 35 mm	22. Turquoise with mark every 35 mm	23. Orange with mark every 35 mm	24. Pink with mark every 35 mm

## Physical Properties

Property	Test method	Value
Permanent tensile strength	IEC 60794-1 E1	500 N (no attenuation change, fibre strain less than ¼ of proof test level)
Short term tensile strength	IEC 60794-1 E1	750 N (fibre strain less than ½ of proof test level)
Maximum installation tensile strength	IEC 60794-1 E1	1000 N (fibre strain less than ½ of proof test level)
Impact	IEC 60794-1 E4	15 Nm (no attenuation change, no broken cable elements)
Crush (compressive strength)	IEC 60794-1 E3	1500 N
Torsion	IEC 60794-1 E7	5 cycles ± 1 turn
Kink	IEC 60794-1 E10	The cables do not form a kink when a loop is drawn together to a diameter of 100 mm
Temperature range	IEC 60794-1 F1	Operation -30°C to +60°C Installation -30°C to +60°C Storage -40°C to +60°C
Water penetration	IEC 60794-1 F5B	No water on free end

Property	4-16 Cores	24 Core
Heat of combustion	630 MJ/km 0.18 KWh/m	800 MJ/km 0.22 KWh/m
Nominal diameter	6.0 mm	6.5 mm
Nominal cable weight	40 kg/km	45 kg/km
Minimum bend radius	Unloaded (IEC 60794-1 E11) Loaded	60 mm 100 mm

Property		
Loose Tube	Ø 2.8 mm Jelly filled loose tube (≤ 16 fibres) Ø 3.5 mm Jelly filled loose tube (24 fibre)	
Strength member	Waterblocked E-Glass rovings	
Jacket	1.1 mm black, Halogen free, flame resistant thermoplastic sheathing compound acc. to EN 50290-2-27, UV stabilised	
Fire rating	IEC 60332-1-2 IEC 60754-1 IEC 60754-2 IEC 61034-2	Single vertical wire test No halogens No acid matters No dense smoke

## Performance Properties

Cable attenuation	IEC 60793-1-40
Maximum attenuation value of cable at 850 nm	≤ 2.7 dB/km
Maximum attenuation value of cable at 1300 nm	≤ 0.8 dB/km
Typical value at 850 nm	≤ 2.5 dB/km
Typical value at 1300 nm	≤ 0.6 dB/km
Inhomogeneity of OTDR trace for any two 1000 metre fibre lengths	Max. 0.1 dB/km
Fibre bending loss R=7.5 mm 850/1300 nm	≤ 0.2 dB / ≤ 0.5 dB
Fibre bending loss R=15 mm 850/1300 nm	≤ 0.1 dB / ≤ 0.3 dB

Bandwidth	IEC 60793-1-41
Overfilled (OFL) modal bandwidth at 850 nm	≥ 500 MHz.km
Overfilled (OFL) modal bandwidth at 1300 nm	≥ 500 MHz.km

Standards and Norms	
IEC 60793-2-10: type A1a.1	EN 50173-1 category OM2.
ITU G.651.1	ISO / IEC 11801 category OM2
IEEE 802.3	TIA / EIA-492 AAAB
EN 60793-2-10: type A1a.1	ANSI / TIA / EIA-568-C

Property	Standard	Value
Core diameter	IEC / EN 60793-1-20	50.0 ± 1.0 µm
Core non-circularity	IEC / EN 60793-1-20	≤ 5 %
Cladding diameter	IEC / EN 60793-1-20	125.0 ± 1.0 µm
Cladding non-circularity	IEC / EN 60793-1-20	≤ 0.7 %
Core - cladding concentricity error	IEC / EN 60793-1-20	≤ 1.0 µm
Primary coating diameter - uncoloured	IEC / EN 60793-1-21	242 ± 5 µm
Primary coating diameter - coloured	IEC / EN 60793-1-21	250 ± 15 µm
Primary coating non-circularity	IEC / EN 60793-1-21	≤ 5 %
Primary coating - cladding concentricity error	IEC / EN 60793-1-21	≤ 6 µm
Group index of refraction:	IEC / EN 60793-1-22	
	at 850 nm	1.482
	at 1300 nm	1.477
Proof stress level	IEC / EN 60793-1-30	≥ 0.7 (≈ 1 % strain) Gpa
Typical average stripforce	IEC / EN 60793-1-32	1.7 N
Strip force (peak)	IEC / EN 60793-1-32	1.3 ≤ F <sub>peak.strip</sub> ≤ 8.9 N
Numerical aperture	IEC / EN 60793-1-43	0.200 ± 0.015

### Typical Applications

- 100BASE-FX                      ■ 1000BASE-SX                      ■ 1000BASE-LX                      ■ FDDI
- 155 Mbps ATM                      ■ 622 Mbps ATM                      ■ 531 Mbps Fibre Channel                      ■ 1062 Mbps Fibre Channel

### Part Number Information

Part No.	Description
200-049	Internal/External Grade Loose Tube Fibre Cable 4 Core 50/125 OM2
200-065	Internal/External Grade Loose Tube Fibre Cable 6 Core 50/125 OM2
200-069	Internal/External Grade Loose Tube Fibre Cable 8 Core 50/125 OM2
200-089	Internal/External Grade Loose Tube Fibre Cable 12 Core 50/125 OM2
200-090	Internal/External Grade Loose Tube Fibre Cable 16 Core 50/125 OM2
200-092	Internal/External Grade Loose Tube Fibre Cable 24 Core 50/125 OM2

### System Warranty

The Excel System Warranty provides a 25-year product and applications assurance of compliance with the industry performance standard appropriate to the class of cabling installed. The warranty may be applied for by an accredited Excel Partner who has designed, supplied and installed the said system.



Excel is a world-class premium performing end-to-end infrastructure solution - designed, manufactured, supported and delivered - without compromise.

Contact us at [sales@excel-networking.com](mailto:sales@excel-networking.com)

