Excel Enbeam OM4 Multimode Fibre Optic Cable Loose Tube 12 Core 50/125 B2ca Black

Part Code: 294-012

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Main Features

- Duct grade rodent resistant
- Sequentially metre marked
- Euroclass: B2ca-s1a,d0,a1
- Cut to length service
- 25 year system warranty

Product Overview

Excel OM4 50/125 µm loose tube optical fibre cables have been designed specifically for internal and external applications. These compact, lightweight cables are extremely flexible and are quick and easy to install.

The cables are constructed with a single dry loose tube containing up to 24 colour coded 250 µm primary coated fibres. This tube is covered with an E-glass strength member.

The print legend on the cable now includes information regarding the DOP number, test and classification of the cable for traceability.

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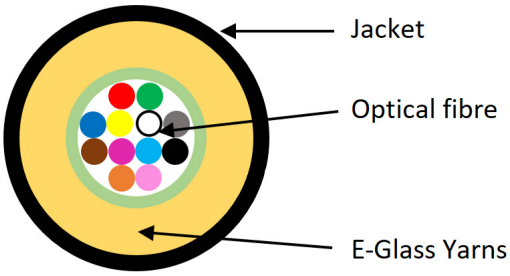
Product Specifications

Feature	Values
Number of Cores	**12**
Type of tube	**Loose tube**
Number of fibres per tube	**12**
Fibre type	**Multi mode 50/125**
Category	**OM4**
Rodent resistant	**yes**
Outer sheath material	**Copolymer, thermoplastic (LS0H)**
Outer sheath colour	**Black**
Flame retardant according to IEC 60332-1-2	**yes**
Low smoke (acc. IEC 61034-2)	**yes**
Reaction-to-fire class according to EN 13501-6	**B2ca**
Smoke development class according to EN 13501-6	**s1a**
Euro class flaming droplets/particles according to EN 13501-6	**d0**
Euro class acidity according to EN 13501-6	**a1**
Outer diameter approx.	**6 mm**

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Cross-section diagram



Colour coding (as per TIA-598-C)



For fibre core counts above 12 the colour sequence is repeated with the addition of a mark every 70mm for cores 13-24 and two marks for 25-36 and so on.

Cable specifications

Features		Values
Loose tube	**Material**	**LSZH**
	Diameter	**2.8 ± 0.1 mm (2-12 cores), 3.5 ± 0.20 mm (16-24 cores)**
	Thickness	**0.35 ± 0.05 mm**
Strength member	**Material**	**E-glass Yarns**
Sheath	**Material**	**LSZH**
	Thickness	**Typical 1.1 mm**

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Cable diameter	**Diameter (± 0.3 mm)**	**6.0 ± 0.20 mm (2-16 cores), 6.5 ± 0.20 mm (18-24 cores)**
Cable weight		**Approx. 40kg/km (2-16 cores), 45kg/km (18-24 cores)**
Tensile strength	**Installation**	**660 N**
	Working	**200 N**
Crush resistance	**Installation**	**1000 N**
	Working	**300 N**
Torsion		**Change of attenuation ≤ 0.10dB (SM fiber)**
		Change of attenuation ≤ 0.30dB (MM fiber)
Temperature range	**Installation**	**-30°C to +60°C**
	Working	**-30°C to +60°C**
	Storage	**-40°C to +60°C**
Bending radius	**Short term**	**20 x Diameter**
	Long term	**10 x Diameter**
Water penetration		**No water on free end**

Fibre specifications

Features		Values
Attenuation	**@850 nm**	**3.5dB/km (maximum)**
	@1300 nm	**1.5dB/km (maximum)**
	For any 1000 metre	**Max. 0.1dB/km**
Overfilled modal bandwidth	**@850 nm**	**≥3500 MHz/km**

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	@1300 nm	**≥500 MHz/km**
Effective modal bandwidth	**@850 nm**	**≥4700 MHz/km**
Core diameter		**50±2.5 µm**
Core non-circularity		**≤5%**
Cladding diameter		**125.0±1.0 µm**
Cladding non-circularity		**≤1%**
Core - cladding concentricity error		**≤1.5 µm**
Primary coating diameter - uncolored		**242±7 µm**
Primary coating diameter - colored		**250±15 µm**
Primary coating non-circularity		**≤5%**
Primary coating - cladding concentricity error		**≤12 µm**
Group index of refraction	**@850 nm**	**1.482**
	@1300 nm	**1.477**
Proof stress level		**≥0.7(≈1% strain) Gpa**
Typical average strip force		**1.7 N**
Strip force (peak)		**1.3 ≤ Fpeak.strip ≤8.9 N**
Numerical aperture		**0.200 ± 0.015**
Fiber bending loss R-7.5 mm	**@850 nm**	**≤0.2dB**
	@1300 nm	**≤0.5dB**
Fiber bending loss R-15 mm	**@850 nm**	**≤0.1dB**
	@1300 nm	**≤0.3dB**

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Standards

Applicable standard	Subject
IEC 60794-2-20:2013	Optical fibre cables - Part 2-20: Indoor cables - Family specification for multi-fibre optical cables
IEC 60332-1-2:2004	Tests on electric and optical fibre cables under fire conditions. Test for vertical flame propagation for a single insulated wire or cable. Procedure for 1 kW pre-mixed flame
IEC 60754-2:2011	Test on gases evolved during combustion of materials from cables - Part 2: Determination of acidity (by pH measurement) and conductivity
IEC 61034-2:2005+A1:2013	Measurement of smoke density of cables burning under defined conditions – Part 2: Test procedure and requirements
IEC 60793-1-1:2022	Optical fibres - Part 1-1: Measurement methods and test procedures - General and guidance
IEC 60793-2-10:2017	Sectional specification for A1 multimode fibres
IEC 60793-1-20:2014	Optical fibres - Part 1-20: Measurement methods and test procedures - Fibre geometry
IEC 60793-1-21:2001	Optical fibres - Part 1-21: Measurement methods and test procedures - Coating geometry
IEC 60793-1-22:2001	Optical fibres - Part 1-22: Measurement methods and test procedures - Length measurement
IEC 60793-1-30:2010	Optical fibres - Part 1-30: Measurement methods and test procedures - Fibre proof test
IEC 60793-1-41:2010	Optical fibres - Part 1-41: Measurement methods and test procedures – Bandwidth
ITU G.651.1	Characteristics of a 50/125 µm multimode graded index optical fibre cable for the optical access network
EN 50173-1:2018	Information technology. Generic cabling systems - General requirements

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EN 50575: 2014 + A1: 2016	Power, control and communication cables — Cables for general applications in construction works subject to reaction to fire requirements
EN 50399:2011+A1:2016	Common test methods for cables under fire conditions. Heat release and smoke production measurement on cables during flame spread test. Test apparatus, procedures, results
ISO/IEC 11801-1:2017	Information technology - Generic cabling for customer premises: Part 1 General Requirements
ANSI/TIA 568-3.D	Optical Fiber Cabling and Components Standard
ANSI/TIA/EIA 598-D	Optical Fibre Cable Colour Coding
Directive 2011/65/EU (RoHS II)	Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment — compliant. Applies within EU member states).
Directive (EU) 2015/863 (RoHS III)	Amending Directive 2011/65/EU to add four phthalates (DEHP, BBP, DBP, DIBP) to Annex II — compliant.
Directive 2008/98/EC (WFD)	Waste Framework Directive — compliant. Implemented in the UK through the Waste (England and Wales) Regulations 2011 (SI 2011 No. 988).
ECHA SCIP Database	Compliant; product does not contain SVHCs (Substances of Very High Concern) as defined under REACH Article 33(1). Submission obligations met under EU REACH and UK REACH.
Regulation (EU) 2019/1021 (POPs)	EU Regulation on Persistent Organic Pollutants — compliant. For Great Britain, compliance is aligned with the Persistent Organic Pollutants (Amendment) (EU Exit) Regulations 2020 (SI 2020 No. 1355).
UK SI 2012 No. 3032	The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (UK RoHS) — compliant for Great Britain. Retained EU law, as amended by the Product Safety and Metrology (Amendment etc.) (EU Exit) Regulations 2019.

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Part Code Table

Part Code	Description
294-004	**Excel Enbeam OM4 Multimode Fibre Optic Cable Loose Tube 4 Core 50/125 B2ca Black**
294-008	**Excel Enbeam OM4 Multimode Fibre Optic Cable Loose Tube 8 Core 50/125 B2ca Black**
294-012	**Excel Enbeam OM4 Multimode Fibre Optic Cable Loose Tube 12 Core 50/125 B2ca Black**
294-016	**Excel Enbeam OM4 Multimode Fibre Optic Cable Loose Tube 16 Core 50/125 B2ca Black**
294-024	**Excel Enbeam OM4 Multimode Fibre Optic Cable Loose Tube 24 Core 50/125 B2ca Black**

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