

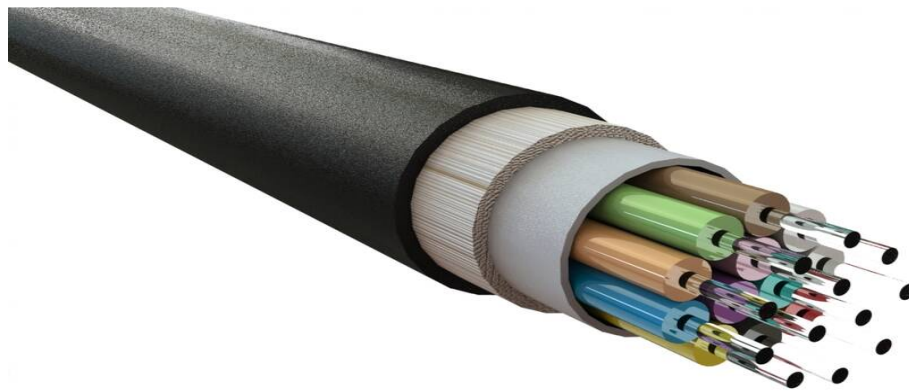
# Excel Enbeam OS2 Fibre Optic Cable Loose Tube 12 Core LSZH Dca Black

excel  
without compromise.

Part Code: 205-302

sales@excel-networking.com  
excel-networking.com

CIBSE TM65 Embodied Carbon: 0.258 kg CO2e



## Main Features

- / Water resistant & UV resistant
- / Duct grade - rodent resistant
- / Sequentially metre marked
- / Cut to length service
- / Euroclass Dca-s2-d1-a1
- / 25 Year system warranty

## Product Overview

Enbeam OS2 singlemode fibre optic cable loose tube 12 core 9/125 LSZH Dca black, part of a huge range of OS2 fibre optic cables fully stocked at Mayflex. The singlemode fibre is G.652.D compliant low water peak grade and offers OS2 performance and OS1 backwards compatibility.

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

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## Product Specifications

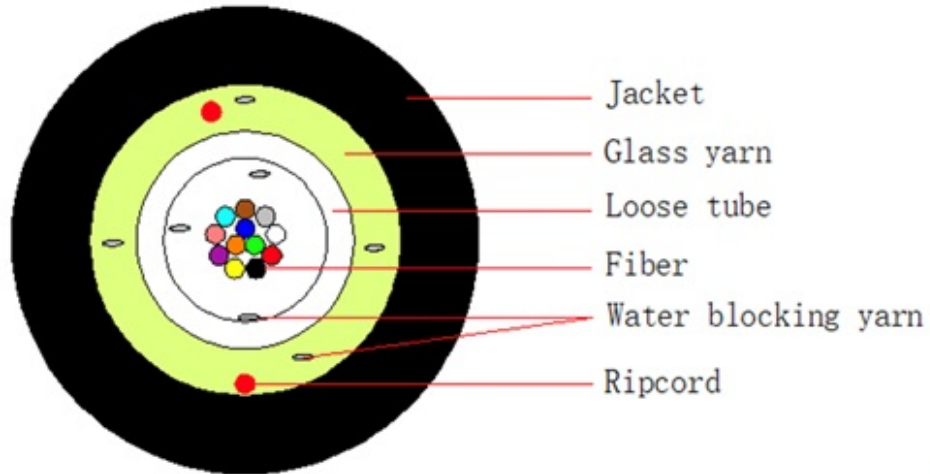
Feature	Values
Number of Cores	12
Type of tube	Loose tube
Number of fibres per tube	12
Fibre type	Single mode 9/125
Category	OS2
Rodent resistant	yes
Outer sheath material	Copolymer, thermoplastic (LSOH)
Outer sheath colour	Black
Flame retardant according to IEC 60332-1-2	yes
Low smoke (acc. IEC 61034-2)	yes
Reaction-to-fire class according to EN 13501-6	Dca
Smoke development class according to EN 13501-6	s2
Euro class flaming droplets/particles according to EN 13501-6	d1
Euro class acidity according to EN 13501-6	a1
Outer diameter approx.	6 mm

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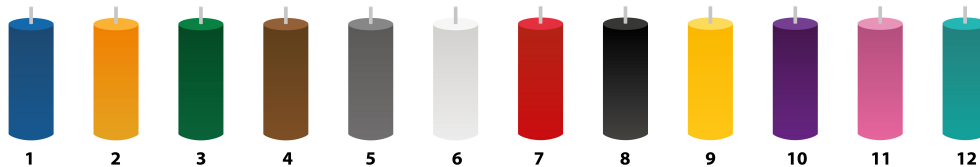
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## Cross-section diagram



## 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	<b>Material</b> PBT
	<b>Diameter</b> 2.8±0.1mm(2-12 cores), 3.5±0.20mm(16-24 cores)

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	<b>Thickness</b>	<b>0.35±0.05mm</b>
Strength Member	<b>Material</b>	<b>E-glass Yarns</b>
Sheath	<b>Material</b>	<b>LSZH</b>
	<b>Thickness</b>	<b>Typical 1.1mm</b>
Cable Diameter	<b>Diameter (±0.3mm)</b>	<b>6.0±0.20mm(2-16 cores), 6.5±0.20mm(18-24 cores)</b>
Cable Weight		<b>Approx. 40kg/km(2-16 cores), 45kg/km(18-24 cores)</b>
Tensile Strength	<b>Installation</b>	<b>1000N</b>
	<b>Working</b>	<b>300N</b>
Cable Impact		<b>1J</b>
Crush Resistance	<b>Installation</b>	<b>1000N</b>
	<b>Working</b>	<b>300N</b>
Torsion		<b>Change of Attenuation ≤ 0.10dB (SM fiber)</b>
		<b>Change of Attenuation ≤ 0.30dB (MM fiber)</b>
Temperature Range	<b>Installation</b>	<b>-30°C to +60°C</b>
	<b>Working</b>	<b>-30°C to +60°C</b>
	<b>Storage</b>	<b>-40°C to +60°C</b>
Bending Radius	<b>Short term</b>	<b>20 x Diameter</b>
	<b>Long term</b>	<b>10 x Diameter</b>
Water Penetration		<b>No water on free end</b>

## Fibre specifications

Features		Values
Attenuation	@1310nm	0.39 dB/km (Maximum)
	@1550nm	0.25 dB/km (Maximum)
	For any 1000 metre	Max. 0.1 dB/km
Reflex Index	@1310nm	1.467
	@1550nm	1.468
Cladding Diameter		125.0 ± 0.7 µm
Cladding Non-circularity		≤1%
Core – Cladding Concentricity Error		≤0.6 µm
Primary Coating Diameter		242 ± 7 µm
Primary Coating Non-circularity		≤5%
Primary Coating – Cladding Concentricity Error		≤12 µm
Chromatic Dispersion Coefficient	In 1285-1330nm	≤3.4 ps/km·nm
	@1550nm	≤18.0 ps/km·nm
	@1625nm	≤22.0 ps/km·nm
Zero Dispersion Wavelength, λ <sub>0</sub>		1300-1324 nm
Zero Dispersion Slope		≤0.092 ps/(km·nm <sup>2</sup> )
Cut-off Wavelength, λ <sub>cc</sub>		≤1260 nm
Mode Field Diameter	@1310nm	9.0±0.5 µm
	@1550nm	10.4±0.5 µm
Macro Bending Loss(100 turns)	25mm mandrel	≤0.05 dB @1310 nm & 1550 nm
	30mm mandrel	≤0.05 dB @1625 nm

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PMD Coefficient, Max. Uncabled	$\leq 0.5 \text{ ps}/\sqrt{\text{km}}$
PMDQ Link Design Value	$\leq 0.2 \text{ ps}/\sqrt{\text{km}}$
Proof Stress Level	$\geq 0.69 \text{ Gpa}$ ( $\approx 1\% \text{ strain}$ )
Fibre Curl Radius	$>4 \text{ m}$
Stripe Force(peak)	$1.3 \leq F_{\text{peak.strip}} \leq 8.9 \text{ N}$
Dynamic Fatigue Resistance Aged and Unaged	$\geq 20$
Static Fatigue Resistance	$\geq 23$

## 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 60793-1-20:2014	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

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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
ITU G.652.D	Characteristics of a single-mode optical fibre and cable
EN 50173-1:2011	Information technology. Generic cabling systems - General requirements
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).

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UKSI 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.

## Part Code Table

Part Code	Description
205-300	Excel Enbeam OS2 Fibre Optic Cable Loose Tube 4 Core LSZH Dca Black
205-301	Excel Enbeam OS2 Fibre Optic Cable Loose Tube 8 Core LSZH Dca Black
205-302	Excel Enbeam OS2 Fibre Optic Cable Loose Tube 12 Core LSZH Dca Black
205-303	Excel Enbeam OS2 Fibre Optic Cable Loose Tube 16 Core LSZH Dca Black
205-304	Excel Enbeam OS2 Fibre Optic Cable Loose Tube 24 Core LSZH Dca Black