



☒ Water resistant & UV resistant

☒ Duct grade & rodent resistant

☒ Sequentially metre marked

☒ Cut to length service

☒ Euroclass B2ca-s1a,d0,a1

☒ 25 year system warranty

☒ CIBSE TM65 Embodied Carbon: 0.186 kg CO<sub>2</sub>e

## Product Overview

Enbeam OS2 singlemode fibre optic cable loose tube 12 Core 9/125 LSZH B2ca 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.

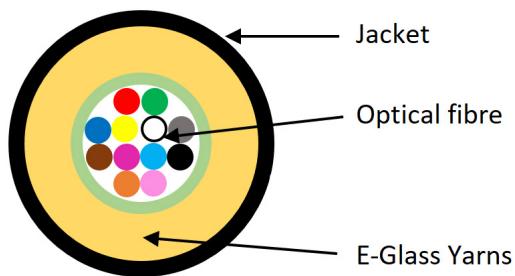
The cables are constructed around a tube containing up to 24 colour coded 250 µm primary coated fibres. This tube is covered with an E-glass strength member.

## 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                | 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 |

### 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  |
| 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                                    | @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, λ0                 |                    | 1300-1324 nm                    |
| Zero Dispersion Slope                          |                    | ≤0.092 ps/(km·nm <sup>2</sup> ) |
| Cut-off Wavelength, λcc                        |                    | ≤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               |
| PMD Coefficient, Max. Uncabled                 |                    | ≤0.5 ps/km                      |
| PMDQ Link Design Value                         |                    | ≤0.2 ps/km                      |
| Proof Stress Level                             |                    | ≥ 0.69 Gpa (≈1% strain)         |
| Fibre Curl Radius                              |                    | >4 m                            |
| Stripe Force(peak)                             |                    | 1.3 ≤ Fpeak.strip ≤ 8.9 N       |
| Dynamic Fatigue Resistance Aged and Unaged     |                    | ≥20                             |
| Static Fatigue Resistance                      |                    | ≥23                             |

## Standards

| Applicable standard                        | Subject   |
|--|---|
| 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 60754-2:2014+A1:2020                   | Test on gases evolved during combustion of materials from cables - Part 2: Determination of acidity (by pH measurement) and conductivity  |
| IEC 61034-2:2005+A2:2020                   | 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  |
| 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 50173-1:2018                            | 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   |
| RoHS-II/-III (2011/65/EU & 2015/863): 2023 | Our products, demonstrate full adherence to the regulatory stipulations of the EU Directive 2011/65/EU (RoHS-II) and its corresponding delegated directive 2015/863 (RoHS-III). |
| WFD: 2023                                  | Compliant to Waste Framework Directive  |

|                        |   |
|------------------------|---|
| SCIP: 2023             | Compliant - Does Not Contain Substances of Concern In articles as such or in complex objects (Products) |
| POPs (EU) No 2019/1021 | EU Regulation for the restriction of Persistent Organic Pollutants.                                     |

### Part Number Table

| Part Number | Description   |
|-------------|---|
| 295-300     | Excel Enbeam OS2 Singlemode Fibre Optic Cable Loose Tube 4 Core 9/125 B2ca Black  |
| 295-301     | Excel Enbeam OS2 Singlemode Fibre Optic Cable Loose Tube 8 Core 9/125 B2ca Black  |
| 295-302     | Excel Enbeam OS2 Singlemode Fibre Optic Cable Loose Tube 12 Core 9/125 B2ca Black |
| 295-303     | Excel Enbeam OS2 Singlemode Fibre Optic Cable Loose Tube 16 Core 9/125 B2ca Black |
| 295-304     | Excel Enbeam OS2 Singlemode Fibre Optic Cable Loose Tube 24 Core 9/125 B2ca Black |

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