

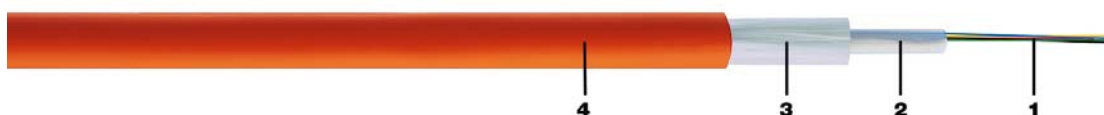
## Application

- For **outdoor and indoor** use in structured (data) wiring systems such as **campus backbone, building backbone (riser)** and/or horizontal cabling.
- For **outdoor and indoor** use in networks for telecom, cable TV and/or broadcast.
- **Easy to install** in ducts, tunnels, trenches and/or tubes (by means of compressed air or pulling wire). Suitable for **direct burial** (crush  $\leq 150$  N/cm).

## Key features

- A simple **all dielectric** cable construction (and consequently **more cost-effective up to 24 fibres** than multi-tube cables) with standard rodent protection.
- These cables are **halogen-free** (= FRNC and LSNH) and therefore suitable for both outdoor and indoor use. Consequently **splicing can be avoided** and the installation gets **more cost-effective**.
- **Predicted lifetime > 30 years**.

## Construction & dimensions



### Cable specifications (construction in accordance with IEC 60794)

1. Primary coated optical fibres:  $\text{Ø } 250 \pm 15 \mu\text{m}$ .
2. Central tube, jelly filled (**non-dripping and silicon-free**) with **up to 24 fibres**.  
Individually colour coded optical fibres:  
1 – 12: red - natural - yellow - blue - green - violet - brown - black - orange - turquoise - pink and white  
13 – 24: red - natural - yellow - blue - green - violet - brown - grey - orange - turquoise - pink and white with **black rings**.
3. Swellable (for the longitudinal watertightness) yarns as strength members and for the standard rodent protection.
4. **Orange** halogen-free (FRNC/LSNH) outer jacket.  
Identification: BELDEN OFC – "cable type" – "number x type of fibre" + date-, meter- and P/N-marking.

### Mechanical data

|                        | standard rodent protection |
|------------------------|----------------------------|
| No. of fibres          | max. 24                    |
| Ø Central tube (mm)    | 4.2                        |
| Ø nom./max. (mm)       | 8.7 / 9.0                  |
| Weight (kg/km)         | 72                         |
| Energy of flame (kJ/m) | 1370                       |

## Ordering information

### Belden European Part Numbers

| Fibre-type/-count          | 4  | 6       | 8       | 12      | 16      | 24      |
|----------------------------|--|---------|---------|---------|---------|---------|
| 62.5/125-OM1               | GUSB104  | GUSB106 | GUSB108 | GUSB112 | GUSB116 | GUSB124 |
| 50/125-OM2                 | GUSB204  | GUSB206 | GUSB208 | GUSB212 | GUSB216 | GUSB224 |
| 50/125-OM2e                | GUSB404  | GUSB406 | GUSB408 | GUSB412 | GUSB816 | GUSB824 |
| 50/125-OM3                 | GUSB304  | GUSB306 | GUSB308 | GUSB312 | GUSB316 | GUSB324 |
| 9/125-OS1                  | GUSB904  | GUSB906 | GUSB908 | GUSB912 | GUSB916 | GUSB924 |
| Std. reel (non-returnable) | plywood reel $\text{Ø } 1000 * 530$ mm, weight 18 kg |         |         |         |         |         |
| Std. delivery length       | 2100 $\pm$ 100 m                                     |         |         |         |         |         |

## Optical characteristics

### Characteristics (cabled) Multi-Mode - Graded-Index optical fibres according to IEC 60793

| Fibre-type             | Size<br>( $\mu\text{m}$ ) | Wavelength<br>(nm) | Attenuation<br>average/max.<br>(dB/km) | Bandwidth<br>(MHz $\cdot$ km) | Ethernet<br>Performance (m) |       | Refractive<br>Index |
|------------------------|---------------------------|--------------------|--|-------------------------------|-----------------------------|-------|---------------------|
|                        |                           |                    |  |                               | 1GbE                        | 10Gbe |                     |
| <b>62.5/125</b><br>OM1 | 62.5 $\pm$ 2.5            | 850                | 3.0 / 3.2                              | $\geq$ 200                    | 275                         | 33    | 1.495               |
|                        | 125 $\pm$ 1               | 1300               | 0.6 / 0.8                              | $\geq$ 600                    | 550                         | n.a.  | 1.490               |
| <b>50/125</b><br>OM2   | 50 $\pm$ 2.5              | 850                | 2.5 / 2.7                              | $\geq$ 600                    | 550                         | 82    | 1.481               |
|                        | 125 $\pm$ 1               | 1300               | 0.5 / 0.8                              | $\geq$ 1200                   | 550                         | n.a.  | 1.476               |
| <b>50/125</b><br>OM2e  | 50 $\pm$ 2.5              | 850                | 2.5 / 2.7                              | $\geq$ 600                    | 750                         | 110   | 1.481               |
|                        | 125 $\pm$ 1               | 1300               | 0.5 / 0.8                              | $\geq$ 1200                   | 2000                        | na    | 1.476               |
| <b>50/125</b><br>OM3   | 50 $\pm$ 2.5              | 850                | 2.5 / 2.7                              | $\geq$ 1500                   | 900                         | 300   | 1.482               |
|                        | 125 $\pm$ 1               | 1300               | 0.5 / 0.8                              | $\geq$ 500                    | 550                         | n.a.  | 1.477               |

### Characteristics (cabled) Single-Mode - Matched-Cladded optical fibres according to ITU-G.652B

| Fibre-type          | Size<br>( $\mu\text{m}$ ) | Wavelength<br>(nm) | Attenuation<br>average/max.<br>(dB/km) | Dispersion<br>(ps/(nm $\cdot$ km)) | PMD<br>(ps/ $\sqrt{\text{km}}$ ) | Refractive<br>Index |
|---------------------|---------------------------|--------------------|--|------------------------------------|----------------------------------|---------------------|
| <b>9/125</b><br>OS1 | 9.2 $\pm$ 0.4             | 1310               | 0.33 / 0.38                            | $\leq$ 3.5                         |                                  | 1.467               |
|                     | 125 $\pm$ 1               | 1550               | 0.20 / 0.25                            | $\leq$ 18                          | $\leq$ 0.2                       | 1.467               |

A test report (attenuation) is supplied with each delivery.

## Mechanical, physical and/or environmental

**Temperature range** according to IEC 60794-1-2-F1  
Transport/storage - 30 to + 70 °C

Installation - 5 to + 50 °C

Operation - 30 to + 70 °C

**Pulling tension** according to IEC 60794-1-2-E1

Cable with standard RP  $\leq$  1400 N

**Bending radii for fibres and tubes**

Installation/operation > 25 mm

**Halogen-free** according to IEC 60754-2 (HD 602)

Corrosivity pH  $\geq$  3.5 -  $\mu\text{S}/\text{cm} \leq$  100

**Watertightness** according to IEC 60794-1-2-F5

**Crush resistance** according to IEC 60794-1-2-E3

Cable  $\leq$  15000 N/m

**Bending radii cable**

Static according to IEC 60794-1-2-E11 - 10 x  $\emptyset$

Dynamic according to IEC 60794-1-2-E6 - 15 x  $\emptyset$

**Flame retardancy** according to IEC 60332-3C

## Guide to installation and handling

- When laying and installing optical fibre cables **it is vitally important not to exceed the specified values** set for pulling tension, bending radii and temperature.  
The installation methods have to be in accordance with the common standards.
- To ease insertion into tubes by means of compressed air or pulling wire, certified lubricants (e.g. paraffin) may be used. The use of soap or similar substances as lubricants is strictly prohibited.
- If a cable needs to be fastened, constrictions  $\geq$  0.3 mm must be prevented.
- The jelly filling inside the tubes can be removed using a tissue soaked in turpentine.
- It is advisable to cap the cable-ends during storage.

## Options

- Cables with a PE jacket for outdoor use.
- Non-standard cable constructions**, colours, details and/or additional information regarding specifications are available on request.