

Application

- For **outdoor** use in structured (data) wiring systems (**campus backbone**) and/or 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 ≤ 150 N/cm).

Key features

- **Installation friendly dry interstices** between the loose tubes.
- **All dielectric** cables with standard rodent protection.
- **Predicted lifetime > 30 years**.

Construction & dimensions



Cable specifications (construction in accordance with IEC 60794)

1. Dielectric central element of glass reinforced plastic (GRP), also **as protection against kinks**, surrounded by swelling tape.
2. Jelly filled (**non-dripping and silicon-free**) loose tubes with primary coated optical fibres ($\varnothing 250 \pm 15 \mu\text{m}$). Individually colour coded optical fibres: red – natural – yellow – blue – green – violet – brown – black – orange – turquoise – pink and white.
The loose tubes are stranded around the central element, if necessary with blind elements (black tubes without fibres). Colour coding of the loose tubes: 1. red – 2. white – rest yellow (9/125) green (50/125) or blue (62.5/125).
3. Swellable (for the longitudinal watertightness) yarns as strength members and for the standard rodent protection.
4. **Black** UV-resistant PE outer jacket.
Identification: BELDEN OFC – "cable type" – "number x type of fibre" + date-, meter- and P/N-marking.

Mechanical data

| Cable-type- | 48dcPE | | | |
|------------------------------------|------------|-----------|-----------|-----------|
| No. of fibres | 12 | 24 | 36 | 48 |
| Cable core | 6*2 | 6*4 | 6*6 | 6*8 |
| \varnothing Central element (mm) | 2,1 | | | |
| \varnothing Loose tube (mm) | 2,1 | | | |
| \varnothing nom./max. (mm) | 9,8 / 10,1 | | | |
| Weight (kg/km) | 75 | | | |
| Energy of flame (kJ/m) | 2300 | | | |

| Cable-type- | 72dcPE | | | | | 96dcPE | 144dcPE |
|------------------------------------|-------------|-----------|-----------|-----------|-----------|-------------|-------------|
| No. of fibres | 24 | 36 | 48 | 60 | 72 | 96 | 144 |
| Cable core | 2*12 | 3*12 | 4*12 | 5*12 | 6*12 | 8*12 | 12*12 |
| \varnothing Central element (mm) | 2,6 | | | | | 2,6 / 4,3 | 3,5 / 7,6 |
| \varnothing Loose tube (mm) | 2,6 | | | | | 2,6 | 2,6 |
| \varnothing nom./max. (mm) | 11,0 / 11,3 | | | | | 12,7 / 13,0 | 16,0 / 16,3 |
| Weight (kg/km) | 101 | | | | | 147 | 210 |
| Energy of flame (kJ/m) | 2930 | | | | | 3554 | 4827 |

Optical characteristics

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

| | Size (μm) | Wavelength (nm) | Attenuation average/max. (dB/km) | Bandwidth (MHz \cdot km) | Ethernet Performance (m) | | Refractive Index |
|-------------------------------|---------------------------|--------------------|--|-------------------------------|-----------------------------|-------|---------------------|
| | | | | | 1GbE | 10Gbe | |
| 62.5/125 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 |
| 50/125 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 |
| 50/125 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 |
| 50/125 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 (μm) | Wavelength (nm) | Attenuation average/max. (dB/km) | Dispersion (ps/(nm \cdot km)) | PMD (ps/ $\sqrt{\text{km}}$) | Refractive Index |
|----------------------------|---------------------------|--------------------|--|------------------------------------|----------------------------------|---------------------|
| 9/125 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 |

Watertightness according to IEC 60794-1-2-F5

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

| | |
|----------------------|---------------|
| Type-48 and Type-72 | \leq 3000 N |
| Type-96 and Type-144 | \leq 4000 N |

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

| | |
|----------------------|------------------|
| Loose tube | \leq 4000 N/m |
| Type-48 and Type-72 | \leq 15000 N/m |
| Type-96 and Type-144 | \leq 20000 N/m |

Bending radii for fibres and tubes

| | |
|------------------------|-----------|
| Installation/operation | $>$ 25 mm |
|------------------------|-----------|

Bending radii cable

| | |
|---------------------------------------|---------------------------|
| Static according to IEC 60794-1-2-E11 | $- 10 \times \varnothing$ |
| Dynamic according to IEC 60794-1-2-E6 | $- 15 \times \varnothing$ |

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 1 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

- Universal (halogen-free) cables and Outdoor cables with improved rodent protection.
- **Non-standard cable constructions like different types of fibres in one cable**, colours, details and/or additional information regarding specifications are available on request.

Ordering information

Belden European Part Numbers

| Cable-type- | 48dcPE | | | |
|----------------------------|---|-----------|-----------|-----------|
| Fibre-type/-count | 12 | 24 | 36 | 48 |
| 62.5/125-OM1 | GOSC112 | GOSC124 | GOSC136 | GOSC148 |
| 50/125-OM2 | GOSC212 | GOSC224 | GOSC236 | GOSC248 |
| 50/125-OM2e | GOSC412 | GOSC424 | GOSC436 | GOSC448 |
| 50/125-OM3 | GOSC312 | GOSC324 | GOSC336 | GOSC348 |
| 9/125-OS1 | GOSC912 | GOSC924 | GOSC936 | GOSC948 |
| Std. reel (non-returnable) | wooden reel Ø 1250 * 688 mm, weight 81 kg | | | |
| Std. delivery length | 4100 ± 100 m | | | |

| Cable-type- | 72dcPE | | | | |
|----------------------------|---|-----------|-----------|-----------|-----------|
| Fibre-type/-count | 24 | 36 | 48 | 60 | 72 |
| 62.5/125-OM1 | GOSD124 | GOSD136 | GOSD148 | GOSD160 | GOSD172 |
| 50/125-OM2 | GOSD224 | GOSD236 | GOSD248 | GOSD260 | GOSD272 |
| 50/125-OM2e | GOSD424 | GOSD436 | GOSD448 | GOSD460 | GOSD472 |
| 50/125-OM3 | GOSD324 | GOSD336 | GOSD348 | GOSD360 | GOSD372 |
| 9/125-OS1 | GOSD924 | GOSD936 | GOSD948 | GOSD960 | GOSD972 |
| Std. reel (non-returnable) | wooden reel Ø 1250 * 688 mm, weight 81 kg | | | | |
| Std. delivery length | 2100 ± 100 m | | | | |

| Cable-type- | 96dcPE | 144dcPE |
|----------------------------|---|----------------|
| Fibre-type/-count | 96 | 144 |
| 62.5/125-OM1 | GOSE196 | GOSF144 |
| 50/125-OM2 | GOSE296 | GOSF244 |
| 50/125-OM2e | GOSE496 | GOSF444 |
| 50/125-OM3 | GOSE396 | GOSF344 |
| 9/125-OS1 | GOSE996 | GOSF944 |
| Std. reel (non-returnable) | wooden reel Ø 1250 * 688 mm, weight 81 kg | |
| Std. delivery length | 2100 ± 100 m | |