

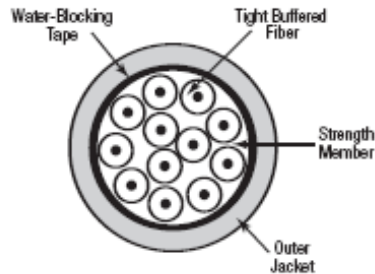
Application

- Structured (premises) wiring systems: **campus and/or building backbone (riser) and/or horizontal cabling.**
- Support all computer network applications such as **FDDI, Gigabit Ethernet and ATM.**
- **Easy to install** in ducts, tunnels and trenches. Not recommended for direct burial.

Key features

- These cables are **halogen-free** (= FRNC and LSNH) and watertight and therefore suitable for internal and external use. Consequently **splicing can be avoided** and the installation gets **more cost-effective.**
- These cables are **all dielectric** (metal-free).
- **Predicted lifetime > 30 years.**

Construction & dimensions



Cable specifications (construction in accordance with IEC 60794)

1. Swellable reinforced yarns as common strength members and for the longitudinal watertightness.
2. Primary coated optical fibres: $\text{Ø } 280 \pm 15 \mu\text{m}$.
3. Tight buffered fibres: $\text{Ø } 0.9 \pm 0.1 \text{ mm}$. Colour coding of the buffered fibres:
white – red – blue – yellow – green – violet – brown – black – orange – turquoise – pink – grey
of the fibres 1 – 12 the **secondary coating** is coloured
of the fibres 13 – 24 the **primary coating is coloured** and the secondary coating is transparent.
4. Swellable tape.
5. **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

| No. of fibres | 4 | 6 | 8 | 12 | 16 | 24 |
|--------------------------|-----|-----|-----|-----|-----|------|
| Ø nom. (mm) | 5.4 | 5.9 | 5.9 | 7.6 | 8.6 | 9.6 |
| Max. pulling tension (N) | 400 | 450 | 450 | 500 | 500 | 600 |
| Energy of flame (kJ/m) | 296 | 347 | 371 | 622 | 845 | 1082 |
| Weight (kg/km) | 26 | 30 | 32 | 45 | 53 | 65 |

Optical characteristics

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

| European Partnumber Coding, position 5 | Fibre-type | Mode-Field Diameter (µm) | Wave-length (nm) | Attenuation average/max. (dB/km) | Dispersion (ps/(nm•km)) | PMD (ps/√km) | Cable Cut-off Wavelength (nm) | Refr. Index |
|--|-------------------------|--------------------------|------------------|----------------------------------|-------------------------|--------------|-------------------------------|----------------|
| 8 | 9/125-OS1 ITU-G.652D | 9.2 ± 0.4 125 ± 0.7 | 1310 1550 | 0.35 / 0.5 0.21 / 0.3 | ≤ 3.5 ≤ 18 | ≤ 0.2 | ≤ 1260 | 1.467 1.467 |

Characteristics (cabled) Single-Mode (Matched-Cladded optical fibres according to ITU-G.655

| European Partnumber Coding, position 5 | Fibre-type | Mode Field Diameter (µm) | Wave-length (nm) | Attenuation average/max. (dB/km) | Dispersion range (ps/(nm•km)) | PMD (ps/√km) | Cable Cut-off Wavelength (nm) | Refr. Index |
|--|------------|--------------------------|------------------|----------------------------------|-------------------------------|--------------------|-------------------------------|-------------|
| 7 | 9/125 | 8.4 ± 0.6 125 ± 1 | 1550 | 0.25 / 0.28 | 3.5 – 8.5 | ≤ 0.1 ^A | ≤ 1260 | 1.470 |

Note A- Link design value

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

| European Partnumber Coding, position 5 | Fibre-type | Core/Cladding Diameter (µm) | Wave-length (nm) | Attenuation average/max (dB/km) | Bandwidth (MHz•km) | Ethernet Performance (m) | | Numerical Aperture (µm) | Refr. Index |
|--|-----------------|-----------------------------|------------------|---------------------------------|--------------------|--------------------------|-------|-------------------------|-------------|
| | | | | | | 1GbE | 10Gbe | | |
| 1 | 62.5/125 OM1 | 62.5 ± 2.5 125 ± 1 | 850 | 3.0 / 3.2 | ≥ 200 | 275 | 33 | 0.275 ± | 1.495 |
| | | | 1300 | 0.7 / 0.9 | ≥ 600 | 550 | n.a. | 0.015 | 1.490 |
| 5 | 50/125 OM2 | 50 ± 2.5 125 ± 1 | 850 | 2.6 / 2.8 | ≥ 500 | 600 | 82 | 0.20 ± | 1.481 |
| | | | 1300 | 0.6 / 0.9 | ≥ 500 | 600 | n.a. | 0.015 | 1.476 |
| 2 | 50/125 OM2 | 50 ± 2.5 125 ± 1 | 850 | 2.6 / 2.8 | ≥ 600 | 600 | 82 | 0.20 ± | 1.481 |
| | | | 1300 | 0.6 / 0.9 | ≥ 1200 | 600 | n.a. | 0.015 | 1.476 |
| 4 | 50/125 OM2e | 50 ± 2,5 125 ± 1 | 850 | 2.6 / 2,8 | ≥ 600 | 750 | 110 | 0.20 ± | 1,481 |
| | | | 1300 | 0,6 / 0,9 | ≥ 1200 | 2000 | na | 0.015 | 1,476 |
| 3 | 50/125 OM3 | 50 ± 2.5 125 ± 1 | 850 | 2.6 / 2.8 | ≥ 1500 | 900 | 300 | 0.20 ± | 1.482 |
| | | | 1300 | 0.6 / 0.9 | ≥ 500 | 550 | n.a. | 0.015 | 1.477 |
| 6 | 50/125 OM3+ | 50 ± 2.5 125 ± 1 | 850 | 2.6 / 2.8 | ≥ 6000 | 900 | 550 | 0.20 ± | 1.482 |
| | | | 1300 | 0.6 / 0.9 | ≥ 500 | 550 | n.a. | 0.015 | 1.477 |

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

Strippability

Secondary coating only ≤ 10 cm
Secondary + primary coating ≤ 10 mm

Watertightness according to IEC 60794-1-2-F5

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

Tight buffer ≤ 4000 N /m
Cable ≤ 4000 N /m

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

See table with dimensions

Bending radii for fibres and tubes

Installation/operation > 25 mm

Bending radii cable

Static according to IEC 60794-1-2-E11 – 15 x Ø
Dynamic according to IEC 60794-1-2-E6 – 20 x Ø

Halogen-free according to IEC 60754-2 (HD 602)
Corrosivity pH ≥ 3.5 - $\mu\text{S}/\text{cm} \leq 100$

Flame retardancy according to IEC 60332-2



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 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 ≥ 0.3 mm must be prevented.
- It is advisable to cap the cable-ends during storage.

Options

- Indoor Mini-Breakout cables with tight buffered fibres or with excellent strippable dry semi-tight buffered fibres.
- Non-standard cable constructions with improved rodent protection**, colours, details and/or additional information regarding specifications are available on request.

Ordering information

Belden European Part Numbers

| Fibre-type/-count | 4 | 6 | 8 | 12 | 16 | 24 |
|------------------------------------|---|---|---------|---|---------|---------|
| 62.5/125-OM1 | GUMT104 | GUMT106 | GUMT108 | GUMT112 | GUMT116 | GUMT124 |
| 50/125-OM2 BW 600/1200 | GUMT204 | GUMT206 | GUMT208 | GUMT212 | GUMT216 | GUMT224 |
| 50/125-OM3 | GUMT304 | GUMT306 | GUMT308 | GUMT312 | GUMT316 | GUMT324 |
| 50/125-OM2e | GUMT404 | GUMT406 | GUMT408 | GUMT412 | GUMT416 | GUMT424 |
| 50/125-OM2 BW 500/500 | GUMT504 | GUMT506 | GUMT508 | GUMT512 | GUMT516 | GUMT524 |
| 50/125-OM3+ | GUMT604 | GUMT606 | GUMT608 | GUMT612 | GUMT616 | GUMT624 |
| 9/125-OS1 ITU G.655 | GUMT704 | GUMT706 | GUMT708 | GUMT712 | GUMT716 | GUMT724 |
| 9/125-OS1 ITU G.652D | GUMT804 | GUMT806 | GUMT808 | GUMT812 | GUMT816 | GUMT824 |
| Std. plywood reel (non-returnable) | $\varnothing 560 \times 336$ mm 4.25kg | $\varnothing 800 \times 475$ mm, 7.65 kg | | $\varnothing 1000 \times 530$ mm, 18kg | | |
| Std. delivery length | 2100 \pm 100 m | | | | | |

Updates

Revised:

| Revision number | Description | Date | Initials |
|-----------------|------------------------------|----------|----------|
| 01 | Introduction revised version | 24/04/07 | SN |
| 02 | | | |
| 03 | | | |
| 04 | | | |