

## Application

- For **outdoor and indoor** use in structured (data) wiring systems such as **campus backbone**, **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, trenches. Suitable for **direct burial** (crush  $\leq 100$  N/cm).

## Key features

- 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**.
- A simple **all dielectric** cable construction (and consequently **more cost-effective up to 12 fibres** than multi-tube cables) with standard rodent protection.
- Predicted lifetime > 30 years**.

## Construction & dimensions



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

- Primary coated optical fibres:  $\varnothing 250 \pm 15 \mu\text{m}$ .
- Central tube, jelly filled (**non-dripping and silicon-free**) with **up to 12 fibres**.  
 Individually colour coded optical fibres: red – natural – yellow – blue – green – violet – brown – black – orange – turquoise – pink and white.
- Swellable (for the longitudinal watertightness) yarns as strength members and for the standard rodent protection.
- 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. 12
$\varnothing$ Central tube (mm)	3.2
$\varnothing$ nom./max. (mm)	5.8 / 6.1
Weight (kg/km)	37
Energy of flame (kJ/m)	550

## Ordering information

### Belden European Part Numbers

Fibre-type/-count	2	4	6	8	12
62.5/125-OM1	GUSA102	GUSA104	GUSA106	GUSA108	GUSA112
50/125-OM2 BW 500/500	GUSA502	GUSA504	GUSA506	GUSA508	GUSA512
50/125-OM2 BW 600/1200	GUSA202	GUSA204	GUSA206	GUSA208	GUSA212
50/125-OM2e	GUSA402	GUSA404	GUSA406	GUSA408	GUSA412
50/125-OM3	GUSA302	GUSA304	GUSA306	GUSA308	GUSA312
9/125-G.652B	GUSA902	GUSA904	GUSA906	GUSA908	GUSA912
9/125-G.652D	GUSA802	GUSA804	GUSA806	GUSA808	GUSA812
Std. reel (non-returnable)	plywood reel $\varnothing 1000 * 530$ mm, weight 18 kg				
Std. delivery length	4100 $\pm$ 100 m				

## 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
9	9/125-OS1 ITU-G.652B	9.2± 0.4	1310	0.32 / 0.40	≤ 3.5	≤ 0.2	≤ 1260	1.467
		125 ± 1	1550	0.21 / 0.30	≤ 18			1.467
8	9/125-OS1 ITU-G.652D	9.2 ± 0.4	1310	0.32 / 0.40	≤ 3.5	≤ 0.2	≤ 1260	1.467
		125 ± 0.7	1550	0.21 / 0.30	≤ 18			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 / 0.30	3.5 – 8.5	≤ 0.1 <sup>A</sup>	≤ 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	2.7 / 3.2	≥ 200	275	33	0.275 ± 0.015	1.495
			1300	0.6 / 1.1	≥ 600	550	n.a.		1.490
5	50/125 OM2	50 ± 2.5 125 ± 1	850	2.4 / 3.0	≥ 500	600	82	0.20 ± 0.015	1.481
			1300	0.7 / 1.0	≥ 500	600	n.a.		1.476
2	50/125 OM2	50 ± 2.5 125 ± 1	850	2.3 / 2.8	≥ 600	600	82	0.20 ± 0.015	1.481
			1300	0.6 / 0.9	≥ 1200	600	n.a.		1.476
4	50/125 OM2e	50 ± 2,5 125 ± 1	850	2,3 / 2,8	≥ 600	750	110	0.20 ± 0.015	1,481
			1300	0,6 / 0,9	≥ 1200	2000	na		1,476
3	50/125 OM3	50 ± 2.5 125 ± 1	850	2.5 / 3.0	≥ 1500	900	300	0.20 ± 0.015	1.482
			1300	0.5 / 1.0	≥ 500	550	n.a.		1.477
6	50/125 OM3+	50 ± 2.5 125 ± 1	850	2.5 / 3.0	≥ 6000	900	550	0.20 ± 0.015	1.482
			1300	0.5 / 1.0	≥ 500	550	n.a.		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

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

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

Cable with standard RP ≤ 700 N

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

Cable ≤ 10000 N/m

**Bending radii for fibres and tubes**

Installation/operation > 25 mm

**Bending radii cable**

Static according to IEC 60794-1-2-E11 –10 x Ø  
Dynamic according to IEC 60794-1-2-E6 –15 x Ø

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

Corrosivity pH ≥ 3.5 - µS/cm ≤ 100

**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

- Outdoor cables with a black PE outer jacket.
- [Non-standard cable constructions](#), colours, details and/or additional information regarding specifications are available on request.