

Application

- For **outdoor and indoor** use in structured (data) wiring systems such as **industrial backbone**, **campus backbone**, **building backbone (riser)** and/or horizontal cabling.
- For **outdoor and indoor** use in networks for **industrial**, telecom, cable TV and/or broadcast.
- Suitable for **direct burial** and / or in ducts, tunnels and trenches.

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 (central tube) cable construction and consequently **more cost-effective up to 24 fibres** than multi-tube cables with a Steel Wire Armouring.
- **Predicted life time > 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. 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 - black - orange - turquoise - pink and white with black rings.
3. Swellable yarns as strength members and for the **longitudinal watertightness**.
4. Halogen-free inner jacket.
5. Steel Wire Armouring (SWA): helical stranded galvanised steel wires of $\text{Ø } 0.9 \text{ mm}$
6. Black 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 – 8 – 12	24
Type of cable	Type-12LS	Type-24LS
Ø Central tube (mm)	3.2	4.2
Ø Inner jacket, nom./max. (mm)	5.8 / 6.1	8.7 / 9.0
Ø Outer jacket, nom./max. (mm)	10.7 / 11.0	13.8 / 14.1
Weight (kg/km)	237	319

Ordering information

Belden Europe code

Fibre-type/-count	4	8	12	24
50/125	49341	49342	49343	49347
62.5/125	49344	49345	49346	49348
Colour code (black)	3290	3290	3290	3290
Reel code	043	043	043	043
Std. delivery length	4100 ± 100 m			2100 ± 100 m



Optical characteristics

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

Fibre-type	Size (μm)	Wavelength (nm)	Attenuation average/max. (dB/km)	Bandwidth (MHz \cdot km)	Gigabit Ethernet Performance (m)	Refractive Index
50/125	50 \pm 2.5	850	2.5 / 2.7	\geq 600	550	1.481
	125 \pm 2	1300	0.5 / 0.8	\geq 1200	550	1.476
62.5/125	62.5 \pm 2.5	850	3.0 / 3.2	\geq 200	220	1.495
	125 \pm 2	1300	0.6 / 0.9	\geq 600	550	1.490

Fibres with improved Gigabit Ethernet performance on request available.

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-12 \leq 700 N
Type-24 \leq 1400 N

Crush resistance according to IEC 60794-1-2-E3
Cable \leq 30000 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 \emptyset
Dynamic according to IEC 60794-1-2-E6 -15 x \emptyset

Halogen-free according to HD 602 (IEC 60754-2)
Corrosivity pH \geq 3.5 - $\mu\text{S/cm} \leq$ 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 a pulling wire, certified lubricants (e.g. paraffin) may be used. The use of soap or similar substances as lubricants is strictly prohibited.
- 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 from 1 to 24 fibres.
- Outdoor cables with a black PE outer jacket.
- **Non-standard cable constructions**, colours, details and/or additional information regarding specifications are available on request.