



### 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  $\leq 150$  N/cm).

### Key features

- **Installation friendly dry interstices** between the loose tubes.
- **All dielectric** cables with standard rodent protection.
- **Predicted life time > 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 ( $\text{Ø } 250 \pm 15 \mu\text{m}$ ). 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)
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

No. of fibres	24	36	48	72	96	144
Type-xxdcPE	type-48dc			type-72dc	type-96dc	type-144dc
Cable core	6 x 4	6 x 6	6 x 8	6 x 12	8 x 12	12 x 12
Ø Central element (mm)	2.1			2.6	2.6 / 4.3	3.5 / 7.6
Ø Loose tube (mm)	2.1			2.6	2.6	2.6
Ø nom/max (mm)	9.8 / 10.1			11.0 / 11.3	12.7 / 13.0	16.0 / 16.3
Weight (kg/km)	75			101	147	210
Energy of flame (kJ/m)	2300			2930	3554	4827

### Ordering information

#### Belden Europe code

Fibre-type/-count	24	36	48	72	96	144
9/125	49968	49874	49980	49875	49475	49473
Colour code (black)	3082	3082	3082	3082	3082	3082
Colour code (green)	3083	3083	3083	3083	3083	3083
Reel code	043	043	043	043	043 / 053	053
Std. delivery length	4100 $\pm$ 100 m			2100 $\pm$ 100 m		
Del. length on request	5000 $\pm$ 100 m			3000 $\pm$ 100 m		



## Optical characteristics

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

Fibre-type	Size ( $\mu\text{m}$ )	Wavelength (nm)	Attenuation average/max. (dB/km)	Dispersion (ps/(nm•km))	PMD (ps/ $\sqrt{\text{km}}$ )	Refractive Index
9/125	9.3 $\pm$ 0.5	1310	0.33 / 0.38	$\leq$ 3.5	$\leq$ 0.5	1.467
	125 $\pm$ 1	1550	0.20 / 0.25	$\leq$ 18		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
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### Bending radii cable

Static according to IEC 60794-1-2-E11	– 10 x $\emptyset$
Dynamic according to IEC 60794-1-2-E6	– 15 x $\emptyset$

## 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.