

## GDCD

**Multi Loose Tube Cables**  
**Outdoor - Corrugated Steel Tape Armor (CST) Single Jacket**  
**A-DF(ZN)(SR)2Y**  
 Full Rodent Protection  
 2017-05-29 v6.0

### Ordering Information

#### Belden European Part Numbers

Fibre Description / count	12	24	36	48	60	72
62.5/125-OM1	GDCD112	GDCD124	GDCD136	GDCD148	GDCD160	GDCD172
50/125-OM2 BI	GDCD212	GDCD224	GDCD236	GDCD248	GDCD260	GDCD272
50/125-OM3 BI	GDCDD12	GDCDD24	GDCDD36	GDCDD48	GDCDD60	GDCDD72
50/125-OM4 BI	GDCDE12	GDCDE24	GDCDE36	GDCDE48	GDCDE60	GDCDE72
9/125 ITU G.655 C&D	GDCD712	GDCD724	GDCD736	GDCD748	GDCD760	GDCD772
9/125 ITU G.652D & G.657A1 BI	GDCD812	GDCD824	GDCD836	GDCD848	GDCD860	GDCD872
9/125 ITU G.657A2 BI	GDCDF12	GDCDF24	GDCDF36	GDCDF48	GDCDF60	GDCDF72
9/125 ITU G.657B3 BI	GDCDI12	GDCDI24	GDCDI36	GDCDI48	GDCDI60	GDCDI72
Std. plywood reel (non-returnable)	Ø 1250 * 688 mm 93 kg					
Std. delivery length	2100 ± 105m					

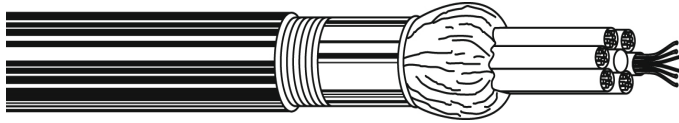
### Applications

- For **outdoor** use in structured (data) wiring systems such as (**campus backbone**).
- For **outdoor** use in networks for telecom, cable TV and/or broadcast.
- Easy to install in ducts, tunnels and trenches by means of compressed air or pulling wire.
- Suitable for direct burial (crush ≤ 400 N/cm).

### Features & Benefits

- **High mechanical and full rodent protection** provided by corrugated steel tape (**CST**) armor.
- **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.
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 – green – blue – yellow – violet – pink – orange – black – grey – brown – white – turquoise.
3. The loose tubes are stranded around the central element, if necessary with fillers (PE-natural).  
Colour coding of the loose tubes: 1. red – 2. green – rest white.
4. Jelly filling compound between interstices, and PET foil over cable core.
5. Swellable (for the longitudinal watertightness) aramid and E-glass yarns as strength members surrounded by swelling tape.
6. Corrugated Steel Tape Armoring (CST): longitudinally applied steel tape (0.155 mm).
7. Black UV resistant PE outer jacket.  
Identification: BELDEN OFC – “cable type” = “number x fibre type” + date-, meter- and P/N marking.

## Mechanical Data

No. of fibres	Max. 72
Cable core	6 tubes
$\varnothing$ Central element (mm)	2.7
$\varnothing$ Loose tube (mm)	2.5
$\varnothing$ nom./max. (mm)	12.5 / 12.8
Energy of flame (kJ/m)	4715
Weight (kg/km)	187

## Optical Characteristics

### Characteristics Single-Mode – Matched-Cladded optical fibres according to ITU.

European P/N Coding, Position 5	Fibre-Type	Mode-Field /Cladding Diameter (um)	Wave-length (nm)	Attenuation typical/ max. (dB/km)	Dispersion (ps/(nm-km))	PMD (ps/km)	Cable Cut-off Wave-length (nm)
7	9/125 G.655 C&D	8.4 ± 0.6 125 ± 0.7	1550 1625	0.2 / 0.22 0.21 / 0.24	≤ 4.5 ≤ 7.9	≤ 0.04 <sup>A</sup>	≤ 1260
8	9/125 G.652D & G.657A1 BI OS2	9.2 ± 0.4 125 ± 0.7	1310 1550 1625	0.33 / 0.34 0.18 / 0.19 0.20 / 0.24	≤ 3.2 ≤ 17	≤ 0.06	≤ 1260
F	9/125 G.657A2 BI	8.9 ± 0.4 124.8 ± 0.3	1310 1550 1625	0.34 / 0.35 0.19 / 0.21 0.20 / 0.24	≤ 3.5 ≤ 18	≤ 0.2	≤ 1260
I	9/125 G.657B3 BI	8.8 ± 0.4 125 ± 0.4	1310 1550 1625	0.34 / 0.35 0.19 / 0.21 0.20 / 0.23	≤ 3.5 ≤ 18	≤ 0.06	≤ 1260

Note A- Link design value

### Characteristics Multi-Mode Graded-Index optical fibres according to IEC 60793

European P/N Coding, Position 5	Fibre-Type	Core/ Cladding Diameter (um)	Wave-length (nm)	Attenuation typical/ max. (dB/km)	Bandwidth (MHz•km)	Ethernet Performance (m)		Num. Apert. (μm)
						1 GBE	10 GBE	
1	62.5/125 OM1	62.5 ± 2.5 125 ± 1	850 1300	2.7 / 3.0 0.7 / 0.8	≥ 200 ≥ 600	220 550	33 300	0.275 ± 0.015
2	50/125 OM2 BI	50 ± 2.5 125 ± 1	850 1300	2.3 / 2.5 0.5 / 0.6	≥ 500 ≥ 500	600 600	83 300	0.20 ± 0.015
D	50/125 OM3 BI	50 ± 2.5 125 ± 1	850 1300	2.3 / 2.5 0.5 / 0.6	≥ 1500 ≥ 500	1000 550	300 300	0.20 ± 0.015
E	50/125 OM4 BI	50 ± 2.5 125 ± 1	850 1300	2.3 / 2.5 0.5 / 0.6	≥ 3500 ≥ 500	1100 550	550 300	0.20 ± 0.015

## Macro Bending Performance Fibers

Maximum attenuation increase for Bend Insensitive Single Mode fibers in dB depending on turns and radius.

European P/N Coding, Position 5	Fibre-Type	Wave-length (nm)	Turns 100 Radius 30 mm (dB)	Turns 10 Radius 15 mm (dB)	Turn 1 Radius 16 mm (dB)	Turn 1 Radius 10 mm (dB)	Turn 1 Radius 7.5 mm (dB)	Turn 1 Radius 5 mm (dB)
7	9/125 G.655 C & D	1550 1625	0.05 0.05		0.5 0.5			
8	9/125 G.652D & G.657A1 BI OS2	1550 1625	0.03 0.03	0.25 1.0		0.75 1.5		
F	9/125 G.657A2 BI	1550 1625		0.03 0.1		0.1 0.2	0.5 1.0	
I	9/125 G.657B3 BI	1550 1625				0.03 0.1	0.08 0.25	0.15 0.45

Maximum attenuation increase for Bend Insensitive Multi Mode fibers in dB depending on turns and radius.

European P/N Coding, Position 5	Fibre-Type	Wave-length (nm)	Turns 100 Radius 37.5 mm (dB)	Turns 2 Radius 15 mm (dB)	Turns 2 Radius 7.5 mm (dB)
1	62.5/125 OM1	850 1300	0.5 0.5		
2	50/125 OM2 BI	850 1300	0.5 0.5	0.1 0.3	0.2 0.5
D	50/125 OM3 BI	850 1300	0.5 0.5	0.1 0.3	0.2 0.5
E	50/125 OM4 BI	850 1300	0.5 0.5	0.1 0.3	0.2 0.5

## Mechanical, Physical and/or Environmental Characteristics

Requirements	
<b>Temperature range</b> according to IEC 60794-1-2-F1 Transport/storage Installation Operation	-30 to + 70 °C -5 to + 50 °C -30 to + 70 °C
<b>Pulling tension</b> according to IEC 60794-1-2-E1 Long term Short term	≤ 3500 N ≤ 7000 N
<b>Bending radius for tube</b> Installation/operation	>25 mm
<b>Watertightness</b> according to IEC 60794-1-2-F5	Yes
<b>Crush resistance</b> according to IEC 60794-1-2-E3 Armoured Central Loose Tube Cable	≤ 50 KN/m
<b>Bending radii cable</b> Static according to IEC 60794-1-2-E11 Dynamic according to IEC 60794-1-2-E6	15 x Ø 20 x Ø

## Guide to installation and handling

- When laying and installing optical fibre cables it is **vitaly 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 > 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

- Cables for indoor/outdoor use.
- **Non-standard cable constructions**, colors, details and/or additional information regarding specifications are available on request.