

## GBRG

Multi Loose Tube Cables  
Outdoor  
A-DQ(ZN)B2Y  
Improved Rodent Protection

### Ordering Information

#### Belden European Part Numbers

Fibre type / count	4	8	12	18	24	30	36
62.5/125-OM1	GBRG104	GBRG108	GBRG112	GBRG118	GBRG124	GBRG130	GBRG136
50/125-OM2 BW 600/1200	GBRG204	GBRG208	GBRG212	GBRG218	GBRG224	GBRG230	GBRG236
50/125-OM3	GBRG304	GBRG308	GBRG312	GBRG318	GBRG324	GBRG330	GBRG336
50/125-OM2e	GBRG404	GBRG408	GBRG412	GBRG418	GBRG424	GBRG430	GBRG436
50/125-OM2 BW 500/500	GBRG504	GBRG508	GBRG512	GBRG518	GBRG524	GBRG530	GBRG536
50/125-OM4	GBRG604	GBRG608	GBRG612	GBRG618	GBRG624	GBRG630	GBRG636
9/125 ITU G.655	GBRG704	GBRG708	GBRG712	GBRG718	GBRG724	GBRG730	GBRG736
9/125 ITU G.652D-OS2	GBRG804	GBRG808	GBRG812	GBRG818	GBRG824	GBRG830	GBRG836
Std. plywood reel (non-returnable)	Ø 1250 * 688 mm 93 kg						
Std. delivery length	2100 ± 100m						

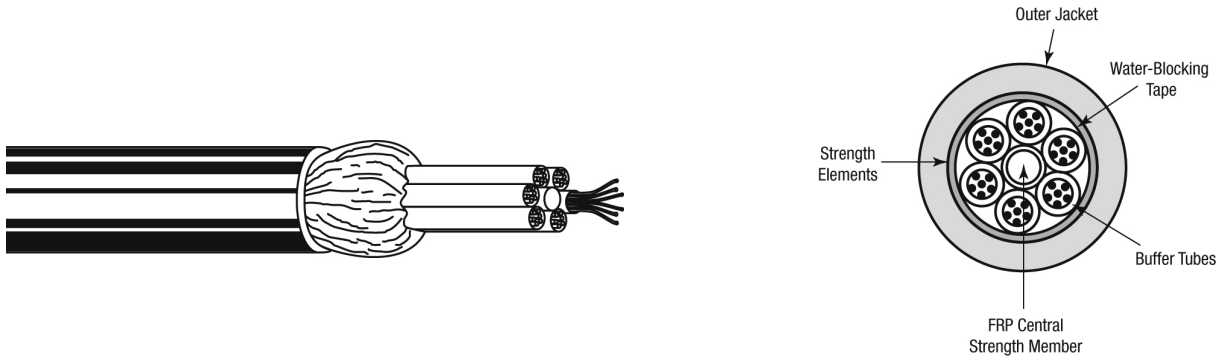
### Applications

- 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.

### Features & Benefits

- **Dry Construction.**
- **Improved rodent protection** provided by waterblocking glassyarns.
- **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, surrounded by swelling yarns.
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 – green – blue – yellow – violet – pink .
3. The loose tubes are stranded around the central element, if necessary with fillers (PE-natural), surrounded by swelling tape.  
Colour coding of the loose tubes: 1. red – 2. green – rest white.
4. Swellable (for the longitudinal watertightness) glass yarns as strength members and for improved rodent protection.
5. 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. 36
Cable core	6 tubes
Ø Central element (mm)	2.1
Ø Loose tube (mm)	1.9
Ø nom./max. (mm)	11.8 / 12.1
Energy of flame (kJ/m)	3200
Weight (kg/km)	105

## Optical Characteristics

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

European Partnumber Coding, Position 5	Fibre-Type	Mode-Field /Cladding Diameter (um)	Wave-length (nm)	Attenuation average/ max. (dB/km)	Dispersion (ps/(nm-km))	PMD (ps/km)	Cable Cut-off Wave-length (nm)
8	9/125 G.652D OS2	9.2 ± 0.4 125 ± 0.7	1310 1550	0.32 / 0.40 0.21 / 0.30	≤ 3.5 ≤ 18	≤ 0.2	≤ 1260
7	9/125 G.655	8.4 ± 0.6 125 ± 1	1550	0.25 / 0.30	3.5 – 8.5	≤ 0.1 <sup>A</sup>	≤ 1260

Note A- Link design value

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

European Partnumber Coding, Position 5	Fibre-Type	Mode-Field Diameter (um)	Wave-length (nm)	Attenuation average/ max. (db/km)	Bandwidth h (MHz•km)	Ethernet Performance (m)		Num. Apert. (µm)	Refr. Index
						1GBE	10 GBE		
1	62.5/125 OM1	62.5 ± 2.5 125 ± 1	850 1300	2.7 / 3.2 0.6 / 1.1	≥ 200 ≥ 600	275 550	33 n.a.	0.275 ± 0.015	1.495 1.490
5	50/125 OM2	50 ± 2.5 125 ± 1	850 1300	2.4 / 3.0 0.7 / 1.0	≥ 500 ≥ 500	600 600	82 n.a.	0.20 ± 0.015	1.481 1.476
2	50/125 OM2	50 ± 2.5 125 ± 1	850 1300	2.3 / 2.8 0.6 / 0.9	≥ 600 ≥ 1200	600 600	82 n.a.	0.20 ± 0.015	1.481 1.476
4	50/125 OM2e	50 ± 2,5 125 ± 1	850 1300	2,3 / 2,8 0,6 / 0,9	≥ 600 ≥ 1200	750 2000	110 na	0.20 ± 0.015	1,481 1,476
3	50/125 OM3	50 ± 2.5 125 ± 1	850 1300	2.5 / 3.0 0.5 / 1.0	≥ 1500 ≥ 500	900 550	300 n.a.	0.20 ± 0.015	1.482 1.477
6	50/125 OM4	50 ± 2.5 125 ± 1	850 1300	2.5 / 3.0 0.5 / 1.0	≥ 6000 ≥ 500	900 550	550 n.a.	0.20 ± 0.015	1.482 1.477

A test report (attenuation) is supplied with each delivery.

## 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	≤ 3000 N ≤ 6000 N
<b>Bending radii for fibres and tubes</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 Cable	≤ 20 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.

Revision

Rev.	Description	Date	Init.
02	OM3+ changed to OM4	12/10/09	JW
03	OS2 added	30/11/09	JW
04	Changed energy	22/11/10	TvR
Date: 06/02/09		Page 1 of 1	
Orig.: SN		Review:	
			Part Number: <b>GBRG</b>