

GBRF

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

Ordering Information

Belden European Part Numbers

Fibre type / count	108	120	132	144
62.5/125-OM1	GBRF108	GBRF120	GBRF132	GBRF144
50/125-OM2 BW 600/1200	GBRF208	GBRF220	GBRF232	GBRF244
50/125-OM3	GBRF308	GBRF320	GBRF332	GBRF344
50/125-OM2e	GBRF408	GBRF420	GBRF432	GBRF444
50/125-OM2 BW 500/500	GBRF508	GBRF520	GBRF532	GBRF544
50/125-OM4	GBRF608	GBRF620	GBRF632	GBRF644
9/125 ITU G.655	GBRF708	GBRF720	GBRF732	GBRF744
9/125 ITU G.652D-OS2	GBRF808	GBRF820	GBRF832	GBRF844
Std. plywood reel (non-returnable)	Ø 1400 * 900 mm 120 kg			
Std. delivery length	2100 ± 100m			

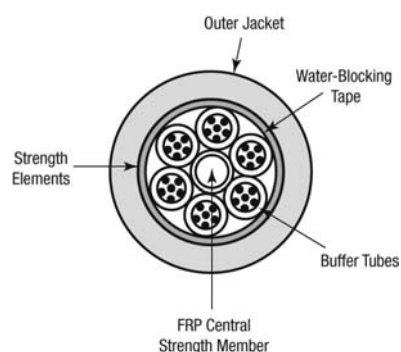
Applications

- 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 – orange – black – grey – brown – white – turquoise.
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. 144
Cable core	12 tubes
Ø Central element (mm)	3.0/7.5
Ø Loose tube (mm)	2.5
Ø nom./max. (mm)	18.5 / 18.8
Energy of flame (kJ/m)	7700
Weight (kg/km)	248

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 ^A	≤ 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 (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	
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
Pulling tension according to IEC 60794-1-2-E1	
Long term	≤ 4000 N
Short term	≤ 8000 N
Bending radii for fibres and tubes	
Installation/operation	>25 mm
Watertightness according to IEC 60794-1-2-F5	Yes
Crush resistance according to IEC 60794-1-2-E3	
Cable	≤ 20 KN/m
Bending radii cable	
Static according to IEC 60794-1-2-E11	15 x Ø
Dynamic according to IEC 60794-1-2-E6	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 and weight	22/11/10	TvR
Date: 18/12/08		Page 1 of 1	
Orig.: SN		Review:	
			Part Number: GBRF