BELDEN
SENDING ALL THE RIGHT SIGNALS

Technical Data Sheet

GUSB

Central Loose Tube Cables
Universal – Indoor/ Outdoor
A/I-DQ(ZN)BH

Standard Rodent Protection

Ordering Information

Belden European Part Numbers

Fibre type / count	4	6	8	12	16	24
62.5/125-OM1	GUSB104	GUSB106	GUSB108	GUSB112	GUSB116	GUSB124
50/125-OM2 BW 600/1200	GUSB204	GUSB206	GUSB208	GUSB212	GUSB216	GUSB224
50/125-OM3	GUSB304	GUSB306	GUSB308	GUSB312	GUSB316	GUSB324
50/125-OM2e	GUSB404	GUSB406	GUSB408	GUSB412	GUSB416	GUSB424
50/125-OM2 BW 500/500	GUSB504	GUSB506	GUSB508	GUSB512	GUSB516	GUSB524
50/125-OM4	GUSB604	GUSB606	GUSB608	GUSB612	GUSB616	GUSB624
9/125 ITU G.655	GUSB704	GUSB706	GUSB708	GUSB712	GUSB716	GUSB724
9/125 ITU G.652D	GUSB804	GUSB806	GUSB808	GUSB812	GUSB816	GUSB824
Std. plywood reel (non-returnable)	Ø 1000 * 530mm 18 kg					
Std. delivery length	2100 ± 100m					

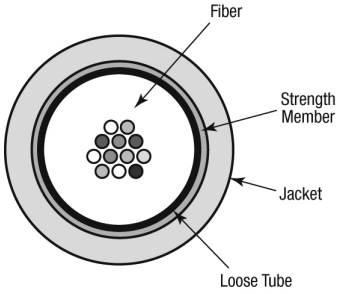
Applications

- For **outdoor and indoor** use in structured (data) wiring systems such as **campus backbone**, **building backbone** (riser) and/or Horizontal cabling.
- For **outdoor and indoor** use in networks for Telecom, Cable TV and/or Broadcast.
- **Easy to install** in ducts, tunnels and trenches and/or tubes (by means of compressed air or pulling wire). Suitable for **direct burial**.

Features & Benefits

- 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 **all dielectric** cable construction (and consequently **more cost-effective up to 24 fibres** then multi-tube cables) with standard rodent protection.
- **Predicted lifetime > 30 years.**

Construction & Dimensions



Cable Specifications (construction in accordance with IEC 60794)

1. Primary coated optical fibres: Ø 250 ± 15 um.
2. 2. Central tube, jelly filled **(non-dripping and silicon-free)** with **up to 24 fibres.**
   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 – grey – orange – turquoise – pink and white with rings.
3. Swellable (for the longitudinal watertightness) yarns as strength members and for the standard rodent protection.
4. **Orange** 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	Max. 24
Ø Central tube (mm)	4.2
Ø nom./max. (mm)	8.7 / 9.0
Energy of flame (kJ/m)	1370
Weight (kg/km)	72

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	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	
Tansport/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	≤ 2110 N
Short term	≤ 4220 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	≤ 15000 N/ m
Bending radii cable	
Static according to IEC 60794-1-2-E11	10 x Ø
Dynamic according to IEC 60794-1-2-E6	15 x Ø
Flame retardancy according to IEC 60332-3C (EN 50266-2-4)	Pass
Halogen-free according to IEC 60754-2 (EN 50267-2-2)	
Corrosivity	pH ≥ 3.5 - µS/cm ≤ 100

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 > 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

- Outdoor cables with a black PE outer jacket.
- **Non-standard cable constructions**, colours, details and/or additional information regarding specifications are available on request.

Revision

Rev.	Description	Date	Init.
1.1	Added B in VDE description	10 Dec 2008	TvR
2.0	OM3+ changed to OM4	12 Oct 2009	JW

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Orig.: SN	Review:	