BELDEN
SENDING ALL THE RIGHT SIGNALS

Technical Data Sheet

GUSA

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

Standard Rodent Protection

Ordering Information

Belden European Part Numbers

Fibre type / count	2	4	6	8	12
62.5/125-OM1	GUSA102	GUSA104	GUSA106	GUSA108	GUSA112
50/125-OM2 BW 600/1200	GUSA202	GUSA204	GUSA206	GUSA208	GUSA212
50/125-OM3	GUSA302	GUSA304	GUSA306	GUSA308	GUSA312
50/125-OM2e	GUSA402	GUSA404	GUSA406	GUSA408	GUSA412
50/125-OM2 BW 500/500	GUSA502	GUSA504	GUSA506	GUSA508	GUSA512
50/125-OM4	GUSA602	GUSA604	GUSA606	GUSA608	GUSA612
9/125 ITU G.655	GUSA702	GUSA704	GUSA706	GUSA708	GUSA712
9/125 ITU G.652D-OS2	GUSA802	GUSA804	GUSA806	GUSA808	GUSA812
Std. plywood reel (non-returnable)	Ø 800 * 475mm 14 kg				
Std. delivery length	4100 ± 100m				

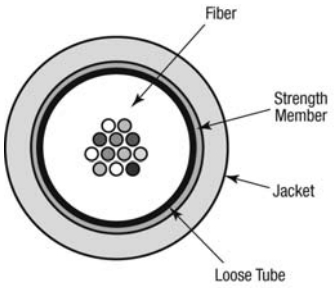
Applications

- For **outdoor and indoor** use in structured (data) wiring systems such as **campus backbone, building backbone (riser)** and/or Horizontal cabling. Support all computer network applications such as **FDDI, Gigabit Ethernet and ATM**.
- **Easy to install** in ducts, tunnels and trenches. 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 12 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. Central tube, jelly filled **(non-dripping and silicon-free)** with **up to 12 fibres.**
   Individually colour coded optical fibres: red – natural – yellow – blue – green – violet – brown – black – orange - turquoise – pink and white.
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. 12
Ø Central tube (mm)	3.3
Ø nom./max. (mm)	5.8 / 6.1
Energy of flame (kJ/m)	550
Weight (kg/km)	37

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	
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	≤ 700 N
Short term	≤ 1500 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	≤ 20000 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
3.0	OS2 added	25 Nov 2009	JW
4.0	Crush resistance increased	29 Mar 2010	SN
5.0	Diam. Tube changed to 3.3mm	28 Okt 2010	SN
Date: 03/07/08	Page 1 of 1	Part Number:	
Orig.: SN	Review:	**GUSA**	