

## GUSN

### 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	16	24
62.5/125-OM1	GUSN102	GUSN104	GUSN106	GUSN108	GUSN112	GUSN116	GUSN124
50/125-OM2 BW	GUSN202	GUSN204	GUSN206	GUSN208	GUSN212	GUSN216	GUSN224
50/125-OM3	GUSN302	GUSN304	GUSN306	GUSN308	GUSN312	GUSN316	GUSN324
50/125-OM2e	GUSN402	GUSN404	GUSN406	GUSN408	GUSN412	GUSN416	GUSN424
50/125-OM2 BW 500/500	GUSN502	GUSN504	GUSN506	GUSN508	GUSN512	GUSN516	GUSN524
50/125-OM4	GUSN602	GUSN604	GUSN606	GUSN608	GUSN612	GUSN616	GUSN624
9/125 ITU G.655	GUSN702	GUSN704	GUSN706	GUSN708	GUSN712	GUSN716	GUSN724
9/125 ITU G.652D-OS2	GUSN802	GUSN804	GUSN806	GUSN808	GUSN812	GUSN816	GUSN824
Std. plywood reel (non-returnable)	Ø800*475mm 7.65 kg Ø1000*530mm 18.0 kg						
Std. delivery length	2100m ± 100m 4100m ± 100m						

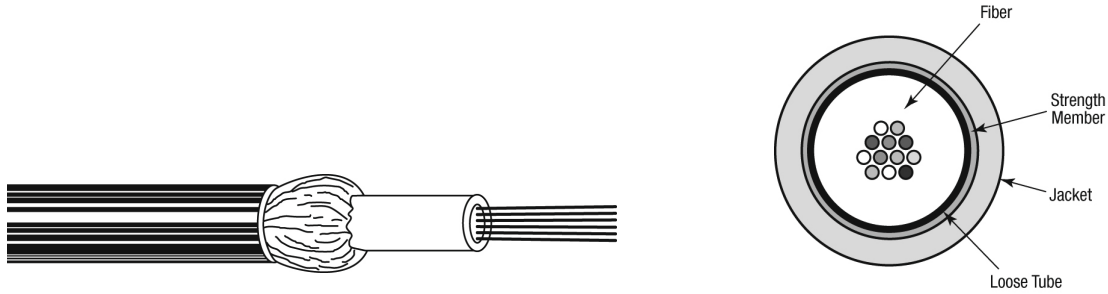
## Applications

- 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 24 fibres** than 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:  $\text{Ø } 250 \pm 15 \text{ }\mu\text{m}$ .
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)	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 <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 (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	≤ 700 N ≤ 1500 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	≤ 15000 N/ m
<b>Bending radii cable</b> Static according to IEC 60794-1-2-E11 Dynamic according to IEC 60794-1-2-E6	10 x Ø 15 x Ø
<b>Flame retardancy</b> according to IEC 60332-1 (EN 50265-2-1)	Pass
<b>Halogen-free</b> 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 **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

- 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	Changed flame retardancy from IEC 332-3C to IEC332-1	02/04/2009	TvR
2.0	OM3+ changed to OM4	12/10/09	JW
3.0	OS2 added	25/11/09	JW
4.0	Crush resistance increased	29/03/10	SN
5.0	Diam. Tube changed to 3.3mm	28/10/10	SN
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