BELDEN
SENDING ALL THE RIGHT SIGNALS

Technical Data Sheet

GUWB

Central Loose Tube Cables
Universal – Indoor/Outdoor, Steel Wire Armor (SWA)
A/I-DQ(ZN)HBH
Full Rodent Protection

Ordering Information

Belden European Part Numbers

Fibre type / count	12	16	24
62.5/125-OM1	GUWB112	GUWB116	GUWB124
50/125-OM2 BW 600/1200	GUWB213	GUWB216	GUWB224
50/125-OM3	GUWB312	GUWB316	GUWB324
50/125-OM2e	GUWB412	GUWB416	GUWB424
50/125-OM2 BW 500/500	GUWB512	GUWB516	GUWB524
50/125-OM4	GUWB612	GUWB616	GUWB624
9/125 ITU G.655	GUWB712	GUWB716	GUWB724
9/125 ITU G.652D-OS2	GUWB812	GUWB816	GUWB824
Std. plywood reel (non-returnable)	Wooden reel Ø 1250 * 688 mm 93 kg		
Std. delivery length	2100 ± 100m		

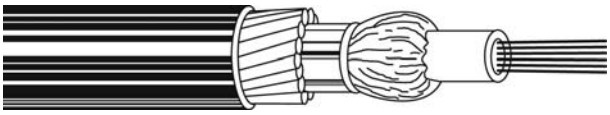
Applications

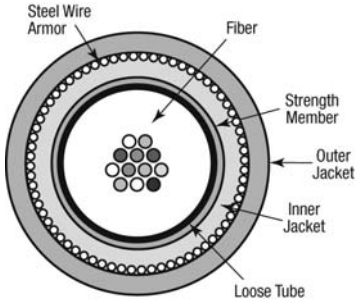
- For **outdoor and indoor** use in structured (data) wiring systems such as **industrial backbone,** campus backbone, building backbone (riser) and/or horizontal cabling.
- For **outdoor and indoor** use in networks for **industrial**, telecom, cable TV and/or broadcast.
- Suitable for **direct burial** and / or in ducts, tunnels and trenches.

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 (central tube) cable construction and consequently **more cost-effective up to 24** fibres then multi-tube cables with a Steel Wire Armouring.
- **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 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 yarns as strength members and for the **longitudinal watertightness.**
4. Halogen-free inner jacket.
5. Steel Wire Armouring (SWA): helical stranded galvanized steel wires of Ø 0.9 mm
6. Black 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 Inner jacket, nom./max. (mm)	8.7 / 9.0
Ø Outer jacket, nom./max. (mm)	13.8 / 14.1
Energy of flame (kJ/m)	2625
Weight (kg/km)	319

Optical Characteristics

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

European Partnumber Coding, Position 5	Fibre-Type	Mode-Field /CladdingDiameter (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 Installation Operation	 -30 to + 70 ˚C -5 to + 50 ˚C -30 to + 70 ˚C
Pulling tension according to IEC 60794-1-2-E1 Long term Short term	 ≤ 2110 N ≤ 4220 N
Bending radii for fibres and tubes Installation/operation	 >25 mm
Watertightness (core + inner jacket) according to IEC 60794-1-2-F5	Yes
Crush resistance according to IEC 60794-1-2-E3	≤ 30000 N/m
Bending radii cable Static according to IEC 60794-1-2-E11 Dynamic according to IEC 60794-1-2-E6	 10 x Ø 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.
- 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

- **Non-standard cable constructions**, colours, 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	25/11/09	JW
04	Extended description watertightness	22/03/10	SN
05	Updated tensile strength	22/11/2010	TvR

Date: 03/07/08	Page 1 of 1	Part Number: GUWB
Orig.:	Review:	