

GCWE

Multi Loose Tube Cables

Universal – Indoor / Outdoor – Galvanised Steel Wire Armor (SWA)

A/I-DQ(ZN)H(B)H (R0.9vzk)

Full Rodent Protection

Ordering Information

Belden European Part Numbers

Fibre type / count	84	96
62.5/125-OM1	GCWE184	GCWE196
50/125-OM2 BW 600/1200	GCWE284	GCWE296
50/125-OM3	GCWE384	GCWE396
50/125-OM2e	GCWE484	GCWE496
50/125-OM2 BW 500/500	GCWE584	GCWE596
50/125-OM4	GCWE684	GCWE696
9/125 ITU G.655	GCWE784	GCWE796
9/125 ITU G.652D-OS2	GCWE884	GCWE896
Std. plywood reel (non-returnable)	Ø 1250 * 688 mm 93 kg	
Std. delivery length	2100 ± 100m	

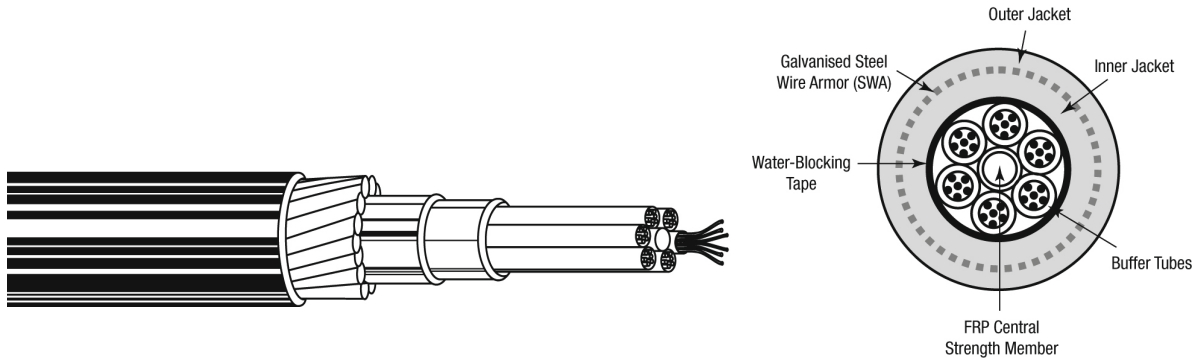
Applications

- For **outdoor and indoor** use in structured (data) wiring systems such as (**campus backbone**).
- For **outdoor and indoor** 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

- **Installation friendly dry interstices** between the loose tubes.
- **High mechanical and full rodent protection** provided by Steel Wire **Armor (SWA)**.
- **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) aramid yarns as strength members.
5. FRNC/LSNH inner jacket.
6. Steel Wire Armouring (SWA): helically stranded galvanized steel wires of $\text{Ø } 0.9 \text{ mm}$.
7. Black UV resistant FRNC/LSNH outer jacket.
Identification: BELDEN OFC – “cable type” – “number x fibre type” + date-, meter- and P/N marking.

Mechanical Data

No. of fibres	Max. 96
Cable core	8 tubes
Ø Central element (mm)	3.0/4.3
Ø Loose tube (mm)	2.5
Ø nom./max. (mm)	17.0 / 17.3
Energy of flame (kJ/m)	4900
Weight (kg/km)	465

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 (core + inner jacket) according to IEC 60794-1-2-F5		Yes
Crush resistance according to IEC 60794-1-2-E3		
Armoured Central Loose Tube Cable		≤ 50 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
Flame retardancy according to		
IEC 60332-3-22 (EN 50266-2-2)		Pass
IEC 61034 (EN 50268)		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 **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 outdoor use only.
- **Non-standard cable constructions**, colours, details and/or additional information regarding specifications are available on request.

Revision

Rev.	Description	Date	Init.
02	Changed energy	22/11/10	TvR
03	Remove Circuit Integrity IEC 60331-25	23/05/12	SN
Date: 01/07/10		Page 1 of 1	
Orig.: SN		Review:	
			Part Number: GCWE