

GM TT

**Mini-Breakout Cables (Distribution)
Mobile, Tactical – Indoor/ Outdoor,
A/I-VQ(ZN)11Y**

Ordering Information

Belden European Part Numbers

Fibre type / count	1	2	4	6	8	12
62.5/125-OM1	GM TT101	GM TT102	GM TT104	GM TT106	GM TT108	GM TT112
50/125-OM2 BW 600/1200	GM TT201	GM TT202	GM TT204	GM TT206	GM TT208	GM TT212
50/125-OM3	GM TT301	GM TT302	GM TT304	GM TT306	GM TT308	GM TT312
50/125-OM2e	GM TT401	GM TT402	GM TT404	GM TT406	GM TT408	GM TT412
50/125-OM2 BW 500/500	GM TT501	GM TT502	GM TT504	GM TT506	GM TT508	GM TT512
50/125-OM4	GM TT601	GM TT602	GM TT604	GM TT606	GM TT608	GM TT612
9/125 ITU G.655	GM TT701	GM TT702	GM TT704	GM TT706	GM TT708	GM TT712
9/125 ITU G.652D	GM TT801	GM TT802	GM TT804	GM TT806	GM TT808	GM TT812
9.125 ITU G.657A	GM TTA01	GM TTA02	GM TTA04	GM TTA06	GM TTA08	GM TTA12
Std. plywood reel (non-returnable)	Ø 560 * 336 mm 4.25 kg			Ø 800 * 475 mm 7.65 kg		
Std. delivery length	2100 ± 100m					

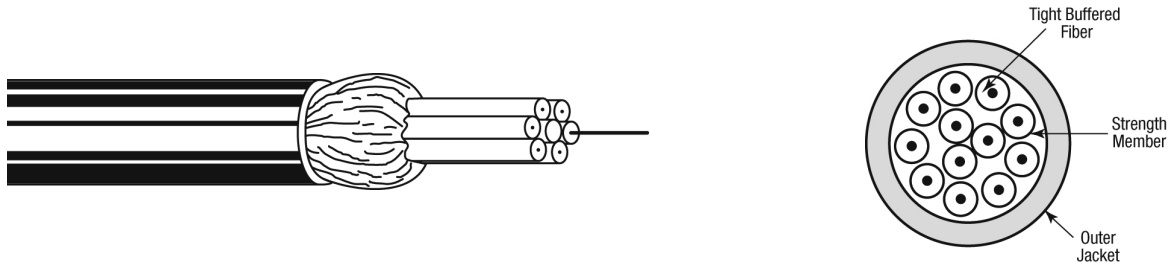
Applications

- These metal-free mobile cables have been designed for de-spooling and re-spooling repeatedly.
- Support computer network applications such as FDDI, Gigabit Ethernet and ATM.
- **Easy to install.** Not recommended for direct burial.

Features & Benefits

- Extremely strong, rugged, survivable tight-buffered cables for severe environments.
- These cables are flame retardant and watertight and therefore suitable for indoor and outdoor use.
- Helically stranded cable core for flexibility and outstanding mechanical protection for the fibers.
- Core-bonded Polyurethane jacket providing simple installation.
- **Predicted lifetime > 30 years.**

Construction & Dimensions



Cable Specifications (construction in accordance with IEC 60794)

1. Primary coated optical fibres: $\text{Ø } 280 \pm 15 \mu\text{m}$.
2. Tight buffered fibres: $\text{Ø } 0.9 \pm 0.1 \text{ mm}$. Colour coding of the buffered fibres: white – red – blue – yellow – green – violet – brown – black – orange – turquoise – pink – grey.
3. Swellable aramid yarns as common strength members and for the longitudinal watertightness.
4. **Black Polyurethane** outer jacket with (polyester) rip cord.
Identification: BELDEN OFC – TACTICAL CABLE – "number x type of fibre" +date-, meter- and P/N-marking.

Mechanical Data

No. of fibres	1	2	4	6	8	12
Ø Outer jacket nom. (mm)	5.4	5.4	5.8	6.3	7.0	8.2
Max. pulling tension (N)						
Long term	700	700	800	950	1100	1100
Short term	1500	1500	1600	2000	2200	2200
Energy of flame (kJ/m)	440	470	580	725	890	1270
Weight (kg/km)	26	27	31	38	47	76

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)	Refractive Index	Cable Cut-off Wave-length (nm)
8	9/125 G.652D Patch cord quality	9.2 ± 0.4 125 ± 0.3	1310 1550	0.34 / 0.50 0.21 / 0.30	≤ 3.5 ≤ 18	≤ 0.2	1.467	≤ 1260
7	9/125 G.655	8.4 ± 0.6 125 ± 1	1550	0.25 / 0.30	3.5 – 8.5	≤ 0.1 ^A	1.470	≤ 1260
A	9/125 G.657A	8.9 ± 0.4 125 ± 0.3	1310 1550 1625	0.35 / 0.5 0.21 / 0.3 0.24 / 0.4	≤ 3.5 ≤ 18	≤ 0.2	1.467	≤ 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	Core/ Cladding Diameter (um)	Wave-length (nm)	Attenuation average/ max. (dB/km)	Bandwidth (MHz•km)	Ethernet Performance (m)		Num. Apert. (µm)
						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
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
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
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
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
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

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 Installation Operation	-70 to + 85 °C -5 to + 50 °C -55 to + 85 °C
Pulling tension according to IEC 60794-1-2-E1	See table with dimensions
Bending radii for fibres Installation/operation (all fiber): Only for G657A:	>25 mm Max. increase 0.02 dB/turn @ 1550nm with 32 mm Max. increase 0.20 dB/turn @ 1550nm with 20 mm
Strippability Secondary coating only Secondary + primary coating	≤ 10 cm ≤ 10 mm
Watertightness according to IEC 60794-1-2-F5	Yes
Crush resistance according to IEC 60794-1-2-E3 Tight buffer Cable	≤ 4000 N/ m ≤ 4000 N/ m
Bending radii cable Static according to IEC 60794-1-2-E11 Dynamic according to IEC 60794-1-2-E6 Only for fibre G657A:	15 x Ø 20 x Ø 8 x Ø 4 x Ø
Flame retardancy according to: IEC 60332-2 (EN 50265-2-2)	Pass
Repeated bending according to IEC 60794-1-2-E6	> 700.000 times

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.
- If a cable needs to be fastened, constrictions ≥ 0.3 mm must be prevented.
- It is advisable to cap the cable-ends during storage.

Options

- Non-standard cable constructions with different colours, details and/or additional information regarding specifications are available on request.

Revision

Rev.	Description	Date	Init.
02	OM3+ changed to OM4	13/10/09	JW
Date: 19/01/09		Page 1 of 1	
Orig.: SN		Review:	
			Part Number: GMTT