GUMT

Mini-Breakout Cables (Distribution)
Universal – Indoor/ Outdoor
A/I-VQ(ZN)H

Standard Rodent Protection
2017-03-29 v14.0

Ordering Information

Belden European Part Numbers

Fibre Description / count	2	4	6	8	12	16	24
62.5/125-OM1	GUMT102	GUMT104	GUMT106	GUMT108	GUMT112	GUMT116	GUMT124
50/125-OM2 BI	GUMT202	GUMT204	GUMT206	GUMT208	GUMT212	GUMT216	GUMT224
50/125-OM3 BI	GUMTD02	GUMTD04	GUMTD06	GUMTD08	GUMTD12	GUMTD16	GUMTD24
50/125-OM4 BI	GUMTE02	GUMTE04	GUMTE06	GUMTE08	GUMTE12	GUMTE16	GUMTE24
9/125 ITU G.657A1 BI	GUMTA02	GUMTA04	GUMTA06	GUMTA08	GUMTA12	GUMTA16	GUMTA24
9/125 ITU G.657A2 BI	GUMTF02	GUMTF04	GUMTF06	GUMTF08	GUMTF12	GUMTF16	GUMTF24
9/125 ITU G.657B3 BI	GUMTI02	GUMTI04	GUMTI06	GUMTI08	GUMTI12	GUMTI16	GUMTI24
Std. plywood reel (non-returnable)	Ø560*336mm 4.25 kg				Ø1000*530mm 18 kg		
Std. delivery length	2100 ± 105m						

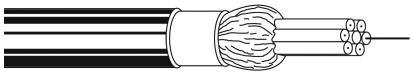
Applications

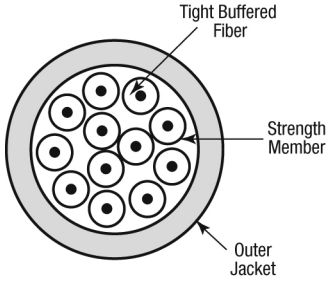
- Structured (premises) wiring systems: **campus and/or building backbone** (riser) and/or horizontal cabling.
- Support all computer network applications such as **FDDI, Gigabit Ethernet and ATM.**
- **Easy to install** in ducts, tunnels and trenches. Not recommended for direct burial.

Features & Benefits

- These cables **are halogen-free** (= FRNC and LSNH) and watertight and therefore suitable for internal and external use. Consequently splicing can be avoided and the installation gets **more cost-effective.**
- These cables are all **dielectric** (metal-free).
- **Predicted lifetime > 30 years.**

Construction & Dimensions





Cable Specifications (construction in accordance with IEC 60794)

1. Swellable reinforced yarns as common strength members and for the longitudinal watertightness.
2. Primary coated optical fibres: Ø 280 ± 15 um.
3. Tight buffered fibres: Ø 0.9 ± 0.05 mm. Colour coding of the buffered fibres:

   white – red – blue – yellow – green – violet – brown – black – orange – turquoise – pink – grey
   The fibres 13 – 24 are ringmarked.
4. Swellable glassyarns for improved rodent protection.
5. Halogen-free (FRNC/LSNH) UV-resistant outer jacket.
   Identification: BELDEN OFC – “cable type” – ”number x type of fibre” +date-, meter- and P/N-marking.

Mechanical Data

No. of fibres	2	4	6	8	12	16	24
Ø nom. (mm)	5.4	5.4	5.9	5.9	7.6	8.6	9.6
Max. pulling tension (N) Short term	400	400	400	400	450	530	650
Energy of flame (kJ/m)	291	296	347	371	622	845	1082
Weight (kg/km)	25	26	30	32	45	53	65

Optical Characteristics

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

European P/N Coding, Position 5	Fibre-Type	Mode-Field /Cladding Diameter (um)	Wave-length (nm)	Attenuation[B] typical/ max. (dB/km))	Dispersion (ps/(nm-km)	PMD[A] (ps/km)	Cable Cut-off Wave-length (nm)
A	9/125 G.657A1 BI	8.9 ± 0.4 124.8 ± 0.3	1310 1550 1625	0.34 / 0.35 0.19 / 0.21 0.20 / 0.24	≤ 3.5 ≤ 18	≤ 0.06	≤ 1260
F	9/125 G.657A2 BI	8.9 ± 0.4 124.8 ± 0.3	1310 1550 1625	0.34 / 0.35 0.19 / 0.21 0.20 / 0.24	≤ 3.5 ≤ 18	≤ 0.06	≤ 1260
I	9/125 G.657B3 BI	8.8 ± 0.4 125 ± 0.4	1310 1550 1625	0.34 / 0.35 0.19 / 0.21 0.20 / 0.23	≤ 3.5 ≤ 18	≤ 0.06	≤ 1260

Note A- Link design value

Note B- Due to cabling the optical attenuation values can increase with max 0.15 dB/km (1310 nm), max. 0.09 dB/km (1550 nm) and max. 0.27 dB/km (1625 nm)

Characteristics Multi-Mode Graded-Index optical fibres according to IEC 60793

European P/N Coding, Position 5	Fibre-Type	Core/ Cladding Diameter (um)	Wave-length (nm)	Attenuation[C] typical/ max. (dB/km))	Bandwidth (MHz•km)	Ethernet Performance (m)		Num. Apert. (µm)
						1 GBE	10 GBE	
1	62.5/125 OM1	62.5 ± 2.5 125 ± 1	850 1300	2.7 / 3.0 0.7 / 0.8	≥ 200 ≥ 600	220 550	33 300	0.275 ± 0.015
2	50/125 OM2 BI	50 ± 2.5 125 ± 1	850 1300	2.3 / 2.5 0.5 / 0.6	≥ 500 ≥ 500	600 600	83 300	0.20 ± 0.015
D	50/125 OM3 BI	50 ± 2.5 125 ± 1	850 1300	2.3 / 2.5 0.5 / 0.6	≥ 1500 ≥ 500	1000 550	300 300	0.20 ± 0.015
E	50/125 OM4 BI	50 ± 2.5 125 ± 1	850 1300	2.3 / 2.5 0.5 / 0.6	≥ 3500 ≥ 500	1100 550	550 300	0.20 ± 0.015

Note C- Due to cabling the optical attenuation values can increase with max. 0.4 dB/km

Macro Bending Performance Fibers

Maximum attenuation increase for Bend Insensitive Single Mode fibers in dB depending on turns and radius.

European P/N Coding, Position 5	Fibre-Type	Wave-length (nm)	Turns 100 Radius 25 mm (dB)	Turns 10 Radius 15 mm (dB)	Turn 1 Radius 10 mm (dB)	Turn 1 Radius 7.5 mm (dB)	Turn 1 Radius 5 mm (dB))
A	9/125 G.657A1	1550 1625	0.01 0.05	0.2 0.5	0.2 0.5		
F	9/125 G.657A2	1550 1625		0.03 0.1	0.1 0.2	0.5 1.0	
I	9/125 G.657B3	1550 1625			0.03 0.10	0.08 0.25	0.15 0.45

Maximum attenuation increase for Bend Insensitive Multi Mode fibers in dB depending on turns and radius.

European P/N Coding, Position 5	Fibre-Type	Wave-length (nm)	Turns 100 Radius 37.5 mm (dB)	Turns 2 Radius 15 mm (dB))	Turns 2 Radius 7.5 mm (dB)
1	62.5/125 OM1	850 1300	0.5 0.5		
2	50/125 OM2 BI	850 1300	0.5 0.5	0.1 0.3	0.2 0.5
D	50/125 OM3 BI	850 1300	0.5 0.5	0.1 0.3	0.2 0.5
E	50/125 OM4 BI	850 1300	0.5 0.5	0.1 0.3	0.2 0.5

Mechanical, Physical and/or Environmental Characteristics

Description:	Tested according to:	Requirement:	According to Family specification:
Storage Temperature Range Installation Temperature Range Operating Temperature Range	IEC 60794-1-22-F1	-30 to +70 °C -5 to +50 °C -30 to +70 °C	IEC 60794-2-20
Strippability Secondary coating only Secondary + primary coating		 ≤ 10 cm ≤ 10 mm	
Bending radii for fibres and tight buffers Installation/operation For Bend Insensitive fibres		 >25 mm See Optical Characteristics	
Cable Water Blocking	IEC 60794-1-22-F5	Pass	
Cable Min. Bend Radius Operation (Long Term) Cable Min. Bend Radius Installation (Short Term)	IEC 60794-1-21-E11 IEC 60794-1-21-E6	10 x Cable Diam. 20 x Cable Diam.	IEC 60794-2-20
Cable Max. Tensile Strength Operation (Short Term)	IEC 60794-1-21-E1	See table with dimensions	IEC 60794-2-20
Cable Max. Crush Resistance Operation (Long Term) Cable Max. Crush Resistance Installation (Short Term)	IEC 60794-1-21-E3	3 kN/m 5 kN/m	IEC 60794-2-20

Safety

	Testing standard	Description / Value
Reaction to fire	IEC 60332-3-24 EN 50575	Dca-s1,d1,a1
Smoke density	IEC 61034-2	
Halogen acid gas content	IEC 60754-1	Zero
Degree of acidity of gases	IEC 60754-2 IEC 60754-2	Min. 4.3 pH Max. 10 µS/mm

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 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.
- It is advisable to cap the cable-ends during storage.

Options

- Indoor Mini-Breakout cables with tight buffered fibres or with excellent strippable dry semi-tight buffered fibres.
- Non-standard cable constructions with improved rodent protection, colours, details and/or additional information regarding specifications are available on request.