

GUMX

Mini-Breakout Cables (Distribution)

Universal – Indoor / Outdoor - Corrugated Steel Tape Armor (CST)

A/I-VQ(ZN)H(SR)H

Full Rodent Protection

15-01-2018 v13

Ordering Information

Belden European Part Numbers

Fibre Description / count	2	6	8	12	16	24
62.5/125-OM1	GUMX102	GUMX106	GUMX108	GUMX112	GUMX116	GUMX124
50/125-OM2 BI	GUMX202	GUMX206	GUMX208	GUMX212	GUMX216	GUMX224
50/125-OM3 BI	GUMXD02	GUMXD06	GUMXD08	GUMXD12	GUMXD16	GUMXD24
50/125-OM4 BI	GUMXE02	GUMXE06	GUMXE08	GUMXE12	GUMXE16	GUMXE24
9/125 ITU G.657A1 BI	GUMXA02	GUMXA06	GUMXA08	GUMXA12	GUMXA16	GUMXA24
9/125 ITU G.657A2 BI	GUMXF02	GUMXF06	GUMXF08	GUMXF12	GUMXF16	GUMXF24
9/125 ITU G.657B3 BI	GUMXI02	GUMXI06	GUMXI08	GUMXI12	GUMXI16	GUMXI24
Std. plywood reel (non-returnable)	Ø1250*688mm 74kg					
Std. delivery length	2100 ± 105m					

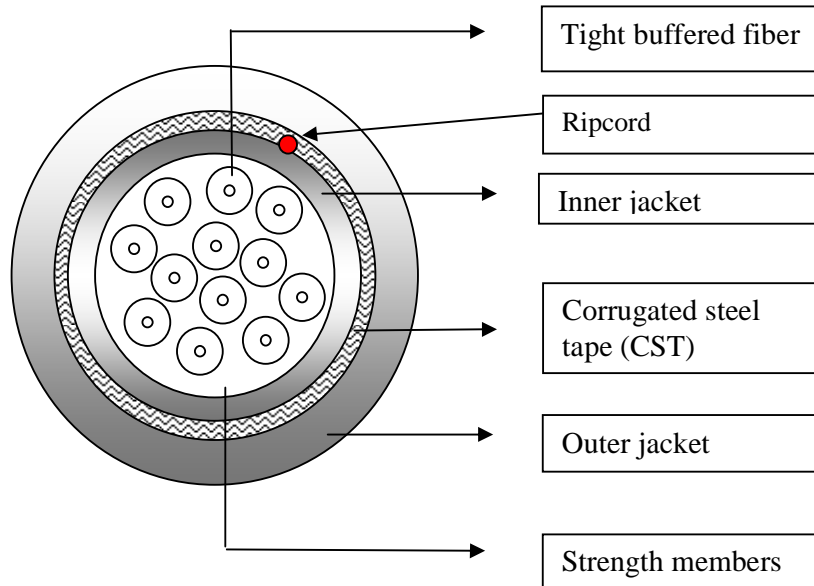
Applications

- Suitable for use in ducts or direct burial
- Designed for direct termination.
- Easy to install.

Features & Benefits

- These cables are based on tight buffered optical fibres
- Extremely strong, rugged, survivable tight-buffered cables for severe environments.
- Helically stranded cable core for flexibility and outstanding mechanical protection for the fibers.
- Predicted lifetime > 40 years.

Construction & Dimensions



Cable Specifications

1. Primary coated optical fibres: $\text{Ø } 280 \pm 15 \mu\text{m}$.
2. Tight buffered fibres: $\text{Ø } 0.9 \pm 0.05 \text{ mm}$. Colour coding of the buffered fibres
white – red – blue – yellow – green – violet – brown – black – orange – turquoise – pink – grey
The fibres 13 – 24 are ringmarked.
3. Swellable glass yarns as common strength members and for the longitudinal watertightness.
4. FRNC/LSNH inner jacket.
5. Ripcord
6. Corrugated Steel Tape Armoring (CST): longitudinally applied steel tape (0.155 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	2	6	8	12	16	24
Ø Inner jacket nom. (mm)	5.9	5.9	5.9	7.2	8.6	9.6
Ø Outer jacket nom. (mm)	11.0	11.0	11.0	11.5	13.5	14.5
Max. pulling tension (N) Short term	1010	1010	1040	1480	1530	1990
Energy of flame (kJ/m)	825	847	851	1162	1346	1583
Weight (kg/km)	95	101	104	148	148	199

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 Core Water Blocking	IEC 60794-1-22-F5	Pass	
Cable Min. Bend Radius Operation (Long Term)	IEC 60794-1-21-E11	15 x Cable Diam.	IEC 60794-2-20
Cable Min. Bend Radius Installation (Short Term)	IEC 60794-1-21-E6	20 x Cable Diam.	
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)	IEC 60794-1-21-E3	13 kN/m	IEC 60794-2-20
Cable Max. Crush Resistance Installation (Short Term)		15 kN/m	

Safety

	Testing standard	Description / Value
Reaction to fire	IEC 60332-1 IEC 60332-3-22 EN 50575	B2ca-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.
- If a cable needs to be fastened, constrictions ≥ 0.3 mm must be prevented.
- It is advisable to cap the cable-ends during storage.