BELDEN
SENDING ALL THE RIGHT SIGNALS

Technical Data Sheet

GIBS

Breakout Cables
Indoor
I-K(ZN)HH

Ordering Information

Belden European Part Numbers

Fibre type / count	2	4	6	8	12	24
62.5/125-OM1	GIBS102	GIBS104	GIBS106	GIBS108	GIBS112	GIBS124
50/125-OM2 BW 600/1200	GIBS202	GIBS204	GIBS206	GIBS208	GIBS212	GIBS224
50/125-OM3	GIBS302	GIBS304	GIBS306	GIBS308	GIBS312	GIBS324
50/125-OM2e	GIBS402	GIBS404	GIBS406	GIBS408	GIBS412	GIBS424
50/125-OM2 BW 500/500	GIBS502	GIBS504	GIBS506	GIBS508	GIBS512	GIBS524
50/125-OM4	GIBS602	GIBS604	GIBS606	GIBS608	GIBS612	GIBS624
9/125 ITU G.655	GIBS702	GIBS704	GIBS706	GIBS708	GIBS712	GIBS724
9/125 ITU G.652D	GIBS802	GIBS804	GIBS806	GIBS808	GIBS812	GIBS824
9.125 ITU G.657A	GIBSA02	GIBSA04	GIBSA06	GIBSA08	GIBSA12	GIBSA24
Std. reel (non-returnable)	∅ 800 * 475 mm weight 7.65 kg		∅ 1000 * 530 mm weight 18 kg		∅ 1250 * 688 mm weight 81 kg	
Std. delivery length	2100 ± 100m					

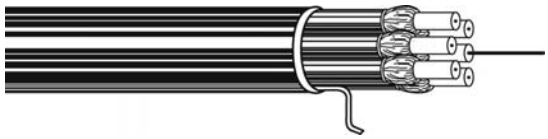
Applications

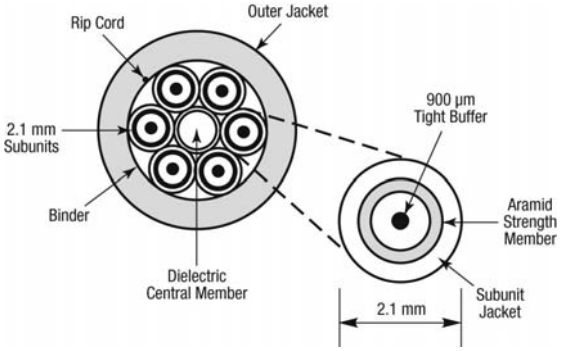
- Structured (premises) wiring systems: **building backbone (riser) and/or horizontal cabling**.
- Support all computer network applications such as FDDI, Gigabit Ethernet and ATM.
- **Easy to install** in ducts, tunnels and trenches.

Features & Benefits

- The individual single fibre units (of which these metal-free breakout cables are composed) permit direct **(detensioned) terminations with separate single-way connectors**, which eliminate splicing of pigtails and/or breakout kits.
- These cables are **halogen-free** (= FRNC and LSNH) and **metal-free** (all dielectric).
- **Predicted lifetime > 30 years**.

Construction & Dimensions





Cable Specifications (construction in accordance with IEC 60794)

1. Primary coated optical fibres: Ø 245 ± 10 µm.
2. Dry FRNC / LSNH Semi-Tight buffer: Ø 0.90 ± 0.1 mm.
3. Aramid yarns as strength members.
4. **Yellow** (SM fibre) or **Orange** (MM fibre) halogen-free (FRNC/LSNH) numbered jacket (Ø 2.1 ± 0.2mm)
5. Tape.
6. **Yellow** (SM fibre) or **Orange** (MM fibre) halogen-free (FRNC/LSNH) outer jacket with rip cord.
   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	24
Cable core	2+2BE	CE+4	CE+6	CE+8	3+9	2+8+14
Ø nom. (mm)	5.3	6.2	8.0	9.4	10.5	14.3
Max. pulling tension (N)						
Long term	400	400	600	800	1200	2400
Short term	800	800	1200	1600	2400	4800
Weight (kg/km)	25	31	59	77	87	175
Energy of Flame (kJ/m)	379	507	928	1235	1424	2677

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 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	≤ 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
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	≤ 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	
Tansport/storage	-30 to + 70 ˚C
Installation	-5 to + 50 ˚C
Operation	-5 to + 55 ˚C
Pulling tension according to IEC 60794-1-2-E1	
Single Fibre Unit	
Long term	≤ 110 N
Short term	≤ 220 N
Cable	See table
Bending radii for fibres and semi-tight buffers	
Installation/operation	>25 mm
Bending radii cable	
Static according to IEC 60794-1-2-E11	10 x Ø
Dynamic according to IEC 60794-1-2-E6	15 x Ø
Strippability	
Secondary coating only	≤ 30 cm
Secondary + primary coating	≤ 10 mm
Crush resistance according to IEC 60794-1-2-E3	
Semi-Tight Buffer	≤ 4000 N/ m
Single Fibre Unit	≤ 4000 N/m
Cable	≤ 7500 N/m
Halogen-free according to IEC 60754-2 (EN 50267-2-2)	
Corrosivity	pH ≥ 3.5 - µS/cm ≤ 100
Flame retardancy according to IEC 60332-1 (EN 60332-1)	Pass

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 standardsstandard colours.
- If a cable needs to be fastened, constrictions must be avoided.
- To ease insertion certified lubricants (e.g. paraffin) may be used.
  The use of soap or similar substances as lubricants is strictly prohibited.
- Indoor optical fibre cables have been designed for use inside buildings. Consequently they are not longitudinal watertight.
- It is advisable to cap the cable-ends during storage

Options

- Breakout cables with Tight Buffered fibres.
- Mixed Fibre types.
- Non-standard cable constructions and colours.

Revision

Rev.	Description	Date	Init.
02	Bending radii cable added	16/07/09	SN
03	OM3+ changed to OM4	12/10/09	JW

Date: 16/07/09	Page 1 of 1	Part Number:
Orig.: SN	Review:	**GIBS**