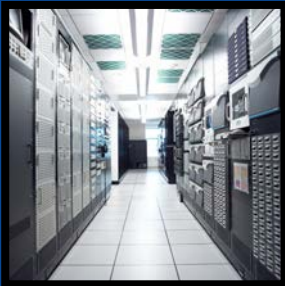


# Belden® Optical Fiber Cable Catalog



**Be certain.  
Belden.**

**Belden Optical Fiber Cables  
for Mission Critical Applications**

**Belden® Solutions**

Involvement in the development of optical fiber components for over 40 years, Belden is a leading supplier of high quality optical fiber cabling systems. Used in a wide range of mission critical applications, our optical fiber cables are designed to offer reduced complexity, increased flexibility and rapid installation.





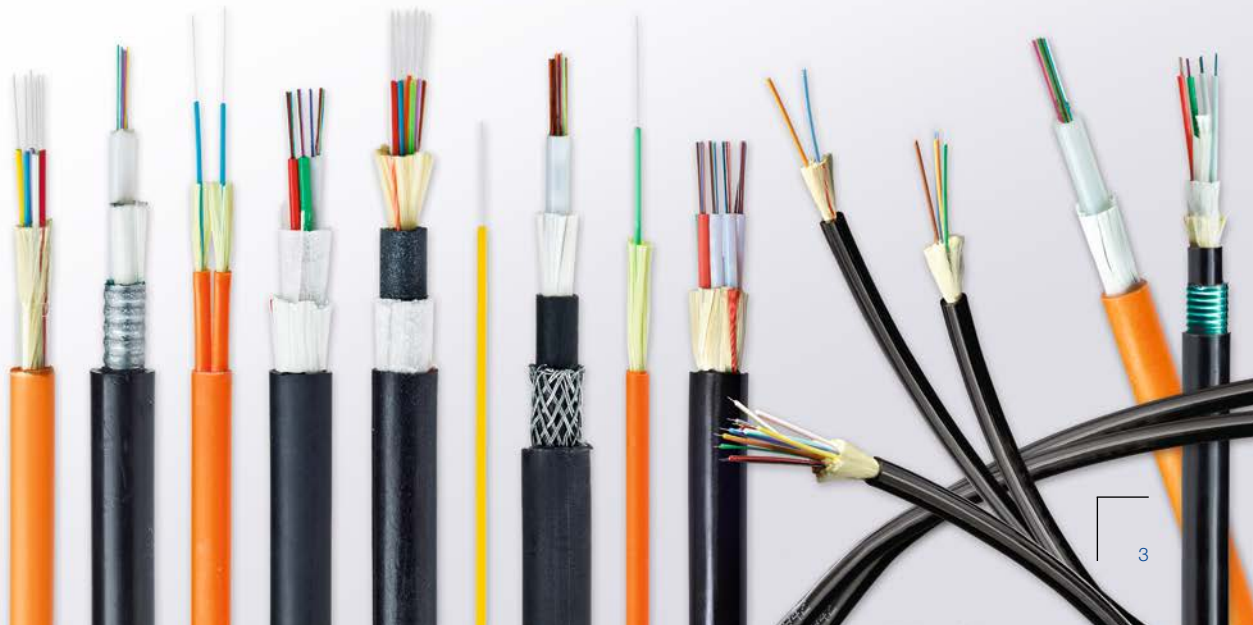
## Belden Optical Fiber Cables

### Reduce Complexity and Increase Flexibility

Today's advanced networks are diverse and almost always complex. The right way ahead is to future-proof these networks and to take precautions to protect them against anything that will create problems, damage or disruption. That means matching the right hardware with the right cabling to guarantee performance – and that means choosing fiber optic cable. Optical fiber cables offer many benefits: high bandwidth and transmission speed, the potential for network growth, extended reach, fault tolerance, greater data security and support for Gigabit and multi-Gigabit protocols and networked applications.

Involved in the development of optical fiber components for over 40 years, Belden is a leading supplier of high-quality, cost-effective optical fiber cabling systems. Belden's fiber cabling range is the culmination of our experience and expertise in a variety of applications, including data centers, premise and campus network backbone infrastructures, fiber-to-the-desk (FTTD) applications, horizontal and centralized cabling systems. Belden's fiber cables are designed to offer reduced complexity, increased flexibility, and rapid installation for maximum cost effectiveness.

This catalog will provide you with comprehensive information about our optical fiber cabling portfolio – from buffered fiber cables right through to central and multi loose tube variations for several applications. The upcoming pages contain all the key technical data and ordering information about the products to help you with configuring the right fiber backbone for your next mission critical application.



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## Construction Lookup Table

Interconnect Cables			
Construction	Description	VDE	Page
GIOS, GIOT	Buffered Fiber	I-K, I-V	10
GIPS_1, GIPT_1	Simplex	I-K(ZN)H, I-V(ZN)H	12
GIPS_2, GIPT_2	Duplex – ZIP	I-K(ZN)H, I-V(ZN)H	14
GIPS_ER, GIPT_ER	Duplex – Round	I-K(ZN)H, I-V(ZN)H	16
GIPS_H, GIPT_H	Duplex – Heavy	I-K(ZN)HH, I-V(ZN)HH	18
GIPZ	Breakout Kit – Indoor	I-K(ZN)H,	20
GMPZ	Breakout Kit – Universal	I-K(ZN)11Y	22

Breakout Cables			
Construction	Description	VDE	Page
GIBS, GIBT	Breakout Indoor	I-K(ZN)HH, I-V(ZN)HH	24
GUBT	Breakout Universal	A/I-VQ(ZN)HH	26

Distribution/Mini-Breakout Cables			
Construction	Description	VDE	Page
GIMS, GIMT	Distribution Indoor	I-K(ZN)H, I-V(ZN)H	28
GUMS, GUMT	Distribution Universal	A/I-K(ZN)H, A/I-V(ZN)H	30
GUXT	Distribution Universal RP	A/I-V(ZN)BH	32
GUXW	Distribution Universal SWA	A/I-VQ(ZN)HBH	34
GUMX	Distribution Universal CST	A/I-VQ(ZN)H(SR)H	36
GUMV	Distribution Universal SWB	A/I-VQ(ZN)H(SR)H	38

Tactical Mobile Cables			
Construction	Description	VDE	Page
GMTT	Tactical Distribution	A/I-VQ(ZN)11Y	40
GMRT	Tactical Distribution RP	A/I-VQ(ZN)11Y(ZN)11Y	42
GMBT	Tactical Breakout	A/I-VQ(ZN)H(ZN)11Y	44
GWRT	Wind Tower	A/I-VQ(ZN)11Y(ZN)11Y	46

Central Loose Tube Cables			
Construction	Description	VDE	Page
GUSN, GUSL, GURN, GUVN	CLT Universal	A/I-DQ(ZN)BH	48
GOSN, GORN, GOVN	CLT Outdoor	A-DQ(ZN)B2Y	50
GUCN, GUCB	CLT Universal CST	A/I-DQ(ZN)(SR)H	52
GOCN, GOCB	CLT Outdoor CST	A-DQ(ZN)(SR)2Y	54
GUDN, GUDB	CLT Universal CST	A/I-DQ(ZN)H(SR)H	56
GODN, GODB	CLT Outdoor CST	A-DQ(ZN)2Y(SR)2Y	58
GUHA	CLT Universal SWB	A/I-DQ(ZN)H(SR)H	60
GOHN	CLT Outdoor SWB	A-DQ(ZN)2Y(SR)2Y	62
GUWN, GUWB	CLT Universal SWA	A-DQ(ZN)H(SR)H	64
GOWN, GOWB	CLT Outdoor SWA	A-DQ(ZN)2Y(SR)2Y	66
GUFN	CLT Universal FRP	A/I-DQBH	68
GOFN, GOFB	CLT Outdoor FRP	A-DQB2Y	70



Multi Loose Tube Cables			
Construction	Description	VDE	Page
GCRG, GCRD, GCRE, GCRF	MLT Universal	A/I-DQ(ZN)BH	72
GBRG, GBRD, GBRE, GBRF	MLT Outdoor	A-DQ(ZN)B2Y	74
GDRG, GDRD, GDRE, GDRF	MLT Outdoor	A-DF(ZN)B2Y	74
GCCG, GCCD, GCCE, GCCF	MLT Universal CST	A/I-DQ(ZN)(SR)H	76
GBCG, GBCD, GBCE, GBCF	MLT Outdoor CST	A-DQ(ZN)(SR)2Y	78
GDCG, GDCD, GDCE, GDCF	MLT Outdoor CST	A-DF(ZN)(SR)2Y	78
GCDG, GCDD, GCDE, GCDF	MLT Universal CST	A/I-DQ(ZN)H(SR)H	80
GBDG, GBDD, GBDE, GBDF	MLT Outdoor CST	A-DQ(ZN)2Y(SR)2Y	82
GDDG, GDDD, GDDE, GDDF	MLT Outdoor CST	A-DF(ZN)2Y(SR)2Y	82
GCWG, GCWD, GCWE, GCWF	MLT Universal SWA	A/I-DQ(ZN)HBH	84
GBWG, GBWD, GBWE, GBWF	MLT Outdoor SWA	A-DQ(ZN)2YB2Y	86
GDWG, GDWD, GDWE, GDWF	MLT Outdoor SWA	A-DF(ZN)2YB2Y	86
GAAG, GAAD, GAAE, GAAF	MLT Outdoor ADSS	A-DQ(ZN)2Y(T)	88

## Part Number Coding

The part numbers for the European Optical Fiber cables have the following structure:

- 4 positions to describe the construction
- 1 position to describe the fiber type
- 2 positions to describe the fiber count
  - In case of Simplex/Duplex products, position 6 is used to define the diameter

### Example 1

Construction				Fiber Type	Fiber Count	
1	2	3	4	5	6	7
G	I	M	T	3	1	2

In this example the

- Construction is: **GI**MT
- Fiber type is: **3**
- Fiber count is: **12**

### Example 2 (Simplex/Duplex Products)

Construction				Fiber Type	Diameter	Fiber Count
1	2	3	4	5	6	7
G	I	P	T	A	E	2

In this example the

- Construction is: **GI**PT
- Fiber type is: **A**
- Diameter is: **E**
- Fiber count is: **2**

The coding for the fiber type can be found on pages 8 and 9 of this catalog.

The coding of the diameter can be found in the relevant pages for Simplex/Duplex cables.

## Fiber Types

### Tight Buffer Optical Characteristics

European Part Number Coding, Position 5	Fiber-Type	Mode-Field/Cladding Diameter (μm)	Wave-length (nm)	Attenuation Average/max. (dB/km)	Dispersion (ps/nm-km)	PMD (ps/km)	Cable Cut-off Wave-length (nm)	Min. Bending Radius (mm)
<b>Characteristics (cabled) Single-Mode • Matched-Cladded Optical Fibers according to ITU</b>								
<b>A</b>	9/125	8.9 ± 0.4	1310	0.35/0.4	≤ 3.5	≤ 0.2 <sup>A</sup>	≤ 1260	10
	G.657A1	125.0 ± 0.3	1550	0.21/0.3	≤ 18.0			
	OS2		1625	0.24/0.4				
<b>F</b>	9/125	8.9 ± 0.4	1310	0.35/0.4	≤ 3.5	≤ 0.2 <sup>A</sup>	≤ 1260	7.5
	G.657A2	125.0 ± 0.3	1550	0.21/0.3	≤ 18.0			
	OS2		1625	0.24/0.4				
<b>I</b>	9/125	8.8 ± 0.4	1310	0.35/0.4	≤ 3.5	≤ 0.2 <sup>A</sup>	≤ 1260	5.0
	G.657B3	125.0 ± 0.3	1550	0.22/0.3	≤ 18.0			
	OS2		1625	0.24/0.4				

Note A: Link design value

European Part Number Coding, Position 5	Fiber-Type	Core/Cladding Diameter (μm)	Wave-length (nm)	Attenuation Average/max. (dB/km)	Bandwidth (MHz/km)	Ethernet Performance (m)		Num. Apert. (μm)	Min. Bending Radius (mm)
						1 GBE	10 GBE		
<b>Characteristics (cabled) Multi-Mode • Graded-Index Optical Fibers according to IEC 60793</b>									
<b>1</b>	62.5/125 OM1	62.5 ± 2.5	850	2.7/3.2	≥ 200	275	33	0.275 ± 0.015	25
		125.0 ± 1.0	1300	0.6/1.1	≥ 600	550	300		
<b>2</b>	50/125 OM2	50.0 ± 2.5	850	2.4/3.0	≥ 500	600	82	0.200 ± 0.015	25
		125.0 ± 1.0	1300	0.7/1.0	≥ 500	600	300		
<b>3</b>	50/125 OM3	50.0 ± 2.5	850	2.5/3.0	≥ 1500	900	300	0.200 ± 0.015	25
		125.0 ± 1.0	1300	0.5/1.0	≥ 500	550	300		
<b>D</b>	50/125 OM3 Flex	50.0 ± 2.5	850	2.5/3.0	≥ 1500	900	300	0.200 ± 0.015	7.5
		125.0 ± 1.0	1300	0.5/1.0	≥ 500	550	300		
<b>6</b>	50/125 OM4	50.0 ± 2.5	850	2.5/3.0	≥ 6000	900	550	0.200 ± 0.015	25
		125.0 ± 1.0	1300	0.5/1.0	≥ 500	550	300		
<b>E</b>	50/125 OM4 Flex	50.0 ± 2.5	850	2.5/3.0	≥ 6000	900	550	0.200 ± 0.015	7.5
		125.0 ± 1.0	1300	0.5/1.0	≥ 500	550	300		





## Fiber Types

### Loose Tube Optical Characteristics

European Part Number Coding, Position 5	Fiber-Type	Mode-Field/ Cladding Diameter ( $\mu\text{m}$ )	Wave-length (nm)	Attenuation average/max. (dB/km)	Dispersion (ps/nm-km)	PMD (ps/km)	Cable Cut-off Wave-length (nm)
<b>Characteristics (cabled) Single-Mode • Matched-Cladded Optical Fibers according to ITU</b>							
8	9/125 G.652D OS2	9.2 $\pm$ 0.4	1310	0.32/0.40	$\leq$ 3.5	$\leq$ 0.2 <sup>A</sup>	$\leq$ 1260
		125.0 $\pm$ 0.7	1550	0.19/0.22	$\leq$ 18.0		
7	9/125 G.655 C & D	8.4 $\pm$ 0.6 125.0 $\pm$ 1.0	1550	0.25/0.30	3.5 – 8.5	$\leq$ 0.1 <sup>A</sup>	$\leq$ 1260

Note A: Link design value

European Part Number Coding, Position 5	Fiber-Type	Core/ Cladding Diameter ( $\mu\text{m}$ )	Wave-length (nm)	Attenuation average/max. (dB/km)	Bandwidth (MHz/km)	Ethernet Performance (m)		Num. Apert. ( $\mu\text{m}$ )	Refractive Index
						1 GBE	10 GBE		
<b>Characteristics (cabled) Multi-Mode • Graded-Index Optical Fibers according to IEC 60793</b>									
1	62.5/125 OM1	62.5 $\pm$ 2.5	850	2.7/3.2	$\geq$ 200	275	33	0.275 $\pm$ 0.015	1.495
		125.0 $\pm$ 1.0	1300	0.6/1.1	$\geq$ 600	550	300		1.490
2	50/125 OM2	50.0 $\pm$ 2.5	850	2.4/3.0	$\geq$ 500	600	82	0.200 $\pm$ 0.015	1.481
		125.0 $\pm$ 1.0	1300	0.7/1.0	$\geq$ 500	600	300		1.476
3	50/125 OM3	50.0 $\pm$ 2.5	850	2.5/3.0	$\geq$ 1500	900	300	0.200 $\pm$ 0.015	1.482
		125.0 $\pm$ 1.0	1300	0.5/1.0	$\geq$ 500	550	300.		1.477
6	50/125 OM4	50.0 $\pm$ 2.5	850	2.5/3.0	$\geq$ 6000	900	550	0.200 $\pm$ 0.015	1.482
		125.0 $\pm$ 1.0	1300	0.5/1.0	$\geq$ 500	550	300		1.477

## Indoor Buffered Fiber

GIOT\_01, GIOT\_G1  
GIOS\_01, GIOS\_G1

I-V  
I-K

### Applications

- Flexible terminating leads such as pigtailed, patch cords and test leads
- Support all computer network applications such as FDDI, Gigabit Ethernet and ATM
- Short distance applications for indoor use

### Features & Benefits

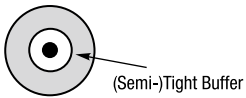
- (Semi-)Tight buffered fibers
- Colored fiber and colored buffer (\_G1)
- Natural fiber and colored buffer (\_01)
- These buffered fibers are all halogen free (FRNC/LSNH)

### Specifications

IEC 60794-1-2	
Crush Resistance (E3):	4 kN/m
Min. Bend Radius dynamic (E6):	25 x Ø
Min. Bend Radius static (E11):	35 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
– Transport/Storage	-40°C to +70°C
– Installation	-15°C to +50°C
– Operation	-40°C to +70°C
Stripping (E5), Semi-Tight:	
– Secondary coating	> 100 cm
– Primary and Secondary	> 10 mm
Stripping (E5), Tight:	
– Secondary coating	> 10 cm
– Primary and Secondary	> 10 mm
Other	
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2



## Cross Section



## Characteristics

Belden Part Number	Fiber Count	Colored	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
<b>GIOT_01</b>	1	Buffer	0.90 ± 0.05	0.97	3	3	19
<b>GIOT_G1</b>	1	Fiber and Buffer	0.90 ± 0.05	0.97	3	3	19
<b>GIOS_01</b>	1	Buffer	0.90 ± 0.05	0.94	3	3	19
<b>GIOS_G1</b>	1	Fiber and Buffer	0.90 ± 0.05	0.94	3	3	19

## Ordering Information

Fiber Type/ Buffer Type	Tight	Tight Colored Fiber	Semi-Tight	Semi-Tight Colored Fiber
62.5/125-OM1	<b>GIOT101</b>	<b>GIOT1G1</b>	<b>GIOS101</b>	<b>GIOS1G1</b>
50/125-OM2	<b>GIOT201</b>	<b>GIOT2G1</b>	<b>GIOS201</b>	<b>GIOS2G1</b>
50/125-OM3	<b>GIOT301</b>	<b>GIOT3G1</b>	<b>GIOS301</b>	<b>GIOS3G1</b>
50/125-OM3 Flex	<b>GIOTD01</b>	<b>GIOTDG1</b>	<b>GIOSD01</b>	<b>GIOSDG1</b>
50/125-OM4	<b>GIOT601</b>	<b>GIOT6G1</b>	<b>GIOS601</b>	<b>GIOS6G1</b>
50/125-OM4 Flex	<b>GIOTE01</b>	<b>GIOTEG1</b>	<b>GIOSE01</b>	<b>GIOSEG1</b>
9/125 ITU G.657A1	<b>GIOTA01</b>	<b>GIOTAG1</b>	<b>GIOSA01</b>	<b>GIOSAG1</b>
9/125 ITU G.657A2	<b>GIOTF01</b>	<b>GIOTFG1</b>	<b>GIOSF01</b>	<b>GIOSFG1</b>
9/125 ITU G.657B3	<b>GIOTI01</b>	<b>GIOTIG1</b>	<b>GIOSI01</b>	<b>GIOSIG1</b>
Std. plastic reel (non-returnable)	Ø 238 x 107 mm, Weight 0.4 kg			
Std. delivery length	2100 ± 100 m			

## Color Coding

White	Brown
Red	Black
Blue	Orange
Yellow	Turquoise
Green	Pink
Violet	Grey

## Indoor Simplex Cable

GIPT\_1,  
GIPS\_1

I-V(ZN)H  
I-K(ZN)H



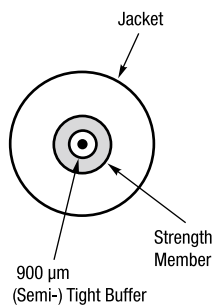
### Applications

- Flexible terminating leads such as pigtails, patch cords and test leads
- Support all computer network applications such as FDDI, Gigabit Ethernet and ATM
- Short distance applications for indoor use

### Features & Benefits

- All dielectric (metal-free) optical fiber leads allow for direct (de-tensioned) termination with connectors
- Semi-tight buffered optical fibers are easily strippable
- These cables are all halogen free (FRNC/LSNH)

### Cross Section



### Specifications

IEC 60794-1-2	
Crush Resistance (E3):	5 kN/m
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
– Transport/Storage	-40°C to +70°C
– Installation	-5°C to +50°C
– Operation	-40°C to +55°C
Stripping (E5), Semi-Tight:	
– Secondary coating	> 30 cm
– Primary and Secondary	> 10 mm
Stripping (E5), Tight:	
– Secondary coating	> 10 cm
– Primary and Secondary	> 10 mm
Other	
Flame Retardant:	IEC 60332-1
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density:	IEC 61034-2



## Characteristics

Tight Buffer	Semi-Tight Buffer	Fiber Count	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
GIPT*A1	GIPS*A1	1	1.6	2.9	140	70	53
GIPT*B1	GIPS*B1	1	1.8	3.2	140	70	57
GIPT*C1	GIPS*C1	1	2.0	4.3	140	70	64
GIPT*H1	GIPS*H1	1	2.1	4.4	200	100	69
GIPT*D1	GIPS*D1	1	2.4	5.6	200	100	78
GIPT*E1	GIPS*E1	1	2.8	7.2	200	100	93
GIPT*F1	GIPS*F1	1	3.0	9.1	200	100	104

Note: Buffer diameter  $0.90 \pm 0.05$  mm

## Ordering Information

Fiber Type/Diameter	1.6	1.8	2.0	2.1	2.4	2.8	3.0	Jacket Color
<b>GIPT_1 • Tight Buffer</b>								
62.5/125-OM1	GIPT1A1	GIPT1B1	GIPT1C1	GIPT1H1	GIPT1D1	GIPT1E1	GIPT1F1	Orange
50/125-OM2	GIPT2A1	GIPT2B1	GIPT2C1	GIPT2H1	GIPT2D1	GIPT2E1	GIPT2F1	Orange
50/125-OM3	GIPT3A1	GIPT3B1	GIPT3C1	GIPT3H1	GIPT3D1	GIPT3E1	GIPT3F1	Aqua
50/125-OM3 Flex	GIPTDA1	GIPTDB1	GIPTDC1	GIPTDH1	GIPTDD1	GIPTDE1	GIPTDF1	Aqua
50/125-OM4	GIPT6A1	GIPT6B1	GIPT6C1	GIPT6H1	GIPT6D1	GIPT6E1	GIPT6F1	Erika-Violet (RAL 4003)
50/125-OM4 Flex	GIPTEA1	GIPTEB1	GIPTEC1	GIPTEH1	GIPTE1	GIPTEE1	GIPTEF1	Erika-Violet (RAL 4003)
9/125 ITU G.657A1	GIPTAA1	GIPTAB1	GIPTAC1	GIPTAH1	GIPTAD1	GIPTAE1	GIPTAF1	Yellow
9/125 ITU G.657A2	GIPTFA1	GIPTFB1	GIPTFC1	GIPTFH1	GIPTFD1	GIPTFE1	GIPTFF1	Yellow
9/125 ITU G.657B3	GIPTIA1	GIPTIB1	GIPTIC1	GIPTIH1	GIPTID1	GIPTIE1	GIPTIF1	Yellow
<b>GIPS_1 • Semi-Tight Buffer</b>								
62.5/125-OM1	GIPS1A1	GIPS1B1	GIPS1C1	GIPS1H1	GIPS1D1	GIPS1E1	GIPS1F1	Orange
50/125-OM2	GIPS2A1	GIPS2B1	GIPS2C1	GIPS2H1	GIPS2D1	GIPS2E1	GIPS2F1	Orange
50/125-OM3	GIPS3A1	GIPS3B1	GIPS3C1	GIPS3H1	GIPS3D1	GIPS3E1	GIPS3F1	Aqua
50/125-OM3 Flex	GIPSDA1	GIPSDB1	GIPSDC1	GIPSDH1	GIPSD1	GIPSD1	GIPSD1	Aqua
50/125-OM4	GIPS6A1	GIPS6B1	GIPS6C1	GIPS6H1	GIPS6D1	GIPS6E1	GIPS6F1	Erika-Violet (RAL 4003)
50/125-OM4 Flex	GIPSEA1	GIPSEB1	GIPSEC1	GIPSEH1	GIPSED1	GIPSEE1	GIPSEF1	Erika-Violet (RAL 4003)
9/125 ITU G.657A1	GIPSA1	GIPSA1	GIPSA1	GIPSA1	GIPSA1	GIPSA1	GIPSA1	Yellow
9/125 ITU G.657A2	GIPSA1	GIPSA1	GIPSA1	GIPSA1	GIPSA1	GIPSA1	GIPSA1	Yellow
9/125 ITU G.657B3	GIPSA1	GIPSA1	GIPSA1	GIPSA1	GIPSA1	GIPSA1	GIPSA1	Yellow
<b>GIPT_1 • GIPS_1</b>								
Std. plastic reel (non-returnable)				Ø 500 x 265 mm, Weight 3.25 kg			-	
Std. delivery length				2100 ± 100 m			-	

## Color Coding



See the ordering information table above. Different colors available on request.

## Indoor Duplex Cable

GIPT\_2  
GIPS\_2

I-V(ZN)H  
I-K(ZN)H



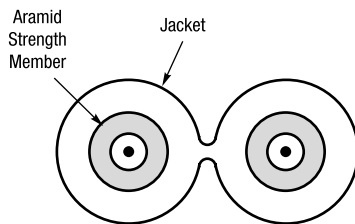
### Applications

- Flexible terminating leads such as pigtailed, patch cords and test leads
- Support all computer network applications such as FDDI, Gigabit Ethernet and ATM
- Short distance applications for indoor use

### Features & Benefits

- All dielectric (metal-free) optical fiber leads allow for direct (de-tensioned) termination with connectors
- Semi-tight buffered optical fibers are easily strippable
- These cables are all halogen free (FRNC/LSNH)

### Cross Section



### Specifications

IEC 60794-1-2	
Crush Resistance (E3):	5 kN/m
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
– Transport/Storage	-40°C to +70°C
– Installation	-5°C to +50°C
– Operation	-40°C to +55°C
Stripping (E5), Semi-Tight:	
– Secondary coating	> 30 cm
– Primary and Secondary	> 10 mm
Stripping (E5), Tight:	
– Secondary coating	> 10 cm
– Primary and Secondary	> 10 mm
Other	
Flame Retardant:	IEC 60332-1
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density:	IEC 61034-2



## Characteristics

Tight Buffer	Semi-Tight Buffer	Fiber Count	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
GIPT*A2	GIPS*A2	2	1.6 x 3.3	5.9	240	140	106
GIPT*B2	GIPS*B2	2	1.8 x 3.7	6.5	240	140	114
GIPT*C2	GIPS*C2	2	2.0 x 4.1	8.7	240	140	128
GIPT*H2	GIPS*H2	2	2.1 x 4.3	8.9	400	200	138
GIPT*D2	GIPS*D2	2	2.4 x 4.9	11.3	400	200	156
GIPT*E2	GIPS*E2	2	2.8 x 5.7	14.5	400	200	186
GIPT*F2	GIPS*F2	2	3.0 x 6.1	18.3	400	200	208

Note: Buffer diameter 0.90 ± 0.05 mm

## Ordering Information

Fiber Type/Diameter	1.6	1.8	2.0	2.1	2.4	2.8	3.0	Jacket Color
<b>GIPT_2 • Tight Buffer</b>								
62.5/125-OM1	GIPT1A2	GIPT1B2	GIPT1C2	GIPT1H2	GIPT1D2	GIPT1E2	GIPT1F2	Orange
50/125-OM2	GIPT2A2	GIPT2B2	GIPT2C2	GIPT2H2	GIPT2D2	GIPT2E2	GIPT2F2	Orange
50/125-OM3	GIPT3A2	GIPT3B2	GIPT3C2	GIPT3H2	GIPT3D2	GIPT3E2	GIPT3F2	Aqua
50/125-OM3 Flex	GIPTDA2	GIPTDB2	GIPTDC2	GIPTDH2	GIPTDD2	GIPTDE2	GIPTDF2	Aqua
50/125-OM4	GIPT6A2	GIPT6B2	GIPT6C2	GIPT6H2	GIPT6D2	GIPT6E2	GIPT6F2	Erika-Violet (RAL 4003)
50/125-OM4 Flex	GIPTEA2	GIPTEB2	GIPTEC2	GIPTEH2	GIPTED2	GIPTEE2	GIPTEF2	Erika-Violet (RAL 4003)
9/125 ITU G.657A1	GIPTAA2	GIPTAB2	GIPTAC2	GIPTAH2	GIPTAD2	GIPTAE2	GIPTAF2	Yellow
9/125 ITU G.657A2	GIPTFA2	GIPTFB2	GIPTFC2	GIPTFH2	GIPTFD2	GIPTFE2	GIPTFF2	Yellow
9/125 ITU G.657B3	GIPTIA2	GIPTIB2	GIPTIC2	GIPTIH2	GIPTID2	GIPTIE2	GIPTIF2	Yellow
<b>GIPS_2 • Semi-Tight Buffer</b>								
62.5/125-OM1	GIPS1A2	GIPS1B2	GIPS1C2	GIPS1H2	GIPS1D2	GIPS1E2	GIPS1F2	Orange
50/125-OM2	GIPS2A2	GIPS2B2	GIPS2C2	GIPS2H2	GIPS2D2	GIPS2E2	GIPS2F2	Orange
50/125-OM3	GIPS3A2	GIPS3B2	GIPS3C2	GIPS3H2	GIPS3D2	GIPS3E2	GIPS3F2	Aqua
50/125-OM3 Flex	GIPSDA2	GIPSDB2	GIPSDC2	GIPSDH2	GIPSDD2	GIPSD2E2	GIPSD2F2	Aqua
50/125-OM4	GIPS6A2	GIPS6B2	GIPS6C2	GIPS6H2	GIPS6D2	GIPS6E2	GIPS6F2	Erika-Violet (RAL 4003)
50/125-OM4 Flex	GIPSEA2	GIPSEB2	GIPSEC2	GIPSEH2	GIPSED2	GIPSEE2	GIPSEF2	Erika-Violet (RAL 4003)
9/125 ITU G.657A1	GIPSA2A2	GIPSA2B2	GIPSA2C2	GIPSA2H2	GIPSA2D2	GIPSA2E2	GIPSA2F2	Yellow
9/125 ITU G.657A2	GIPSA2FA2	GIPSA2FB2	GIPSA2FC2	GIPSA2FH2	GIPSA2FD2	GIPSA2FE2	GIPSA2FF2	Yellow
9/125 ITU G.657B3	GIPSA2IA2	GIPSA2IB2	GIPSA2IC2	GIPSA2IH2	GIPSA2ID2	GIPSA2IE2	GIPSA2IF2	Yellow
<b>GIPT_2 • GIPS_2</b>								
Std. plastic reel (non-returnable)				Ø 500 x 265 mm, Weight 3.25 kg			-	
Std. delivery length				2100 ± 100 m			-	

## Color Coding



See the ordering information table above. Different colors available on request.

## Indoor Duplex Cable Round

GIPT\_ER, GIPT\_FR  
GIPS\_ER, GIPS\_FR

I-V(ZN)H  
I-K(ZN)H



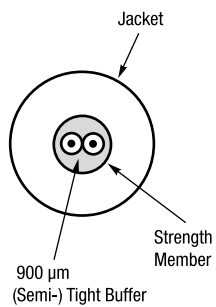
### Applications

- Flexible terminating leads such as pigtails, patch cords and test leads
- Support all computer network applications such as FDDI, Gigabit Ethernet and ATM
- Short distance applications for indoor use

### Features & Benefits

- All dielectric (metal-free) optical fiber leads permitting direct (de-tensioned) termination with connectors
- Semi-tight buffered optical fibers are easily strippable
- These cables are all halogen free (FRNC/LSNH)

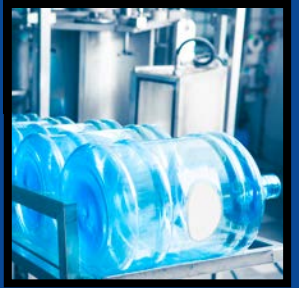
### Cross Section



### Specifications

IEC 60794-1-2	
Crush Resistance (E3):	5 kN/m
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
– Transport/Storage	-30°C to +70°C
– Installation	-5°C to +50°C
– Operation	-5°C to +55°C
Stripping (E5), Semi-Tight:	
– Secondary coating	> 30 cm
– Primary and Secondary	> 10 mm
Stripping (E5), Tight:	
– Secondary coating	> 10 cm
– Primary and Secondary	> 10 mm
Other	
Flame Retardant:	IEC 60332-1
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density:	IEC 61034-2





## Characteristics

Tight Buffer	Semi-Tight Buffer	Fiber Count	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
GIPT*ER	GPS*ER	2	2.8	7.3	200	100	95
GIPT*FR	GPS*FR	2	3.0	9.2	200	100	106

Note: Buffer diameter  $0.90 \pm 0.05$  mm

## Ordering Information

Fiber Type/Diameter	2.8	3.0	Jacket Color
<b>GIPT_ER • Tight Buffer</b>			
62.5/125-OM1	GIPT1ER	GIPT1FR	Orange
50/125-OM2	GIPT2ER	GIPT2FR	Orange
50/125-OM3	GIPT3ER	GIPT3FR	Aqua
50/125-OM3 Flex	GIPTDER	GIPTDFR	Aqua
50/125-OM4	GIPT6ER	GIPT6FR	Erika-Violet (RAL 4003)
50/125-OM4 Flex	GIPTER	GIPTFR	Erika-Violet (RAL 4003)
9/125 ITU G.657A1	GIPTAER	GIPTAFR	Yellow
9/125 ITU G.657A2	GIPTFER	GIPTFFR	Yellow
9/125 ITU G.657B3	GIPTIER	GIPTIFR	Yellow
<b>GPS_ER • Semi-Tight Buffer</b>			
62.5/125-OM1	GPS1ER	GPS1FR	Orange
50/125-OM2	GPS2ER	GPS2FR	Orange
50/125-OM3	GPS3ER	GPS3FR	Aqua
50/125-OM3 Flex	GPSDER	GPSDFR	Aqua
50/125-OM4	GPS6ER	GPS6FR	Erika-Violet (RAL 4003)
50/125-OM4 Flex	GIPSEER	GIPSEFR	Erika-Violet (RAL 4003)
9/125 ITU G.657A1	GIPSAER	GIPSAFR	Yellow
9/125 ITU G.657A2	GIPSEFR	GIPSEFR	Yellow
9/125 ITU G.657B3	GIPSIER	GIPSIFR	Yellow
<b>GIPT_ER • GPS_ER</b>			
Std. plastic reel (non-returnable)	Ø 500 x 265 mm, Weight 3.25 kg		–
Std. delivery length	2100 ± 100 m		–

## Color Coding

See the ordering information table above. Different colors available on request.

## Indoor Heavy Duplex Cable

GIPT\_H  
GIPS\_H

I-V(ZN)HH  
I-K(ZN)HH



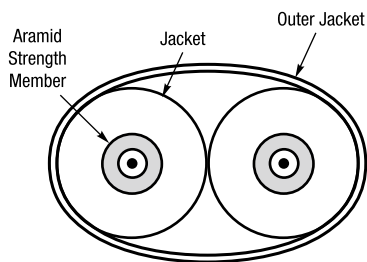
### Applications

- Flexible terminating leads such as pigtailed, patch cords and test leads
- Support all computer network applications such as FDDI, Gigabit Ethernet and ATM
- Short distance applications for indoor use

### Features & Benefits

- All dielectric (metal-free) optical fiber leads allow for direct (de-tensioned) termination with connectors
- Semi-tight buffered optical fibers are easily strippable
- These cables are all halogen free (FRNC/LSNH)

### Cross Section



### Specifications

IEC 60794-1-2	
Crush Resistance (E3):	5 kN/m
Min. Bend Radius dynamic (E6):	15 x Ø
Min. Bend Radius static (E11):	10 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
– Transport/Storage	-40°C to +70°C
– Installation	-5°C to +50°C
– Operation	-40°C to +55°C
Stripping (E5), Semi-Tight:	
– Secondary coating	> 30 cm
– Primary and Secondary	> 10 mm
Stripping (E5), Tight:	
– Secondary coating	> 10 cm
– Primary and Secondary	> 10 mm
Other	
Flame Retardant:	IEC 60332-1
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density:	IEC 61034-2



## Characteristics

Tight Buffer	Semi-Tight Buffer	Fiber Count	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
GIPT*AH	GIPS*AH	2	2.6 x 4.3	23	200	100	365
GIPT*BH	GIPS*BH	2	2.8 x 4.7	24	200	100	370
GIPT*CH	GIPS*CH	2	3.0 x 5.1	28	600	300	379
GIPT*HH	GIPS*HH	2	3.1 x 5.3	31	600	300	395
GIPT*DH	GIPS*DH	2	3.4 x 5.9	37	800	400	422
GIPT*EH	GIPS*EH	2	3.8 x 6.7	43	800	400	455
GIPT*FH	GIPS*FH	2	4.0 x 7.1	50	800	400	487

Note: Buffer diameter 0.90 ± 0.05 mm

## Ordering Information

Fiber Type/Diameter	1.6	1.8	2.0	2.1	2.4	2.8	3.0	Jacket Color
<b>GIPT_H • Tight Buffer</b>								
62.5/125-OM1	GIPT1AH	GIPT1BH	GIPT1CH	GIPT1HH	GIPT1DH	GIPT1EH	GIPT1FH	Orange
50/125-OM2	GIPT2AH	GIPT2BH	GIPT2CH	GIPT2HH	GIPT2DH	GIPT2EH	GIPT2FH	Orange
50/125-OM3	GIPT3AH	GIPT3BH	GIPT3CH	GIPT3HH	GIPT3DH	GIPT3EH	GIPT3FH	Aqua
50/125-OM3 Flex	GIPTDAH	GIPTDBH	GIPTDCH	GIPTDHH	GIPTDDH	GIPTDEH	GIPTDFH	Aqua
50/125-OM4	GIPT6AH	GIPT6BH	GIPT6CH	GIPT6HH	GIPT6DH	GIPT6EH	GIPT6FH	Erika-Violet (RAL 4003)
50/125-OM4 Flex	GIPT6AH	GIPT6BH	GIPT6CH	GIPT6HH	GIPT6DH	GIPT6EH	GIPT6FH	Erika-Violet (RAL 4003)
9/125 ITU G.657A1	GIPTAAH	GIPTABH	GIPTACH	GIPTAHH	GIPTADH	GIPTAEH	GIPTAFH	Yellow
9/125 ITU G.657A2	GIPTFAH	GIPTFBH	GIPTFCH	GIPTFHH	GIPTFDH	GIPTFEH	GIPTFFH	Yellow
9/125 ITU G.657B3	GIPTIAH	GIPTIBH	GIPTICH	GIPTIHH	GIPTIDH	GIPTIEH	GIPTIFH	Yellow
<b>GIPS_H • Semi-Tight Buffer</b>								
62.5/125-OM1	GIPS1AH	GIPS1BH	GIPS1CH	GIPS1HH	GIPS1DH	GIPS1EH	GIPS1FH	Orange
50/125-OM2	GIPS2AH	GIPS2BH	GIPS2CH	GIPS2HH	GIPS2DH	GIPS2EH	GIPS2FH	Orange
50/125-OM3	GIPS3AH	GIPS3BH	GIPS3CH	GIPS3HH	GIPS3DH	GIPS3EH	GIPS3FH	Aqua
50/125-OM3 Flex	GIPSDAH	GIPSDBH	GIPSDCH	GIPSDHH	GIPSDDH	GIPSDEH	GIPSDFH	Aqua
50/125-OM4	GIPS6AH	GIPS6BH	GIPS6CH	GIPS6HH	GIPS6DH	GIPS6EH	GIPS6FH	Erika-Violet (RAL 4003)
50/125-OM4 Flex	GIPSEAH	GIPSEBH	GIPSECH	GIPSEHH	GIPSEDH	GIPSEEH	GIPSEFH	Erika-Violet (RAL 4003)
9/125 ITU G.657A1	GIPSAAH	GIPSABH	GIPSACH	GIPSAHH	GIPSADH	GIPSAEH	GIPSAFH	Yellow
9/125 ITU G.657A2	GIPSF AH	GIPSF BH	GIPSF CH	GIPSF HH	GIPSF DH	GIPSF EH	GIPSF FH	Yellow
9/125 ITU G.657B3	GIPSIAH	GIPSIBH	GIPSICH	GIPSIIH	GIPSIDH	GIPSIEH	GIPSIFH	Yellow
<b>GIPT_H • GIPS_H</b>								
Std. plastic reel (non-returnable)				Ø 500 x 265 mm, Weight 3.25 kg				-
Std. delivery length				2100 ± 100 m				-

## Color Coding



See the ordering information table above. Different colors available on request.

## Indoor Breakout Kit Cable (LSNH)

GIPZ

I-K(ZN)H



### Applications

- Simplex with furcation tube
- Short distance applications for indoor use

### Features & Benefits

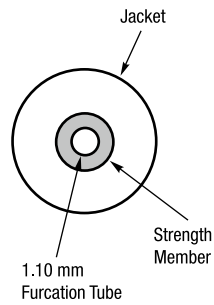
- All dielectric (metal-free) optical fiber leads allow for direct (de-tensioned) termination with connectors
- Fiber-Push-in length of 1.5 meter
- These cables are all halogen free (FRNC/LSNH)

### Specifications

IEC 60794-1-2	
Crush Resistance (E3):	4 kN/m
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Temperature Range (F1):	
– Transport/Storage	-30°C to +70°C
– Installation	-5°C to +50°C
– Operation	-5°C to +55°C
Other	
Flame Retardant:	IEC 60332-1
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density:	IEC 61034-2



## Cross Section



## Characteristics

Tight Buffer	Fiber Count	Diameter Furcation Tube (mm)	Diameter Jacket (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
GIPZ0E0	0	1.1/1.7	2.8	7.8	200	100	93
GIPZ0F0	0	1.1/1.7	3.0	9.1	200	100	104

## Ordering Information

Fiber Type/Diameter	2.8	3.0
1 furcation tube	<b>GIPZ0E0</b>	<b>GIPZ0F0</b>
Std. plastic reel (non-returnable)	Ø 500 x 265 mm, Weight 3.25 kg	
Std. delivery length	2100 ± 100 m	

## Color Coding

Orange
Aqua
Erika-Violet (RAL 4003)
Yellow

## Universal Breakout Kit Cable (PUR)

GMPZ

I-K(ZN)11Y



### Applications

- Simplex with furcation tube
- Short distance applications

### Features & Benefits

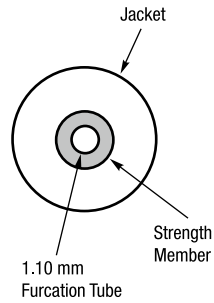
- All dielectric (metal-free) optical fiber leads allow for direct (de-tensioned) termination with connectors
- Fiber-Push-in length of 1.5 meter
- Extremely strong, rugged, for harsh environments

### Specifications

IEC 60794-1-2	
Crush Resistance (E3):	4 kN/m
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Temperature Range (F1):	
– Transport/Storage	-30°C to +70°C
– Installation	-5°C to +50°C
– Operation	-30°C to +70°C
Other	
Flame Retardant:	IEC 60332-1
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2



## Cross Section



## Characteristics

Tight Buffer	Fiber Count	Diameter Furcation Tube (mm)	Diameter Jacket (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
<b>GMPZ0E0</b>	0	1.1/1.7	2.8	7.8	200	100	93
<b>GMPZ0F0</b>	0	1.1/1.7	3.0	9.1	200	100	104

## Ordering Information

Fiber Type/Diameter	2.8	3.0
1 furcation tube	<b>GMPZ0E0</b>	<b>GMPZ0F0</b>
Std. plastic reel (non-returnable)	Ø 500 x 265 mm, Weight 3.25 kg	
Std. delivery length	2100 ± 100 m	

## Color Coding

Orange
Aqua
Erika-Violet (RAL 4003)
Yellow

## Indoor Breakout

GIBT  
GIBS

I-V(ZN)HH  
I-K(ZN)HH



### Applications

- Structured (premises) wiring systems: building backbone (riser) and/or horizontal cabling (Fiber To The Desk)
- Support all computer network applications such as FDDI, Gigabit Ethernet and ATM

### Features & Benefits

- Available in sizes from 2 to 24 fibers
- The individual single fiber units (of which these metal-free breakout cables are composed) permit direct (de-tensioned) terminations with separate single-way connectors, eliminating the splicing of pigtails and/or breakout kits
- Semi-tight buffered optical fibers are easily strippable
- Length marking in meters for easy determination of the cable length
- Full dielectric construction, no grounding required

### Specifications

#### IEC 60794-1-2

#### Crush Resistance (E3):

– Cable	7.5 kN/m
– Fiber Unit	4 kN/m

Min. Bend Radius dynamic (E6):	15 x Ø
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Min. Bend Radius static (E11):	10 x Ø
--------------------------------	--------

Min. Bend Radius fibers:	25 mm
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#### Temperature Range (F1):

– Transport/Storage	-30°C to +70°C
– Installation	-5°C to +50°C
– Operation	-5°C to +55°C

#### Stripping (E5), Semi-Tight:

– Secondary coating	> 30 cm
– Primary and Secondary	> 10 mm

#### Stripping (E5), Tight:

– Secondary coating	> 10 cm
– Primary and Secondary	> 10 mm

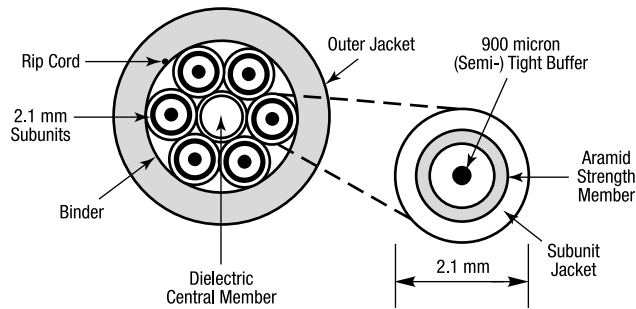
#### Other

Flame Retardant:	IEC 60332-3-24
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density:	IEC 61094-2





## Cross Section



## Characteristics

Tight Buffer	Semi-Tight Buffer	Fiber Count	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
GIBT*02	GIBS*02	2	5.3	25	800	400	379
GIBT*04	GIBS*04	4	6.2	31	800	400	507
GIBT*06	GIBS*06	6	8.0	59	1200	600	928
GIBT*08	GIBS*08	8	9.4	77	1600	800	1235
GIBT*12	GIBS*12	12	10.5	87	2400	1200	1424
GIBT*24	GIBS*24	24	14.3	175	4800	2400	2677

Note: Buffer diameter  $0.90 \pm 0.05$  mm

## Ordering Information

Fiber Type/Count	2	4	6	8	12	24	Jacket Color
<b>GIBT • Tight Buffer</b>							
62.5/125-OM1	GIBT102	GIBT104	GIBT106	GIBT108	GIBT112	GIBT124	Orange
50/125-OM2	GIBT202	GIBT204	GIBT206	GIBT208	GIBT212	GIBT224	Orange
50/125-OM3	GIBT302	GIBT304	GIBT306	GIBT308	GIBT312	GIBT324	Aqua
50/125-OM3 Flex	GIBTD02	GIBTD04	GIBTD06	GIBTD08	GIBTD12	GIBTD24	Aqua
50/125-OM4	GIBT602	GIBT604	GIBT606	GIBT608	GIBT612	GIBT624	Erika-Violet (RAL 4003)
50/125-OM4 Flex	GIBTE02	GIBTE04	GIBTE06	GIBTE08	GIBTE12	GIBTE24	Erika-Violet (RAL 4003)
9/125 ITU G.657A1	GIBTA02	GIBTA04	GIBTA06	GIBTA08	GIBTA12	GIBTA24	Yellow
9/125 ITU G.657A2	GIBTF02	GIBTF04	GIBTF06	GIBTF08	GIBTF12	GIBTF24	Yellow
9/125 ITU G.657B3	GIBTI02	GIBTI04	GIBTI06	GIBTI08	GIBTI12	GIBTI24	Yellow
<b>GIBS • Semi-Tight Buffer</b>							
62.5/125-OM1	GIBS102	GIBS104	GIBS106	GIBS108	GIBS112	GIBS124	Orange
50/125-OM2	GIBS202	GIBS204	GIBS206	GIBS208	GIBS212	GIBS224	Orange
50/125-OM3	GIBS302	GIBS304	GIBS306	GIBS308	GIBS312	GIBS324	Aqua
50/125-OM3 Flex	GIBSD02	GIBSD04	GIBSD06	GIBSD08	GIBSD12	GIBSD24	Aqua
50/125-OM4	GIBS602	GIBS604	GIBS606	GIBS608	GIBS612	GIBS624	Erika-Violet (RAL 4003)
50/125-OM4 Flex	GIBSE02	GIBSE04	GIBSE06	GIBSE08	GIBSE12	GIBSE24	Erika-Violet (RAL 4003)
9/125 ITU G.657A1	GIBSA02	GIBSA04	GIBSA06	GIBSA08	GIBSA12	GIBSA24	Yellow
9/125 ITU G.657A2	GIBSF02	GIBSF04	GIBSF06	GIBSF08	GIBSF12	GIBSF24	Yellow
9/125 ITU G.657B3	GIBSI02	GIBSI04	GIBSI06	GIBSI08	GIBSI12	GIBSI24	Yellow
<b>GIBT • GIBS</b>							
Std. plastic reel (non-returnable)	Ø 800 x 475 mm, Weight 7.65 kg		Ø 1000 x 530 mm, Weight 18.0 kg		Ø 1250 x 688 mm, Weight 93.0 kg		-
Std. delivery length	2100 ± 100 m		2100 ± 100 m		2100 ± 100 m		-

## Universal Breakout

GUBT

A/I-VQ(ZN)HH



### Applications

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

### Features & Benefits

- Available in sizes from 2 to 8 fibers
- The individual single fiber units (of which these metal-free breakout cables are composed) permit direct (de-tensioned) terminations with separate single-way connectors, which eliminating the splicing of pigtails and/or breakout kits
- Length marking in meters for easy determination of the cable length
- Full dielectric construction, no grounding required

### Specifications

#### IEC 60794-1-2

#### Crush Resistance (E3):

- Cable	30 kN/m
- Fiber Unit	8 kN/m

Min. Bend Radius dynamic (E6): 15 x Ø

Min. Bend Radius static (E11): 10 x Ø

Min. Bend Radius fibers: 25 mm

#### Temperature Range (F1):

- Transport/Storage	-30°C to +70°C
- Installation	-5°C to +50°C
- Operation	-30°C to +70°C

#### Stripping (E5), Tight:

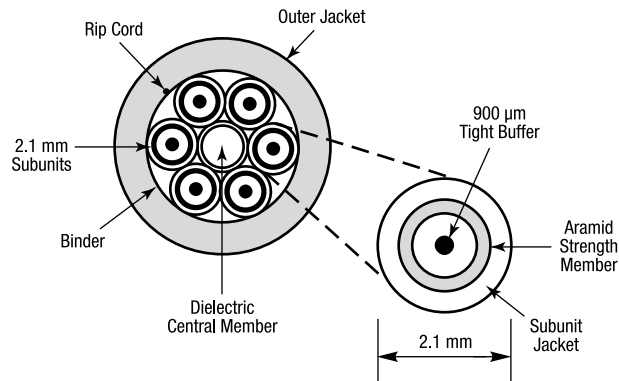
- Secondary coating	> 10 cm
- Primary and Secondary	> 10 mm

#### Other

Flame Retardant:	IEC 60332-3-24
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density:	IEC 61034-2



## Cross Section



## Characteristics

Tight Buffer	Fiber Count	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
GUBT*02	2	7.2	42	1200	600	975
GUBT*04	4	7.2	42	1200	600	507
GUBT*06	6	8.0	59	2800	1400	928
GUBT*08	8	9.4	77	4000	2000	1235

Note: Buffer diameter  $0.90 \pm 0.05$  mm

## Ordering Information

Fiber Type/Court	2	4	6	8	Jacket Color
62.5/125-OM1	GUBT102	GUBT104	GUBT106	GUBT108	Orange
50/125-OM2	GUBT202	GUBT204	GUBT206	GUBT208	Orange
50/125-OM3	GUBT302	GUBT304	GUBT306	GUBT308	Aqua
50/125-OM3 Flex	GUBTD02	GUBTD04	GUBTD06	GUBTD08	Aqua
50/125-OM4	GUBT602	GUBT604	GUBT606	GUBT608	Erika-Violet (RAL 4003)
50/125-OM4 Flex	GUBTE02	GUBTE04	GUBTE06	GUBTE08	Erika-Violet (RAL 4003)
9/125 ITU G.657A1	GUBTA02	GUBTA04	GUBTA06	GUBTA08	Yellow
9/125 ITU G.657A2	GUBTF02	GUBTF04	GUBTF06	GUBTF08	Yellow
9/125 ITU G.657B3	GUBTI02	GUBTI04	GUBTI06	GUBTI08	Yellow
Std. plywood reel (non-returnable)	Ø 800 x 475 mm, Weight 7.65 kg		Ø 1000 x 530 mm, Weight 18 kg		-
Std. delivery length	2100 ± 100 m		2100 ± 100 m		-

## Indoor Mini-Breakout

**GIMT**  
**GIMS**

**I-V(ZN)H**  
**I-K(ZN)H**



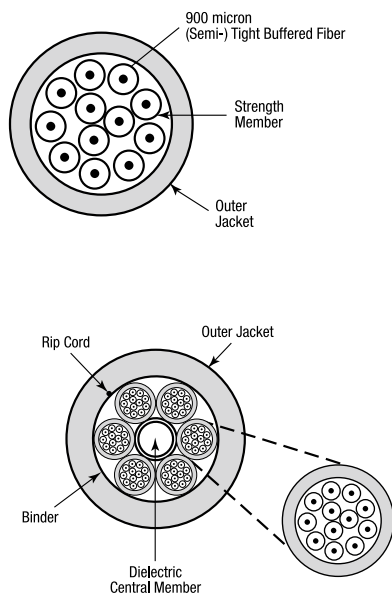
### Applications

- Structured (premises) wiring systems: building backbone (riser) and/or horizontal cabling (Fiber To The Desk)
- Support all computer network applications such as FDDI, Gigabit Ethernet and ATM

### Features & Benefits

- Available in sizes from 2 to 72 fibers
- 900 µm buffered fiber allows for use of field-installable connectors
- Semi-tight buffered optical fibers are easily strippable
- Length marking in meters for easy determination of the cable length
- Full dielectric construction, no grounding required

### Cross Section



### Specifications

IEC 60794-1-2	
Crush Resistance (E3):	4 kN/m
Min. Bend Radius dynamic (E6):	15 x Ø
Min. Bend Radius static (E11):	10 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
– Transport/Storage	-30°C to +70°C
– Installation	-5°C to +50°C
– Operation	-30°C to +55°C
Stripping (E5), Semi-Tight:	
– Secondary coating	> 30 cm
– Primary and Secondary	> 10 mm
Stripping (E5), Tight:	
– Secondary coating	> 10 cm
– Primary and Secondary	> 10 mm
Other	
Flame Retardant:	IEC 60332-3-24
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density:	IEC 61034-2



## Characteristics

Tight Buffer	Semi-Tight Buffer	Fiber Count	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
GIMT*02	GIMS*02	1 x 2	4.0	16	800	400	296
GIMT*04	GIMS*04	1 x 4	4.8	19	800	400	296
GIMT*06	GIMS*06	1 x 6	5.3	23	900	450	347
GIMT*08	GIMS*08	1 x 8	5.3	25	900	450	371
GIMT*12	GIMS*12	1 x 12	7.0	40	1000	500	622
GIMT*16	GIMS*16	1 x 16	8.0	49	1000	500	845
GIMT*24	GIMS*24	1 x 24	9.0	67	1200	600	1082
GIMT*36	GIMS*36	3 x 12	17.0	224	5400	2700	2132
GIMT*48	GIMS*48	4 x 12	18.0	260	5400	2700	2700
GIMT*72	GIMS*72	6 x 12	23.0	398	6000	3000	3900

Note: Buffer diameter 0.90 ± 0.05 mm

## Ordering Information

Fiber Type/Count	2	4	6	8	12	16	24	36	48	72	Jacket Color
<b>GIMT • Tight Buffer</b>											
62.5/125-OM1	GIMT102	GIMT104	GIMT106	GIMT108	GIMT112	GIMT116	GIMT124	GIMT136	GIMT148	GIMT172	Orange
50/125-OM2	GIMT202	GIMT204	GIMT206	GIMT208	GIMT212	GIMT216	GIMT224	GIMT236	GIMT248	GIMT272	Orange
50/125-OM3	GIMT302	GIMT304	GIMT306	GIMT308	GIMT312	GIMT316	GIMT324	GIMT336	GIMT348	GIMT372	Aqua
50/125-OM3 Flex	GIMTD02	GIMTD04	GIMTD06	GIMTD08	GIMTD12	GIMTD16	GIMTD24	GIMTD36	GIMTD48	GIMTD72	Aqua
50/125-OM4	GIMT602	GIMT604	GIMT606	GIMT608	GIMT612	GIMT616	GIMT624	GIMT636	GIMT648	GIMT672	Erika-Violet (RAL 4003)
50/125-OM4 Flex	GIMTE02	GIMTE04	GIMTE06	GIMTE08	GIMTE12	GIMTE16	GIMTE24	GIMTE36	GIMTE48	GIMTE72	Erika-Violet (RAL 4003)
9/125 ITU G.657A1	GIMTA02	GIMTA04	GIMTA06	GIMTA08	GIMTA12	GIMTA16	GIMTA24	GIMTA36	GIMTA48	GIMTA72	Yellow
9/125 ITU G.657A2	GIMTF02	GIMTF04	GIMTF06	GIMTF08	GIMTF12	GIMTF16	GIMTF24	GIMTF36	GIMTF48	GIMTF72	Yellow
9/125 ITU G.657B3	GIMTI02	GIMTI04	GIMTI06	GIMTI08	GIMTI12	GIMTI16	GIMTI24	GIMTI36	GIMTI48	GIMTI72	Yellow
<b>GIMS • Semi-Tight Buffer</b>											
62.5/125-OM1	GIMS102	GIMS104	GIMS106	GIMS108	GIMS112	GIMS116	GIMS124	GIMS136	GIMS148	GIMS172	Orange
50/125-OM2	GIMS202	GIMS204	GIMS206	GIMS208	GIMS212	GIMS216	GIMS224	GIMS236	GIMS248	GIMS272	Orange
50/125-OM3	GIMS302	GIMS304	GIMS306	GIMS308	GIMS312	GIMS316	GIMS324	GIMS336	GIMS348	GIMS372	Aqua
50/125-OM3 Flex	GIMSD02	GIMSD04	GIMSD06	GIMSD08	GIMSD12	GIMSD16	GIMSD24	GIMSD36	GIMSD48	GIMSD72	Aqua
50/125-OM4	GIMS602	GIMS604	GIMS606	GIMS608	GIMS612	GIMS616	GIMS624	GIMS636	GIMS648	GIMS672	Erika-Violet (RAL 4003)
50/125-OM4 Flex	GIMSE02	GIMSE04	GIMSE06	GIMSE08	GIMSE12	GIMSE16	GIMSE24	GIMSE36	GIMSE48	GIMSE72	Erika-Violet (RAL 4003)
9/125 ITU G.657A1	GIMSA02	GIMSA04	GIMSA06	GIMSA08	GIMSA12	GIMSA16	GIMSA24	GIMSA36	GIMSA48	GIMSA72	Yellow
9/125 ITU G.657A2	GIMSF02	GIMSF04	GIMSF06	GIMSF08	GIMSF12	GIMSF16	GIMSF24	GIMSF36	GIMSF48	GIMSF72	Yellow
9/125 ITU G.657B3	GIMSI02	GIMSI04	GIMSI06	GIMSI08	GIMSI12	GIMSI16	GIMSI24	GIMSI36	GIMSI48	GIMSI72	Yellow
<b>GIMT • GIMS</b>											
Std. plywood reel (non-returnable)	Ø 560 x 336 mm, Weight 4.25 kg		Ø 800 x 475 mm, Weight 7.65 kg		Ø 1000 x 530 mm, Weight 18.0 kg		Ø 1000 x 530 mm, Weight 18.0 kg		Ø 1250 x 688mm, Weight 93.0 kg		-
Std. delivery length	2100 ± 100 m		2100 ± 100 m		2100 ± 100 m		650 ± 100 m		650 ± 100 m		-

## Fiber Color Coding

1	White	5	Green	9	Orange	13	White + ring	17	Green + ring	21	Orange + ring
2	Red	6	Violet	10	Turquoise	14	Red + ring	18	Violet + ring	22	Turquoise + ring
3	Blue	7	Brown	11	Pink	15	Blue + ring	19	Brown + ring	23	Pink + ring
4	Yellow	8	Black	12	Grey	16	Yellow + ring	20	Black + ring	24	Grey + ring

## Universal Mini-Breakout

**GUMT  
GUMS**

**A/I-V(ZN)H  
A/I-K(ZN)H**



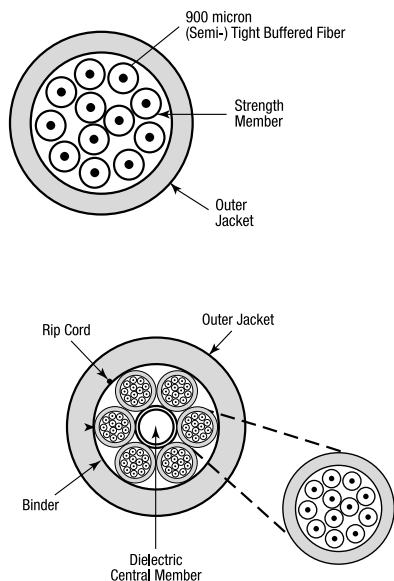
### Applications

- 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

- Available in sizes from 2 to 72 fibers
- 900 µm buffered fiber allows for use of field-installable connectors
- Semi-tight buffered optical fibers are easily strippable
- Length marking in meters for easy determination of the cable length
- Full dielectric construction, no grounding required
- 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.

### Cross Section



### Specifications

IEC 60794-1-2	
Crush Resistance (E3):	4 kN/m
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
– Transport/Storage	-30°C to +70°C
– Installation	-5°C to +50°C
– Operation	-30°C to +70°C
Watertightness (F5):	Pass
Stripping (E5), Semi-Tight:	
– Secondary coating	> 30 cm
– Primary and Secondary	> 10 mm
Stripping (E5), Tight:	
– Secondary coating	> 10 cm
– Primary and Secondary	> 10 mm
Other	
Flame Retardant:	IEC 60332-3-24
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density:	IEC 61034-2



## Characteristics

Tight Buffer	Semi-Tight Buffer	Fiber Count	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
GUMT*02	GUMS*02	1 x 2	5.4	26	800	400	296
GUMT*04	GUMS*04	1 x 4	5.4	26	800	400	296
GUMT*06	GUMS*06	1 x 6	5.9	30	900	450	347
GUMT*08	GUMS*08	1 x 8	5.9	32	900	450	371
GUMT*12	GUMS*12	1 x 12	7.6	45	1000	500	622
GUMT*16	GUMS*16	1 x 16	8.6	53	1000	500	845
GUMT*24	GUMS*24	1 x 24	9.6	74	1200	600	1082
GUMT*36	GUMS*36	3 x 12	19.7	246	5400	2700	2345
GUMT*48	GUMS*48	4 x 12	19.7	286	5400	2700	2970
GUMT*72	GUMS*72	6 x 12	24.6	438	6000	3000	4290

Note: Buffer diameter 0.90 ± 0.05 mm

## Ordering Information

Fiber Type/Count	2	4	6	8	12	16	24	36	48	72	Jacket Color
<b>GUMT • Tight Buffer</b>											
62.5/125-OM1	GUMT102	GUMT104	GUMT106	GUMT108	GUMT112	GUMT116	GUMT124	GUMT136	GUMT148	GUMT172	Orange
50/125-OM2	GUMT202	GUMT204	GUMT206	GUMT208	GUMT212	GUMT216	GUMT224	GUMT236	GUMT248	GUMT272	Orange
50/125-OM3	GUMT302	GUMT304	GUMT306	GUMT308	GUMT312	GUMT316	GUMT324	GUMT336	GUMT348	GUMT372	Aqua
50/125-OM3 Flex	GUMTD02	GUMTD04	GUMTD06	GUMTD08	GUMTD12	GUMTD16	GUMTD24	GUMTD36	GUMTD48	GUMTD72	Aqua
50/125-OM4	GUMT602	GUMT604	GUMT606	GUMT608	GUMT612	GUMT616	GUMT624	GUMT636	GUMT648	GUMT672	Erika-Violet (RAL 4003)
50/125-OM4 Flex	GUMTE02	GUMTE04	GUMTE06	GUMTE08	GUMTE12	GUMTE16	GUMTE24	GUMTE36	GUMTE48	GUMTE72	Erika-Violet (RAL 4003)
9/125 ITU G.657A1	GUMTA02	GUMTA04	GUMTA06	GUMTA08	GUMTA12	GUMTA16	GUMTA24	GUMTA36	GUMTA48	GUMTA72	Yellow
9/125 ITU G.657A2	GUMTF02	GUMTF04	GUMTF06	GUMTF08	GUMTF12	GUMTF16	GUMTF24	GUMTF36	GUMTF48	GUMTF72	Yellow
9/125 ITU G.657B3	GUMTI02	GUMTI04	GUMTI06	GUMTI08	GUMTI12	GUMTI16	GUMTI24	GUMTI36	GUMTI48	GUMTI72	Yellow
<b>GUMS • Semi-Tight Buffer</b>											
62.5/125-OM1	GUMS102	GUMS104	GUMS106	GUMS108	GUMS112	GUMS116	GUMS124	GUMS136	GUMS148	GUMS172	Orange
50/125-OM2	GUMS202	GUMS204	GUMS206	GUMS208	GUMS212	GUMS216	GUMS224	GUMS236	GUMS248	GUMS272	Orange
50/125-OM3	GUMS302	GUMS304	GUMS306	GUMS308	GUMS312	GUMS316	GUMS324	GUMS336	GUMS348	GUMS372	Aqua
50/125-OM3 Flex	GUMSD02	GUMSD04	GUMSD06	GUMSD08	GUMSD12	GUMSD16	GUMSD24	GUMSD36	GUMSD48	GUMSD72	Aqua
50/125-OM4	GUMS602	GUMS604	GUMS606	GUMS608	GUMS612	GUMS616	GUMS624	GUMS636	GUMS648	GUMS672	Erika-Violet (RAL 4003)
50/125-OM4 Flex	GUMSE02	GUMSE04	GUMSE06	GUMSE08	GUMSE12	GUMSE16	GUMSE24	GUMSE36	GUMSE48	GUMSE72	Erika-Violet (RAL 4003)
9/125 ITU G.657A1	GUMSA02	GUMSA04	GUMSA06	GUMSA08	GUMSA12	GUMSA16	GUMSA24	GUMSA36	GUMSA48	GUMSA72	Yellow
9/125 ITU G.657A2	GUMSF02	GUMSF04	GUMSF06	GUMSF08	GUMSF12	GUMSF16	GUMSF24	GUMSF36	GUMSF48	GUMSF72	Yellow
9/125 ITU G.657B3	GUMSI02	GUMSI04	GUMSI06	GUMSI08	GUMSI12	GUMSI16	GUMSI24	GUMSI36	GUMSI48	GUMSI72	Yellow
<b>GUMT • GUMS</b>											
Std. plywood reel (non-returnable)	Ø 560 x 336 mm, Weight 4.25 kg		Ø 800 x 475 mm, Weight 7.65 kg		Ø 1000 x 530 mm, Weight 18.0 kg		Ø 1000 x 530 mm, Weight 18.0 kg		Ø 1250 x 688mm, Weight 93.0 kg		–
Std. delivery length	2100 ± 100 m		2100 ± 100 m		2100 ± 100 m		650 ± 100 m		650 ± 100 m		–

## Fiber Color Coding

No.		No.		No.		No.		No.		No.	
1	White	5	Green	9	Orange	13	White + ring	17	Green + ring	21	Orange + ring
2	Red	6	Violet	10	Turquoise	14	Red + ring	18	Violet + ring	22	Turquoise + ring
3	Blue	7	Brown	11	Pink	15	Blue + ring	19	Brown + ring	23	Pink + ring
4	Yellow	8	Black	12	Grey	16	Yellow + ring	20	Black + ring	24	Grey + ring

## Universal Mini-Breakout with Improved Rodent Protection

GUXT

A/I-V(ZN)BH



### 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

- Available in sizes from 2 to 24 fibers
- 900 µm buffered fiber allows for use of field-installable connectors
- Length marking in meters for easy determination of the cable length
- Full dielectric construction, no grounding required
- (Swellable) glass yarns for improved rodent protection
- 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.

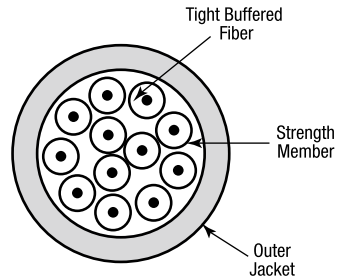
### Specifications

IEC 60794-1-2	
Crush Resistance (E3):	4 kN/m
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
– Transport/Storage	-30°C to +70°C
– Installation	-5°C to +50°C
– Operation	-30°C to +70°C
Watertightness (F5):	Pass
Stripping (E5), Tight:	
– Secondary coating	> 10 cm
– Primary and Secondary	> 10 mm
Other	
Flame Retardant:	IEC 60332-3-24
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density:	IEC 61034-2





## Cross Section



## Characteristics

Tight Buffer	Fiber Count	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
GUXT*04	1 x 4	7.0	44	4000	2000	375
GUXT*06	1 x 6	7.3	51	4000	2000	445
GUXT*08	1 x 8	7.3	56	4000	2000	472
GUXT*12	1 x 12	9.4	76	6000	3000	801
GUXT*16	1 x 16	10.0	92	7000	3500	1095
GUXT*24	1 x 24	10.6	121	8000	4000	1243

Note: Buffer diameter  $0.90 \pm 0.05$  mm

## Ordering Information

Fiber Type/Count	2	4	6	8	12	16	24	Jacket Color
62.5/125-OM1	GUXT102	GUXT104	GUXT106	GUXT108	GUXT112	GUXT116	GUXT124	Orange
50/125-OM2	GUXT202	GUXT204	GUXT206	GUXT208	GUXT212	GUXT216	GUXT224	Orange
50/125-OM3	GUXT302	GUXT304	GUXT306	GUXT308	GUXT312	GUXT316	GUXT324	Aqua
50/125-OM3 Flex	GUXTD02	GUXTD04	GUXTD06	GUXTD08	GUXTD12	GUXTD16	GUXTD24	Aqua
50/125-OM4	GUXT602	GUXT604	GUXT606	GUXT608	GUXT612	GUXT616	GUXT624	Erika-Violet (RAL 4003)
50/125-OM4 Flex	GUXTE02	GUXTE04	GUXTE06	GUXTE08	GUXTE12	GUXTE16	GUXTE24	Erika-Violet (RAL 4003)
9/125 ITU G.657A1	GUXTA02	GUXTA04	GUXTA06	GUXTA08	GUXTA12	GUXTA16	GUXTA24	Yellow
9/125 ITU G.657A2	GUXTF02	GUXTF04	GUXTF06	GUXTF08	GUXTF12	GUXTF16	GUXTF24	Yellow
9/125 ITU G.657B3	GUXTI02	GUXTI04	GUXTI06	GUXTI08	GUXTI12	GUXTI16	GUXTI24	Yellow
Std. plywood reel (non-returnable)	Ø 560 x 336 mm, Weight 4.25 kg		Ø 800 x 475 mm, Weight 7.65 kg		Ø 1000 x 530 mm, Weight 18.0 kg			-
Std. delivery length	2100 ± 100 m		2100 ± 100 m		2100 ± 100 m			-

## Fiber Color Coding

No.		No.		No.		No.		No.		No.	
1	White	5	Green	9	Orange	13	White + ring	17	Green + ring	21	Orange + ring
2	Red	6	Violet	10	Turquoise	14	Red + ring	18	Violet + ring	22	Turquoise + ring
3	Blue	7	Brown	11	Pink	15	Blue + ring	19	Brown + ring	23	Pink + ring
4	Yellow	8	Black	12	Grey	16	Yellow + ring	20	Black + ring	24	Grey + ring

## Universal Mini-Breakout with Steel Wire Armor

GUXW

A/I-VQ(ZN)HBH



### 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

### Features & Benefits

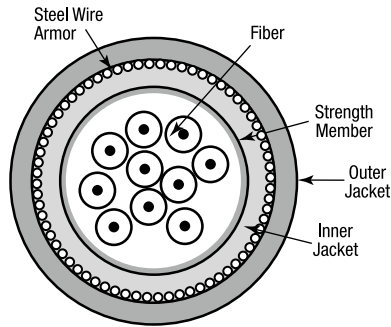
- Available in sizes from 2 to 24 fibers
- 900 µm buffered fiber allows for use of field-installable connectors
- Length marking in meters for easy determination of the cable length
- High mechanical and full rodent protection provided by Steel Wire Armor (SWA)
- These cables are halogen-free (= FRNC and LSNH) and watertight and therefore suitable for internal and external use. Consequently splicing can be avoided and the installation gets more cost-effective.

### Specifications

IEC 60794-1-2	
Crush Resistance (E3):	30 kN/m
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
– Transport/Storage	-30°C to +70°C
– Installation	-5°C to +50°C
– Operation	-30°C to +70°C
Watertightness (F5):	Pass
Stripping (E5), Tight:	
– Secondary coating	> 10 cm
– Primary and Secondary	> 10 mm
Other	
Flame Retardant:	IEC 60332-3-22
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density:	IEC 61034-2



## Cross Section



## Characteristics

Tight Buffer	Fiber Count	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
GUXW*04	4	10.8	232	4000	2000	1075
GUXW*06	6	11.1	246	4000	2000	1150
GUXW*08	8	11.1	251	4000	2000	1177
GUXW*12	12	13.4	323	6000	3000	1746
GUXW*16	16	14.0	352	7000	3500	2082
GUXW*24	24	14.6	394	8000	4000	2272

Note: Buffer diameter  $0.90 \pm 0.05$  mm

## Ordering Information

Fiber Type/Count	4	6	8	12	16	24	Jacket Color
62.5/125-OM1	GUXW104	GUXW106	GUXW108	GUXW112	GUXW116	GUXW124	Orange
50/125-OM2	GUXW204	GUXW206	GUXW208	GUXW212	GUXW216	GUXW224	Orange
50/125-OM3	GUXW304	GUXW306	GUXW308	GUXW312	GUXW316	GUXW324	Aqua
50/125-OM3 Flex	GUXWD04	GUXWD06	GUXWD08	GUXWD12	GUXWD16	GUXWD24	Aqua
50/125-OM4	GUXW604	GUXW606	GUXW608	GUXW612	GUXW616	GUXW624	Erika-Violet (RAL 4003)
50/125-OM4 Flex	GUXWE04	GUXWE06	GUXWE08	GUXWE12	GUXWE16	GUXWE24	Erika-Violet (RAL 4003)
9/125 ITU G.657A1	GUXWA04	GUXWA06	GUXWA08	GUXWA12	GUXWA16	GUXWA24	Yellow
9/125 ITU G.657A2	GUXWF04	GUXWF06	GUXWF08	GUXWF12	GUXWF16	GUXWF24	Yellow
9/125 ITU G.657B3	GUXWI04	GUXWI06	GUXWI08	GUXWI12	GUXWI16	GUXWI24	Yellow
Std. plywood reel (non-returnable)	Ø 800 x 475 mm, Weight 7.65 kg			Ø 1000 x 530 mm, Weight 18.0 kg			-
Std. delivery length	2100 ± 100 m			2100 ± 100 m			-

## Fiber Color Coding

1 White	5 Green	9 Orange	13 White + ring	17 Green + ring	21 Orange + ring
2 Red	6 Violet	10 Turquoise	14 Red + ring	18 Violet + ring	22 Turquoise + ring
3 Blue	7 Brown	11 Pink	15 Blue + ring	19 Brown + ring	23 Pink + ring
4 Yellow	8 Black	12 Grey	16 Yellow + ring	20 Black + ring	24 Grey + ring

## Universal Mini-Breakout with Corrugated Steel Tape

GUMX

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



### 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

### Features & Benefits

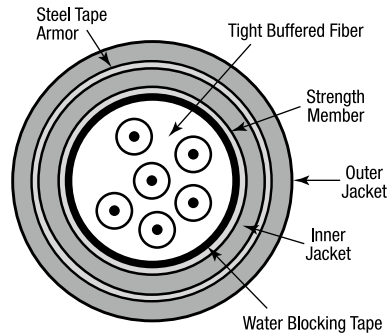
- Available in sizes from 6 to 12 fibers
- 900 µm buffered fiber allows for use of field-installable connectors
- Length marking in meters for easy determination of the cable length
- High mechanical and full rodent protection provided by Corrugated Steel Tape (CST)
- These cables are halogen-free (= 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.

### Specifications

IEC 60794-1-2	
Crush Resistance (E3):	10 kN/m
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
- Transport/Storage	-30°C to +70°C
- Installation	-5°C to +50°C
- Operation	-30°C to +70°C
Watertightness (F5):	Pass
Stripping (E5), Tight:	
- Secondary coating	> 10 cm
- Primary and Secondary	> 10 mm
Other	
Flame Retardant:	IEC 60332-3-22
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density:	IEC 61034-2



## Cross Section



## Characteristics

Tight Buffer	Fiber Count	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
<b>GUMX*06</b>	6	11.0	128	1000	500	1230
<b>GUMX*08</b>	8	11.0	130	1000	500	1250
<b>GUMX*12</b>	12	12.5	177	1400	700	1680

Note: Buffer diameter  $0.90 \pm 0.05$  mm

## Ordering Information

Fiber Type/Count	6	8	12	Jacket Color
62.5/125-OM1	<b>GUMX106</b>	<b>GUMX108</b>	<b>GUMX112</b>	Orange
50/125-OM2	<b>GUMX206</b>	<b>GUMX208</b>	<b>GUMX212</b>	Orange
50/125-OM3	<b>GUMX306</b>	<b>GUMX308</b>	<b>GUMX312</b>	Aqua
50/125-OM3 Flex	<b>GUMXD06</b>	<b>GUMXD08</b>	<b>GUMXD12</b>	Aqua
50/125-OM4	<b>GUMX606</b>	<b>GUMX608</b>	<b>GUMX612</b>	Erika-Violet (RAL 4003)
50/125-OM4 Flex	<b>GUMXE06</b>	<b>GUMXE08</b>	<b>GUMXE12</b>	Erika-Violet (RAL 4003)
9/125 ITU G.657A1	<b>GUMXA06</b>	<b>GUMXA08</b>	<b>GUMXA12</b>	Yellow
9/125 ITU G.657A2	<b>GUMXF06</b>	<b>GUMXF08</b>	<b>GUMXF12</b>	Yellow
9/125 ITU G.657B3	<b>GUMXI06</b>	<b>GUMXI08</b>	<b>GUMXI12</b>	Yellow
Std. plywood reel (non-returnable)	$\varnothing$ 1000 x 530 mm, Weight 50.0 kg		$\varnothing$ 1250 x 688 mm, Weight 74.0 kg	-
Std. delivery length	2100 $\pm$ 100 m		2100 $\pm$ 100 m	-

## Fiber Color Coding

No.		No.		No.	
1	White	5	Green	9	Orange
2	Red	6	Violet	10	Turquoise
3	Blue	7	Brown	11	Pink
4	Yellow	8	Black	12	Grey

## Universal Mini-Breakout with Steel Wire Braid

GUMV

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



### 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

### Features & Benefits

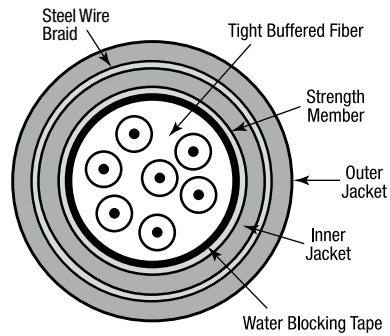
- Available in sizes from 2 to 24 fibers
- 900 µm buffered fiber allows for use of field-installable connectors
- Length marking in meters for easy determination of the cable length
- High mechanical and full rodent protection provided by Steel Wire Braid (SWB)
- These cables are halogen-free (= FRNC and LSNH) and watertight and therefore suitable for internal and external use. Consequently splicing can be avoided and the installation gets more cost-effective.

### Specifications

IEC 60794-1-2	
Crush Resistance (E3):	15 kN/m
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
- Transport/Storage	-30°C to +70°C
- Installation	-5°C to +50°C
- Operation	-30°C to +70°C
Watertightness (F5):	Pass
Stripping (E5), Tight:	
- Secondary coating	> 10 cm
- Primary and Secondary	> 10 mm
Other	
Flame Retardant:	IEC 60332-3-22
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density:	IEC 61034-2



## Cross Section



## Characteristics

Tight Buffer	Fiber Count	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
GUMV*04	4	9.5	108	800	400	1120
GUMV*06	6	10.0	117	900	450	1230
GUMV*08	8	10.0	119	900	450	1250
GUMV*12	12	11.7	153	1000	500	1680
GUMV*16	16	12.7	171	1000	500	2000
GUMV*24	24	13.7	194	1200	600	2340

Note: Buffer diameter 0.90 ± 0.05 mm

## Ordering Information

Fiber Type/Count	4	6	8	12	16	24	Jacket Color
62.5/125-OM1	GUMV104	GUMV106	GUMV108	GUMV112	GUMV116	GUMV124	Orange
50/125-OM2	GUMV204	GUMV206	GUMV208	GUMV212	GUMV216	GUMV224	Orange
50/125-OM3	GUMV304	GUMV306	GUMV308	GUMV312	GUMV316	GUMV324	Aqua
50/125-OM3 Flex	GUMVD04	GUMVD06	GUMVD08	GUMVD12	GUMVD16	GUMVD24	Aqua
50/125-OM4	GUMV604	GUMV606	GUMV608	GUMV612	GUMV616	GUMV624	Erika-Violet (RAL 4003)
50/125-OM4 Flex	GUMVE04	GUMVE06	GUMVE08	GUMVE12	GUMVE16	GUMVE24	Erika-Violet (RAL 4003)
9/125 ITU G.657A1	GUMVA04	GUMVA06	GUMVA08	GUMVA12	GUMVA16	GUMVA24	Yellow
9/125 ITU G.657A2	GUMVF04	GUMVF06	GUMVF08	GUMVF12	GUMVF16	GUMVF24	Yellow
9/125 ITU G.657B3	GUMVI04	GUMVI06	GUMVI08	GUMVI12	GUMVI16	GUMVI24	Yellow
Std. plywood reel (non-returnable)				Ø 1000 x 530 mm, Weight 18.0 kg			-
Std. delivery length				2100 ± 100 m			-

## Fiber Color Coding

No.		No.		No.		No.		No.		No.	
1	White	5	Green	9	Orange	13	White + ring	17	Green + ring	21	Orange + ring
2	Red	6	Violet	10	Turquoise	14	Red + ring	18	Violet + ring	22	Turquoise + ring
3	Blue	7	Brown	11	Pink	15	Blue + ring	19	Brown + ring	23	Pink + ring
4	Yellow	8	Black	12	Grey	16	Yellow + ring	20	Black + ring	24	Grey + ring

## Universal Tactical Mini-Breakout

GM TT

A/I-VQ(ZN)11Y



### Applications

- These metal-free mobile cables have been designed for de-spooling and re-spooling repeatedly
- Support all computer network applications such as FDDI, Gigabit Ethernet and ATM

### Features & Benefits

- Available in sizes from 2 to 24 fibers
- 900  $\mu\text{m}$  buffered fiber allows for use of field-installable connectors
- Extremely strong, rugged, survivable tight-buffered cables for harsh environments
- Core-bonded Polyurethane jacket provides simple installation
- Length marking in meters for easy determination of the cable length
- Full dielectric construction, no grounding required

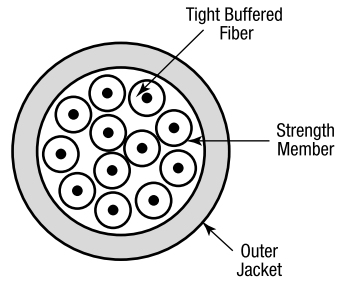
### Specifications

IEC 60794-1-2	
Crush Resistance (E3):	4 kN/m
Torsion (E7) +20° Rotation Angle 360°/m; 55 N:	10,000 cycles
Torsion (E7) -40° Rotation Angle 130°/m; 55 N:	20,000 cycles
Min. Bend Radius:	
– Dynamic (E6)	15 x $\emptyset$
– Cable with flex fiber	8 x $\emptyset$
Min. Bend Radius:	
– Static (E11)	10 x $\emptyset$
– Cable with flex fiber	4 x $\emptyset$
Repeated bending (E6):	> 700,000
Temperature Range (F1):	
– Transport/Storage	-70°C to +85°C
– Installation	-5°C to +50°C
– Operation	-55°C to +85°C
Stripping (E5), Tight:	
– Secondary coating	> 10 cm
– Primary and Secondary	> 10 mm
Min. Bend Radius fibers:	25 mm
– Flex fibers G657A1 (max. increase)	0.75 dB/turn@1550 nm with 10 mm
– Flex fibers G657A2 (max. increase)	0.50 dB/turn@1550 nm with 7.5 mm
– Flex fibers G657B3 (max. increase)	0.15 dB/turn@1550 nm with 5 mm
– Flex fibers OM3 flex, OM4 flex (max. increase)	0.20 dB/turn@850 nm with 7.5 mm
	0.50 dB/turn@1300 nm with 7.5 mm





## Cross Section



## Characteristics

Tight Buffer	Fiber Count	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
GM TT*02	2	5.4	27	1500	700	470
GM TT*04	4	5.8	31	1600	800	580
GM TT*06	6	7.0	40	2000	950	725
GM TT*08	8	7.0	41	2200	1100	780
GM TT*12	12	8.2	60	2200	1100	1270
GM TT*24	24	8.5	71	2200	1100	1567

Note: Buffer diameter  $0.90 \pm 0.05$  mm

## Ordering Information

Fiber Type/Count	2	4	6	8	12	24	Jacket Color
62.5/125-OM1	GM TT102	GM TT104	GM TT106	GM TT108	GM TT112	GM TT124	Black
50/125-OM2	GM TT202	GM TT204	GM TT206	GM TT208	GM TT212	GM TT224	Black
50/125-OM3	GM TT302	GM TT304	GM TT306	GM TT308	GM TT312	GM TT324	Black
50/125-OM3 Flex	GM TTD02	GM TTD04	GM TTD06	GM TTD08	GM TTD12	GM TTD24	Black
50/125-OM4	GM TT602	GM TT604	GM TT606	GM TT608	GM TT612	GM TT624	Black
50/125-OM4 Flex	GM TTE02	GM TTE04	GM TTE06	GM TTE08	GM TTE12	GM TTE24	Black
9/125 ITU G.657A1	GM TTA02	GM TTA04	GM TTA06	GM TTA08	GM TTA12	GM TTA24	Black
9/125 ITU G.657A2	GM TTF02	GM TTF04	GM TTF06	GM TTF08	GM TTF12	GM TTF24	Black
9/125 ITU G.657B3	GM TTI02	GM TTI04	GM TTI06	GM TTI08	GM TTI12	GM TTI24	Black
Std. plywood reel (non-returnable)	Ø 560 x 336 mm, Weight 4.25 kg		Ø 800 x 475 mm, Weight 7.65 kg		Ø 1000 x 530 mm, Weight 18.0 kg		-
Std. delivery length	2100 ± 100 m		2100 ± 100 m		2100 ± 100 m		-

## Fiber Color Coding

No.		No.		No.		No.		No.		No.	
1	White	5	Green	9	Orange	13	White + ring	17	Green + ring	21	Orange + ring
2	Red	6	Violet	10	Turquoise	14	Red + ring	18	Violet + ring	22	Turquoise + ring
3	Blue	7	Brown	11	Pink	15	Blue + ring	19	Brown + ring	23	Pink + ring
4	Yellow	8	Black	12	Grey	16	Yellow + ring	20	Black + ring	24	Grey + ring

## Universal Tactical Mini-Breakout with Improved Rodent Protection

GMRT

A/I-VQ(ZN)11Y(ZN)11Y



### Applications

- These metal-free mobile cables have been designed for de-spooling and re-spooling repeatedly
- Support all computer network applications such as FDDI, Gigabit Ethernet and ATM

### Features & Benefits

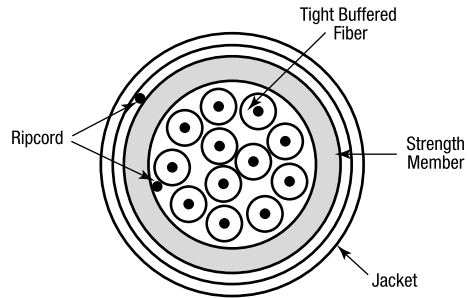
- Available in sizes from 2 to 16 fibers
- 900  $\mu$ m buffered fiber allows for use of field-installable connectors
- Extremely strong, rugged, survivable tight-buffered cables for harsh environments
- Core-bonded Polyurethane inner and outer jacket provides simple installation
- Glass-rovings between inner and outer jacket for improved mechanical strength
- Length marking in meters for easy determination of the cable length
- Full dielectric construction, no grounding required

### Specifications

IEC 60794-1-2	
Crush Resistance (E3):	50 kN/m
Min. Bend Radius:	
– Dynamic (E6)	15 x $\emptyset$
– Cable with flex fiber	8 x $\emptyset$
Min. Bend Radius:	
– Static (E11)	10 x $\emptyset$
– Cable with flex fiber	4 x $\emptyset$
Repeated bending (E6):	> 700,000
Temperature Range (F1):	
– Transport/Storage	-70°C to +85°C
– Installation	-5°C to +50°C
– Operation	-55°C to +85°C
Stripping (E5), Tight:	
– Secondary coating	> 10 cm
– Primary and Secondary	> 10 mm
Min. Bend Radius fibers:	25 mm
– Flex fibers G657A1 (max. increase)	0.75 dB/turn@1550 nm with 10 mm
– Flex fibers G657A2 (max. increase)	0.50 dB/turn@1550 nm with 7.5 mm
– Flex fibers G657B3 (max. increase)	0.15 dB/turn@1550 nm with 5 mm
– Flex fibers OM3 flex, OM4 flex (max. increase)	0.20 dB/turn@850 nm with 7.5 mm 0.50 dB/turn@1300 nm with 7.5 mm



## Cross Section



## Characteristics

Tight Buffer	Fiber Count	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
GMRT*02	2	9.2	61	2400	1600	1180
GMRT*04	4	9.2	88	2400	1600	1256
GMRT*06	6	10.4	105	2800	1800	1900
GMRT*08	8	10.4	105	2800	1800	1900
GMRT*12	12	10.9	113	3300	2200	2270
GMRT*24	24	11.2	180	3300	2200	2512

Note: Buffer diameter  $0.90 \pm 0.05$  mm

## Ordering Information

Fiber Type/Count	2	4	6	8	12	24	Jacket Color
62.5/125-OM1	GMRT102	GMRT104	GMRT106	GMRT108	GMRT112	GMRT124	Black
50/125-OM2	GMRT202	GMRT204	GMRT206	GMRT208	GMRT212	GMRT224	Black
50/125-OM3	GMRT302	GMRT304	GMRT306	GMRT308	GMRT312	GMRT324	Black
50/125-OM3 Flex	GMRTD02	GMRTD04	GMRTD06	GMRTD08	GMRTD12	GMRTD24	Black
50/125-OM4	GMRT602	GMRT604	GMRT606	GMRT608	GMRT612	GMRT624	Black
50/125-OM4 Flex	GM RTE02	GM RTE04	GM RTE06	GM RTE08	GM RTE12	GM RTE24	Black
9/125 ITU G.657A1	GMRTA02	GMRTA04	GMRTA06	GMRTA08	GMRTA12	GMRTA24	Black
9/125 ITU G.657A2	GMRTF02	GMRTF04	GMRTF06	GMRTF08	GMRTF12	GMRTF24	Black
9/125 ITU G.657B3	GMRTI02	GMRTI04	GMRTI06	GMRTI08	GMRTI12	GMRTI24	Black
Std. plywood reel (non-returnable)				Ø 1000 x 530 mm, Weight 50.0 kg			-
Std. delivery length				2100 ± 100 m			-

## Fiber Color Coding

No.		No.		No.		No.	
1	White	5	Green	9	Orange	13	White + ring
2	Red	6	Violet	10	Turquoise	14	Red + ring
3	Blue	7	Brown	11	Pink	15	Blue + ring
4	Yellow	8	Black	12	Grey	16	Yellow + ring

## Universal Tactical Breakout

GMBT

A/I-VQ(ZN)H(ZN)11Y



### Applications

- These metal-free mobile cables have been designed for de-spooling and re-spooling repeatedly
- Support all computer network applications such as FDDI, Gigabit Ethernet and ATM

### Features & Benefits

- Available in sizes 4, 6 and 8 fibers
- Extremely strong, rugged, survivable tight-buffered cables for harsh environments
- Polyurethane outer jacket
- The individual single fiber units (of which these metal-free breakout cables are composed) permit direct (de-tensioned) terminations with separate single-way connectors, eliminating the splicing of pigtails and/or breakout kits
- Length marking in meters for easy determination of the cable length
- Full dielectric construction, no grounding required

### Specifications

#### IEC 60794-1-2

#### Crush Resistance (E3):

- Cable	44 kN/m
- Fiber unit	8 kN/m

Min. Bend Radius dynamic (E6):	15 x Ø
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Min. Bend Radius static (E11):	10 x Ø
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Min. Bend Radius fibers:	25 mm
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#### Temperature Range (F1):

- Transport/Storage	-30°C to +70°C
- Installation	-5°C to +50°C
- Operation	-30°C to +70°C

#### Stripping (E5), Tight:

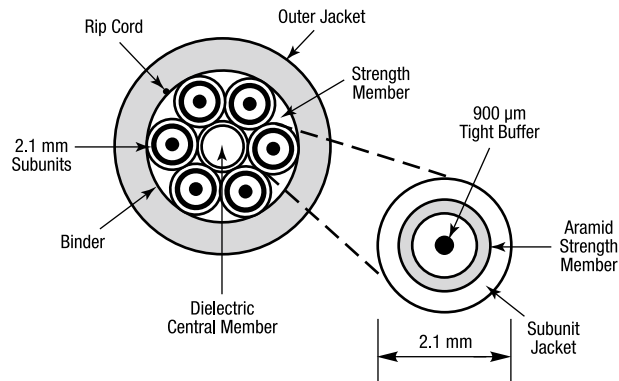
- Secondary coating	> 10 cm
- Primary and Secondary	> 10 mm

#### Other

Flame Retardant:	IEC 60332-1
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## Cross Section



## Characteristics

Tight Buffer	Fiber Count	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
<b>GMBT*04</b>	4	7.2	65	1200	600	652
<b>GMBT*06</b>	6	8.0	82	2800	1400	1090
<b>GMBT*08</b>	8	9.4	110	4000	2000	1415

Note: Buffer diameter  $0.90 \pm 0.05$  mm

## Ordering Information

Fiber Type/Court	4	6	8	Jacket Color
62.5/125-OM1	<b>GMBT104</b>	<b>GMBT106</b>	<b>GMBT108</b>	Black
50/125-OM2	<b>GMBT204</b>	<b>GMBT206</b>	<b>GMBT208</b>	Black
50/125-OM3	<b>GMBT304</b>	<b>GMBT306</b>	<b>GMBT308</b>	Black
50/125-OM3 Flex	<b>GMBTD04</b>	<b>GMBTD06</b>	<b>GMBTD08</b>	Black
50/125-OM4	<b>GMBT604</b>	<b>GMBT606</b>	<b>GMBT608</b>	Black
50/125-OM4 Flex	<b>GMBTE04</b>	<b>GMBTE06</b>	<b>GMBTE08</b>	Black
9/125 ITU G.657A1	<b>GMBTA04</b>	<b>GMBTA06</b>	<b>GMBTA08</b>	Black
9/125 ITU G.657A2	<b>GMBTF04</b>	<b>GMBTF06</b>	<b>GMBTF08</b>	Black
9/125 ITU G.657B3	<b>GMBT104</b>	<b>GMBT106</b>	<b>GMBT108</b>	Black
Std. plywood reel (non-returnable)	Ø 800 x 475 mm, Weight 7.65 kg		Ø 1000 x 530 mm, Weight 18 kg	–
Std. delivery length	2100 ± 100 m		2100 ± 100 m	–

## Universal Wind Tower Cable

GWRT

A/I-VQ(ZN)11Y(ZN)11Y



### Applications

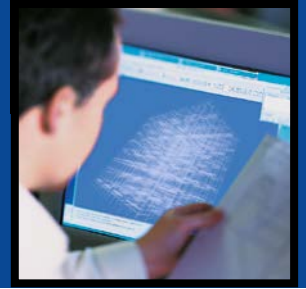
- Flexible cable is suitable for use in Windmill Towers, vertical installation
- Support all computer network applications such as FDDI, Gigabit Ethernet and ATM

### Features & Benefits

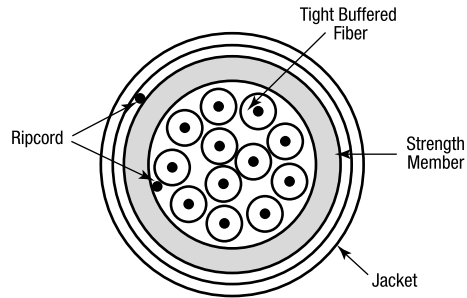
- Available in sizes of 4, 8 and 12 fibers
- 900  $\mu$ m buffered fiber allows for use of field-installable connectors
- Extremely strong, rugged, survivable tight-buffered cables for harsh environments
- Core-bonded Polyurethane inner and outer jacket provides simple installation
- Glass-rovings between inner and outer jacket for improved mechanical strength and rodent protection
- High abrasion and chemical resistance against oil, acids and alkalis
- Length marking in meters for easy determination of the cable length
- Full dielectric construction, no grounding required

### Specifications

IEC 60794-1-2	
Crush Resistance (E3):	50 kN/m
Torsion (E7) -40° Rotation Angle 130°/m; 55 N:	20,000 cycles
Min. Bend Radius: – Dynamic (E6)	15 x $\emptyset$
– Cable with flex fiber	8 x $\emptyset$
Min. Bend Radius: – Static (E11)	10 x $\emptyset$
– Cable with flex fiber	4 x $\emptyset$
Repeated bending (E6):	> 500,000
Temperature Range (F1): – Transport/Storage	-70°C to +85°C
– Installation	-5°C to +50°C
– Operation	-55°C to +85°C
Stripping (E5), Tight: – Secondary coating	> 10 cm
– Primary and Secondary	> 10 mm
Min. Bend Radius fibers:	25 mm
– Flex fibers G657A1 (max. increase)	0.75 dB/turn@1550 nm with 10 mm
– Flex fibers G657A2 (max. increase)	0.50 dB/turn@1550 nm with 7.5 mm
– Flex fibers G657B3 (max. increase)	0.15 dB/turn@1550 nm with 5 mm
– Flex fibers OM3 flex, OM4 flex (max. increase)	0.20 dB/turn@850 nm with 7.5 mm 0.50 dB/turn@1300 nm with 7.5 mm
Other	
Flame Retardant:	IEC 60332-1, FT1, UL 1685
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density:	IEC 61034-2



## Cross Section



## Characteristics

Tight Buffer	Fiber Count	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
<b>GWRT*04</b>	4	9.2	88	2400	1600	1180
<b>GWRT*08</b>	8	10.0	99	2400	1600	1690
<b>GWRT*12</b>	12	10.5	135	2400	1600	2770

Note: Buffer diameter  $0.90 \pm 0.05$  mm

## Ordering Information

Fiber Type/Count	4	8	12	Jacket Color
62.5/125-OM1	<b>GWRT104</b>	<b>GWRT108</b>	<b>GWRT112</b>	Black
50/125-OM2	<b>GWRT204</b>	<b>GWRT208</b>	<b>GWRT212</b>	Black
50/125-OM3	<b>GWRT304</b>	<b>GWRT308</b>	<b>GWRT312</b>	Black
50/125-OM3 Flex	<b>GWRTD04</b>	<b>GWRTD08</b>	<b>GWRTD12</b>	Black
50/125-OM4	<b>GWRT604</b>	<b>GWRT608</b>	<b>GWRT612</b>	Black
50/125-OM4 Flex	<b>GWRT E04</b>	<b>GWRT E08</b>	<b>GWRT E12</b>	Black
9/125 ITU G.657A1	<b>GWRTA04</b>	<b>GWRTA08</b>	<b>GWRTA12</b>	Black
9/125 ITU G.657A2	<b>GWRTF04</b>	<b>GWRTF08</b>	<b>GWRTF12</b>	Black
9/125 ITU G.657B3	<b>GWRTI04</b>	<b>GWRTI08</b>	<b>GWRTI12</b>	Black
Std. plywood reel (non-returnable)	Ø 1000 x 588 mm, Weight 50.0 kg			-
Std. delivery length	2100 ± 100 m			-

## Fiber Color Coding

No.		No.		No.	
1	White	5	Green	9	Orange
2	Red	6	Violet	10	Turquoise
3	Blue	7	Brown	11	Pink
4	Yellow	8	Black	12	Grey

## Universal Central Loose Tube Cable with Rodent Protection, Single Jacket

GUSN, GUSL, GURN, GUVN

A/I-DQ(ZN)BH



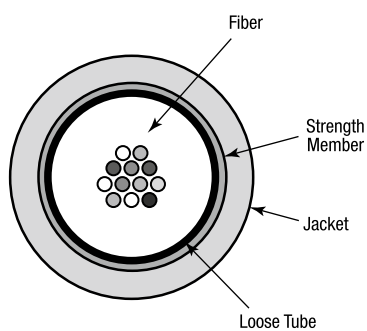
### Applications

- For outdoor and indoor use in structured (data) wiring systems such as campus backbone
- Easy to install in ducts, tunnels and trenches by means of compressed air or pulling wire
- Suitable for direct burial

### Features & Benefits

- Available in sizes from 2 to 24 fibers
- Jelly filled (non-dripping and silicon-free) loose tube with primary coated optical fibers ( $\text{Ø } 250 \pm 15 \mu\text{m}$ )
- Full dielectric construction, no grounding required
- Rodent protected by means of Glass Yarn Strength Elements
- Length marking in meters for easy determination of the cable length

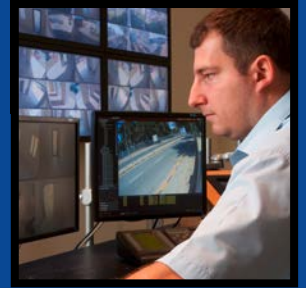
### Cross Section



### Specifications

IEC 60794-1-2	
Crush Resistance (E3):	15 kN/m
Min. Bend Radius dynamic (E6):	15 x Ø
Min. Bend Radius static (E11):	10 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
– Transport/Storage	-30°C to +70°C
– Installation	-5°C to +50°C
– Operation	-30°C to +70°C
Watertightness (F5):	Pass
Other	
Flame Retardant:	
– GUSN, GURN, GUVN	IEC 60332-1
– GUSL	IEC 60332-3-25
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density:	IEC 61034-2





## Characteristics

Loose Tube	Fiber Count	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
<b>IEC 60794-1-2</b>				<b>E1</b>	<b>E1</b>	
<b>GUSN*xx</b>	2 to 24	5.8	37	1500	700	550
<b>GUSL*xx</b>	2 to 24	6.5	47	1500	700	580
<b>GURN*xx</b>	2 to 24	7.1	55	3500	1750	755
<b>GUVN*xx</b>	2 to 24	7.8	67	5000	2500	928

## Ordering Information

Fiber Type/Count	2	4	6	8	12	16	24
<b>GUSN</b>							
62.5/125-OM1	GUSN102	GUSN104	GUSN106	GUSN108	GUSN112	GUSN116	GUSN124
50/125-OM2	GUSN202	GUSN204	GUSN206	GUSN208	GUSN212	GUSN216	GUSN224
50/125-OM3	GUSN302	GUSN304	GUSN306	GUSN308	GUSN312	GUSN316	GUSN324
50/125-OM4	GUSN602	GUSN604	GUSN606	GUSN608	GUSN612	GUSN616	GUSN624
9/125 ITU G.652D	GUSN802	GUSN804	GUSN806	GUSN808	GUSN812	GUSN816	GUSN824
9/125 ITU G.655 C & D	GUSN702	GUSN704	GUSN706	GUSN708	GUSN712	GUSN716	GUSN724
<b>GUSL</b>							
62.5/125-OM1	GUSL102	GUSL104	GUSL106	GUSL108	GUSL112	GUSL116	GUSL124
50/125-OM2	GUSL202	GUSL204	GUSL206	GUSL208	GUSL212	GUSL216	GUSL224
50/125-OM3	GUSL302	GUSL304	GUSL306	GUSL308	GUSL312	GUSL316	GUSL324
50/125-OM4	GUSL602	GUSL604	GUSL606	GUSL608	GUSL612	GUSL616	GUSL624
9/125 ITU G.652D	GUSL802	GUSL804	GUSL806	GUSL808	GUSL812	GUSL816	GUSL824
9/125 ITU G.655 C & D	GUSL702	GUSL704	GUSL706	GUSL708	GUSL712	GUSL716	GUSL724
<b>GURN</b>							
62.5/125-OM1	GURN102	GURN104	GURN106	GURN108	GURN112	GURN116	GURN124
50/125-OM2	GURN202	GURN204	GURN206	GURN208	GURN212	GURN216	GURN224
50/125-OM3	GURN302	GURN304	GURN306	GURN308	GURN312	GURN316	GURN324
50/125-OM4	GURN602	GURN604	GURN606	GURN608	GURN612	GURN616	GURN624
9/125 ITU G.652D	GURN802	GURN804	GURN806	GURN808	GURN812	GURN816	GURN824
9/125 ITU G.655 C & D	GURN702	GURN704	GURN706	GURN708	GURN712	GURN716	GURN724
<b>GUVN</b>							
62.5/125-OM1	GUVN102	GUVN104	GUVN106	GUVN108	GUVN112	GUVN116	GUVN124
50/125-OM2	GUVN202	GUVN204	GUVN206	GUVN208	GUVN212	GUVN216	GUVN224
50/125-OM3	GUVN302	GUVN304	GUVN306	GUVN308	GUVN312	GUVN316	GUVN324
50/125-OM4	GUVN602	GUVN604	GUVN606	GUVN608	GUVN612	GUVN616	GUVN624
9/125 ITU G.652D	GUVN802	GUVN804	GUVN806	GUVN808	GUVN812	GUVN816	GUVN824
9/125 ITU G.655 C & D	GUVN702	GUVN704	GUVN706	GUVN708	GUVN712	GUVN716	GUVN724
<b>GUSN • GURN • GUVN</b>							
Std. plywood reel (non-returnable)				Ø 800 x 475 mm, Weight 7.65 kg and Ø 1000 x 530 mm, Weight 18.0 kg			
Std. delivery length				2100 ± 100 m and 4100 ± 100 m			

## Fiber Color Coding

No.		No.		No.		No.		No.		No.	
1	Red	5	Green	9	Orange	13	Red + ring	17	Green + ring	21	Orange + ring
2	Natural	6	Violet	10	Turquoise	14	Natural + ring	18	Violet + ring	22	Turquoise + ring
3	Yellow	7	Brown	11	Pink	15	Yellow + ring	19	Brown + ring	23	Pink + ring
4	Blue	8	Black	12	White	16	Blue + ring	20	Grey + ring	24	White + ring

**Outdoor Central Loose Tube Cable  
with Rodent Protection, Single Jacket**

GOSN, GORN, GOVN

A-DQ(ZN)B2Y



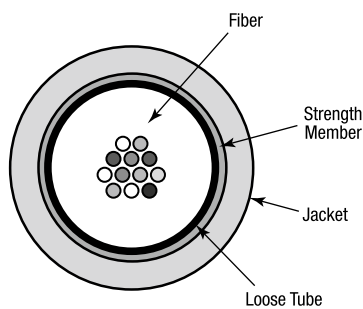
**Applications**

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

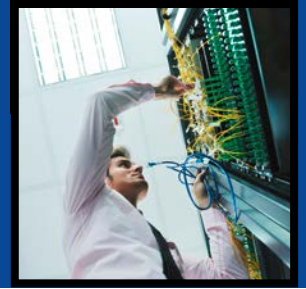
- Available in sizes from 2 to 24 fibers
- Jelly filled (non-dripping and silicon-free) loose tube with primary coated optical fibers (Ø 250 ± 15 µm)
- Full dielectric construction, no grounding required
- Rodent protected by means of Glass Yarn Strength Elements
- Length marking in meters for easy determination of the cable length

**Cross Section**



**Specifications**

IEC 60794-1-2	
Crush Resistance (E3):	15 kN/m
Min. Bend Radius dynamic (E6):	15 x Ø
Min. Bend Radius static (E11):	10 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
- Transport/Storage	-30°C to +70°C
- Installation	-5°C to +50°C
- Operation	-30°C to +70°C
Watertightness (F5):	Pass



## Characteristics

Loose Tube	Fiber Count	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
<b>IEC 60794-1-2</b>				<b>E1</b>	<b>E1</b>	
<b>GOSN*xx</b>	2 to 24	5.8	28	1500	700	762
<b>GORN*xx</b>	2 to 24	7.1	44	3500	1750	1056
<b>GOVN*xx</b>	2 to 24	7.8	52	5000	2500	1350

## Ordering Information

Fiber Type/Count	2	4	6	8	12	16	24	
<b>GOSN</b>								
62.5/125-OM1	<b>GOSN102</b>	<b>GOSN104</b>	<b>GOSN106</b>	<b>GOSN108</b>	<b>GOSN112</b>	<b>GOSN116</b>	<b>GOSN124</b>	
50/125-OM2	<b>GOSN202</b>	<b>GOSN204</b>	<b>GOSN206</b>	<b>GOSN208</b>	<b>GOSN212</b>	<b>GOSN216</b>	<b>GOSN224</b>	
50/125-OM3	<b>GOSN302</b>	<b>GOSN304</b>	<b>GOSN306</b>	<b>GOSN308</b>	<b>GOSN312</b>	<b>GOSN316</b>	<b>GOSN324</b>	
50/125-OM4	<b>GOSN602</b>	<b>GOSN604</b>	<b>GOSN606</b>	<b>GOSN608</b>	<b>GOSN612</b>	<b>GOSN616</b>	<b>GOSN624</b>	
9/125 ITU G.652D	<b>GOSN802</b>	<b>GOSN804</b>	<b>GOSN806</b>	<b>GOSN808</b>	<b>GOSN812</b>	<b>GOSN816</b>	<b>GOSN824</b>	
9/125 ITU G.655 C & D	<b>GOSN702</b>	<b>GOSN704</b>	<b>GOSN706</b>	<b>GOSN708</b>	<b>GOSN712</b>	<b>GOSN716</b>	<b>GOSN724</b>	
<b>GORN</b>								
62.5/125-OM1	<b>GORN102</b>	<b>GORN104</b>	<b>GORN106</b>	<b>GORN108</b>	<b>GORN112</b>	<b>GORN116</b>	<b>GORN124</b>	
50/125-OM2	<b>GORN202</b>	<b>GORN204</b>	<b>GORN206</b>	<b>GORN208</b>	<b>GORN212</b>	<b>GORN216</b>	<b>GORN224</b>	
50/125-OM3	<b>GORN302</b>	<b>GORN304</b>	<b>GORN306</b>	<b>GORN308</b>	<b>GORN312</b>	<b>GORN316</b>	<b>GORN324</b>	
50/125-OM4	<b>GORN602</b>	<b>GORN604</b>	<b>GORN606</b>	<b>GORN608</b>	<b>GORN612</b>	<b>GORN616</b>	<b>GORN624</b>	
9/125 ITU G.652D	<b>GORN802</b>	<b>GORN804</b>	<b>GORN806</b>	<b>GORN808</b>	<b>GORN812</b>	<b>GORN816</b>	<b>GORN824</b>	
9/125 ITU G.655 C & D	<b>GORN702</b>	<b>GORN704</b>	<b>GORN706</b>	<b>GORN708</b>	<b>GORN712</b>	<b>GORN716</b>	<b>GORN724</b>	
<b>GOVN</b>								
62.5/125-OM1	<b>GOVN102</b>	<b>GOVN104</b>	<b>GOVN106</b>	<b>GOVN108</b>	<b>GOVN112</b>	<b>GOVN116</b>	<b>GOVN124</b>	
50/125-OM2	<b>GOVN202</b>	<b>GOVN204</b>	<b>GOVN206</b>	<b>GOVN208</b>	<b>GOVN212</b>	<b>GOVN216</b>	<b>GOVN224</b>	
50/125-OM3	<b>GOVN302</b>	<b>GOVN304</b>	<b>GOVN306</b>	<b>GOVN308</b>	<b>GOVN312</b>	<b>GOVN316</b>	<b>GOVN324</b>	
50/125-OM4	<b>GOVN602</b>	<b>GOVN604</b>	<b>GOVN606</b>	<b>GOVN608</b>	<b>GOVN612</b>	<b>GOVN616</b>	<b>GOVN624</b>	
9/125 ITU G.652D	<b>GOVN802</b>	<b>GOVN804</b>	<b>GOVN806</b>	<b>GOVN808</b>	<b>GOVN812</b>	<b>GOVN816</b>	<b>GOVN824</b>	
9/125 ITU G.655 C & D	<b>GOVN702</b>	<b>GOVN704</b>	<b>GOVN706</b>	<b>GOVN708</b>	<b>GOVN712</b>	<b>GOVN716</b>	<b>GOVN724</b>	
<b>GOSN • GORN • GOVN</b>								
Std. plywood reel (non-returnable)			Ø 800 x 475 mm, Weight 7.65 kg and Ø 1000 x 530 mm, Weight 18.0 kg					
Std. delivery length			2100 ± 100 m and 4100 ± 100 m					

## Fiber Color Coding

No.		No.		No.		No.		No.		No.	
1	Red	5	Green	9	Orange	13	Red + ring	17	Green + ring	21	Orange + ring
2	Natural	6	Violet	10	Turquoise	14	Natural + ring	18	Violet + ring	22	Turquoise + ring
3	Yellow	7	Brown	11	Pink	15	Yellow + ring	19	Brown + ring	23	Pink + ring
4	Blue	8	Black	12	White	16	Blue + ring	20	Grey + ring	24	White + ring

**Universal Central Loose Tube Cable  
with Corrugated Steel Tape, Single Jacket**

GUCN, GUCB

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



**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**

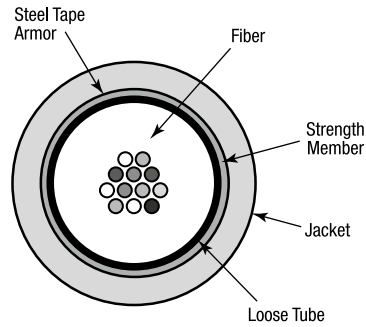
- Available in sizes from 4 to 24 fibers
- Jelly filled (non-dripping and silicon-free) loose tube with primary coated optical fibers (Ø 250 ± 15 µm)
- High mechanical and full rodent protection provided by Corrugated Steel Tape (CST) armor
- Length marking in meters for easy determination of the cable length

**Specifications**

IEC 60794-1-2	
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
– Transport/Storage	-30°C to +70°C
– Installation	-5°C to +50°C
– Operation	-30°C to +70°C
Watertightness (F5):	Pass
Other	
Circuit Integrity:	EN 50200, IEC 60331-25 (E120)
Flame Retardant:	IEC 60332-3-22
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density:	IEC 61034-2



## Cross Section



## Characteristics

Loose Tube	Fiber Count	Diameter (mm)	Weight (kg/km)	Crush Resistance (kN/m)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
IEC 60794-1-2					E1	E1	
GUCN*xx	4 to 24	9.0	103	35	1500	700	1045
GUCB*xx	4 to 24	10.6	148	40	4220	2110	1308

## Ordering Information

Fiber Type/Count	4	6	8	12	16	24
<b>GUCN</b>						
62.5/125-OM1	GUCN104	GUCN106	GUCN108	GUCN112	GUCN116	GUCN124
50/125-OM2	GUCN204	GUCN206	GUCN208	GUCN212	GUCN216	GUCN224
50/125-OM3	GUCN304	GUCN306	GUCN308	GUCN312	GUCN316	GUCN324
50/125-OM4	GUCN604	GUCN606	GUCN608	GUCN612	GUCN616	GUCN624
9/125 ITU G.652D	GUCN804	GUCN806	GUCN808	GUCN812	GUCN816	GUCN824
9/125 ITU G.655 C & D	GUCN704	GUCN706	GUCN708	GUCN712	GUCN716	GUCN724
<b>GUCB</b>						
62.5/125-OM1	GUCB104	GUCB106	GUCB108	GUCB112	GUCB116	GUCB124
50/125-OM2	GUCB204	GUCB206	GUCB208	GUCB212	GUCB216	GUCB224
50/125-OM3	GUCB304	GUCB306	GUCB308	GUCB312	GUCB316	GUCB324
50/125-OM4	GUCB604	GUCB606	GUCB608	GUCB612	GUCB616	GUCB624
9/125 ITU G.652D	GUCB804	GUCB806	GUCB808	GUCB812	GUCB816	GUCB824
9/125 ITU G.655 C & D	GUCB704	GUCB706	GUCB708	GUCB712	GUCB716	GUCB724
<b>GUCN • GUCB</b>						
Std. plywood reel (non-returnable)			Ø 1000 x 530 mm, Weight 18.0 kg			
Std. delivery length			2100 ± 100 m			

## Fiber Color Coding

No. 1	Red	No. 5	Green	No. 9	Orange	No. 13	Red + ring	No. 17	Green + ring	No. 21	Orange + ring
No. 2	Natural	No. 6	Violet	No. 10	Turquoise	No. 14	Natural + ring	No. 18	Violet + ring	No. 22	Turquoise + ring
No. 3	Yellow	No. 7	Brown	No. 11	Pink	No. 15	Yellow + ring	No. 19	Brown + ring	No. 23	Pink + ring
No. 4	Blue	No. 8	Black	No. 12	White	No. 16	Blue + ring	No. 20	Grey + ring	No. 24	White + ring

## Outdoor Central Loose Tube Cable with Corrugated Steel Tape, Single Jacket

GOCN, GOCB

A-DQ(ZN)(SR)2Y



### 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

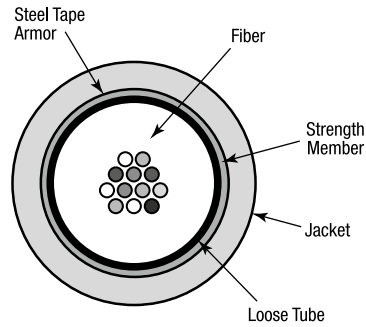
- Available in sizes from 4 to 24 fibers
- Jelly filled (non-dripping and silicon-free) loose tube with primary coated optical fibers ( $\text{Ø } 250 \pm 15 \mu\text{m}$ )
- High mechanical and full rodent protection provided by Corrugated Steel Tape (CST) armor
- Length marking in meters for easy determination of the cable length

### Specifications

IEC 60794-1-2	
Impact Resistance (E4):	3000 N
Min. Bend Radius dynamic (E6):	20 x $\text{Ø}$
Min. Bend Radius static (E11):	10 x $\text{Ø}$
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
– Transport/Storage	-30°C to +70°C
– Installation	-5°C to +50°C
– Operation	-30°C to +70°C
Watertightness (F5):	Pass



## Cross Section



## Characteristics

Loose Tube	Fiber Count	Diameter (mm)	Weight (kg/km)	Crush Resistance (kN/m)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
IEC 60794-1-2					E1	E1	
GOCN*xx	4 to 24	9.0	80	35	1500	700	1774
GOCB*xx	4 to 24	10.6	107	40	4220	2110	2242

## Ordering Information

Fiber Type/Count	4	6	8	12	16	24
<b>GOCN</b>						
62.5/125-OM1	GOCN104	GOCN106	GOCN108	GOCN112	GOCN116	GOCN124
50/125-OM2	GOCN204	GOCN206	GOCN208	GOCN212	GOCN216	GOCN224
50/125-OM3	GOCN304	GOCN306	GOCN308	GOCN312	GOCN316	GOCN324
50/125-OM4	GOCN604	GOCN606	GOCN608	GOCN612	GOCN616	GOCN624
9/125 ITU G.652D	GOCN804	GOCN806	GOCN808	GOCN812	GOCN816	GOCN824
9/125 ITU G.655 C & D	GOCN704	GOCN706	GOCN708	GOCN712	GOCN716	GOCN724
<b>GOCB</b>						
62.5/125-OM1	GOCB104	GOCB106	GOCB108	GOCB112	GOCB116	GOCB124
50/125-OM2	GOCB204	GOCB206	GOCB208	GOCB212	GOCB216	GOCB224
50/125-OM3	GOCB304	GOCB306	GOCB308	GOCB312	GOCB316	GOCB324
50/125-OM4	GOCB604	GOCB606	GOCB608	GOCB612	GOCB616	GOCB624
9/125 ITU G.652D	GOCB804	GOCB806	GOCB808	GOCB812	GOCB816	GOCB824
9/125 ITU G.655 C & D	GOCB704	GOCB706	GOCB708	GOCB712	GOCB716	GOCB724
<b>GOCN • GOCB</b>						
Std. plywood reel (non-returnable)			Ø 1250 x 688 mm, Weight 93.0 kg			
Std. delivery length			2100 ± 100 m			

## Fiber Color Coding

No. 1	Red	No. 5	Green	No. 9	Orange	No. 13	Red + ring	No. 17	Green + ring	No. 21	Orange + ring
No. 2	Natural	No. 6	Violet	No. 10	Turquoise	No. 14	Natural + ring	No. 18	Violet + ring	No. 22	Turquoise + ring
No. 3	Yellow	No. 7	Brown	No. 11	Pink	No. 15	Yellow + ring	No. 19	Brown + ring	No. 23	Pink + ring
No. 4	Blue	No. 8	Black	No. 12	White	No. 16	Blue + ring	No. 20	Grey + ring	No. 24	White + ring

**Universal Central Loose Tube Cable  
with Corrugated Steel Tape, Double Jacket**

GUDN, GUDB

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



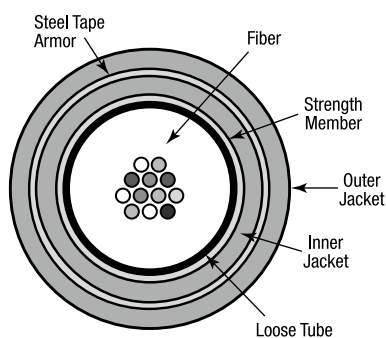
**Applications**

- 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**

- Available in sizes from 4 to 24 fibers
- Jelly filled (non-dripping and silicon-free) loose tube with primary coated optical fibers (Ø 250 ± 15 µm)
- High mechanical and full rodent protection provided by Corrugated Steel Tape (CST) armor
- Length marking in meters for easy determination of the cable length

**Cross Section**



**Specifications**

IEC 60794-1-2	
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
- Transport/Storage	-30°C to +70°C
- Installation	-5°C to +50°C
- Operation	-30°C to +70°C
Watertightness (F5):	Pass
Other	
Flame Retardant:	IEC 60332-3-22
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density:	IEC 61034-2





## Characteristics

Loose Tube	Fiber Count	Diameter (mm)	Weight (kg/km)	Crush Resistance (kN/m)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
IEC 60794-1-2					E1	E1	
GUDN*xx	4 to 24	11.0	180	35	1500	700	1550
GUDB*xx	4 to 24	13.0	233	40	4220	2110	2919

## Ordering Information

Fiber Type/Count	4	6	8	12	16	24
<b>GUDN</b>						
62.5/125-OM1	GUDN104	GUDN106	GUDN108	GUDN112	GUDN116	GUDN124
50/125-OM2	GUDN204	GUDN206	GUDN208	GUDN212	GUDN216	GUDN224
50/125-OM3	GUDN304	GUDN306	GUDN308	GUDN312	GUDN316	GUDN324
50/125-OM4	GUDN604	GUDN606	GUDN608	GUDN612	GUDN616	GUDN624
9/125 ITU G.652D	GUDN804	GUDN806	GUDN808	GUDN812	GUDN816	GUDN824
9/125 ITU G.655 C & D	GUDN704	GUDN706	GUDN708	GUDN712	GUDN716	GUDN724
<b>GUDB</b>						
62.5/125-OM1	GUDB104	GUDB106	GUDB108	GUDB112	GUDB116	GUDB124
50/125-OM2	GUDB204	GUDB206	GUDB208	GUDB212	GUDB216	GUDB224
50/125-OM3	GUDB304	GUDB306	GUDB308	GUDB312	GUDB316	GUDB324
50/125-OM4	GUDB604	GUDB606	GUDB608	GUDB612	GUDB616	GUDB624
9/125 ITU G.652D	GUDB804	GUDB806	GUDB808	GUDB812	GUDB816	GUDB824
9/125 ITU G.655 C & D	GUDB704	GUDB706	GUDB708	GUDB712	GUDB716	GUDB724
<b>GUDN • GUDB</b>						
Std. plywood reel (non-returnable)			Ø 1250 x 688 mm, Weight 93.0 kg			
Std. delivery length			2100 ± 100 m			

## Fiber Color Coding

No.		No.		No.		No.		No.		No.	
1	Red	5	Green	9	Orange	13	Red + ring	17	Green + ring	21	Orange + ring
2	Natural	6	Violet	10	Turquoise	14	Natural + ring	18	Violet + ring	22	Turquoise + ring
3	Yellow	7	Brown	11	Pink	15	Yellow + ring	19	Brown + ring	23	Pink + ring
4	Blue	8	Black	12	White	16	Blue + ring	20	Grey + ring	24	White + ring

**Outdoor Central Loose Tube Cable  
with Corrugated Steel Tape, Double Jacket**

GODN, GODB

A-DQ(ZN)2Y(SR)2Y



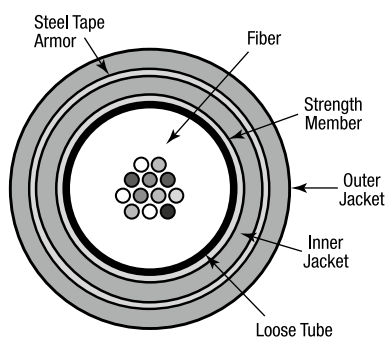
**Applications**

- 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**

- Available in sizes from 4 to 24 fibers
- Jelly filled (non-dripping and silicon-free) loose tube with primary coated optical fibers (Ø 250 ± 15 µm)
- High mechanical and full rodent protection provided by Corrugated Steel Tape (CST) armor
- Length marking in meters for easy determination of the cable length

**Cross Section**



**Specifications**

IEC 60794-1-2	
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	10 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
- Transport/Storage	-30°C to +70°C
- Installation	-5°C to +50°C
- Operation	-30°C to +70°C
Watertightness (F5):	Pass



## Characteristics

Loose Tube	Fiber Count	Diameter (mm)	Weight (kg/km)	Crush Resistance (kN/m)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
IEC 60794-1-2					E1	E1	
GODN*xx	4 to 24	11.0	144	35	1500	700	2596
GODB*xx	4 to 24	13.0	178	40	4220	2110	4980

## Ordering Information

Fiber Type/Count	4	6	8	12	16	24
<b>GODN</b>						
62.5/125-OM1	GODN104	GODN106	GODN108	GODN112	GODN116	GODN124
50/125-OM2	GODN204	GODN206	GODN208	GODN212	GODN216	GODN224
50/125-OM3	GODN304	GODN306	GODN308	GODN312	GODN316	GODN324
50/125-OM4	GODN604	GODN606	GODN608	GODN612	GODN616	GODN624
9/125 ITU G.652D	GODN804	GODN806	GODN808	GODN812	GODN816	GODN824
9/125 ITU G.655 C & D	GODN704	GODN706	GODN708	GODN712	GODN716	GODN724
<b>GODB</b>						
62.5/125-OM1	GODB104	GODB106	GODB108	GODB112	GODB116	GODB124
50/125-OM2	GODB204	GODB206	GODB208	GODB212	GODB216	GODB224
50/125-OM3	GODB304	GODB306	GODB308	GODB312	GODB316	GODB324
50/125-OM4	GODB604	GODB606	GODB608	GODB612	GODB616	GODB624
9/125 ITU G.652D	GODB804	GODB806	GODB808	GODB812	GODB816	GODB824
9/125 ITU G.655 C & D	GODB704	GODB706	GODB708	GODB712	GODB716	GODB724
<b>GODN • GODB</b>						
Std. plywood reel (non-returnable)			Ø 1250 x 688 mm, Weight 93.0 kg			
Std. delivery length			2100 ± 100 m			

## Fiber Color Coding

No.		No.		No.		No.		No.		No.	
1	Red	5	Green	9	Orange	13	Red + ring	17	Green + ring	21	Orange + ring
2	Natural	6	Violet	10	Turquoise	14	Natural + ring	18	Violet + ring	22	Turquoise + ring
3	Yellow	7	Brown	11	Pink	15	Yellow + ring	19	Brown + ring	23	Pink + ring
4	Blue	8	Black	12	White	16	Blue + ring	20	Grey + ring	24	White + ring

**Universal Central Loose Tube Cable  
with Steel Wire Braid, Double Jacket**

GUHA

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



**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**

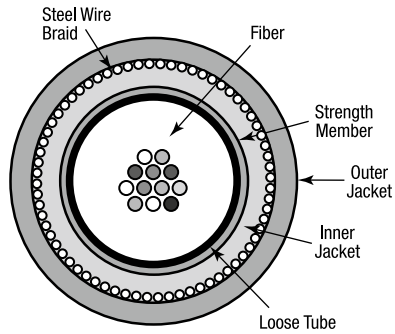
- Available in sizes from 4 to 24 fibers
- Jelly filled (non-dripping and silicon-free) loose tube with primary coated optical fibers (Ø 250 ± 15 µm)
- High mechanical and full rodent protection provided by Steel Wire Braid (SWB) armor
- Length marking in meters for easy determination of the cable length

**Specifications**

IEC 60794-1-2	
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
– Transport/Storage	-30°C to +70°C
– Installation	-5°C to +50°C
– Operation	-30°C to +70°C
Watertightness (F5):	Pass
Other	
Flame Retardant:	IEC 60332-3-25
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density:	IEC 61034-2



## Cross Section



## Characteristics

Loose Tube	Fiber Count	Diameter (mm)	Weight (kg/km)	Crush Resistance (kN/m)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
<b>IEC 60794-1-2</b>					<b>E1</b>	<b>E1</b>	
<b>GUHA*xx</b>	4 to 24	10.0	127	25	1500	700	1509

## Ordering Information

Fiber Type/Count	4	6	8	12	16	24
62.5/125-OM1	<b>GUHA104</b>	<b>GUHA106</b>	<b>GUHA108</b>	<b>GUHA112</b>	<b>GUHA116</b>	<b>GUHA124</b>
50/125-OM2	<b>GUHA204</b>	<b>GUHA206</b>	<b>GUHA208</b>	<b>GUHA212</b>	<b>GUHA216</b>	<b>GUHA224</b>
50/125-OM3	<b>GUHA304</b>	<b>GUHA306</b>	<b>GUHA308</b>	<b>GUHA312</b>	<b>GUHA316</b>	<b>GUHA324</b>
50/125-OM4	<b>GUHA604</b>	<b>GUHA606</b>	<b>GUHA608</b>	<b>GUHA612</b>	<b>GUHA616</b>	<b>GUHA624</b>
9/125 ITU G.652D	<b>GUHA804</b>	<b>GUHA806</b>	<b>GUHA808</b>	<b>GUHA812</b>	<b>GUHA816</b>	<b>GUHA824</b>
9/125 ITU G.655 C & D	<b>GUHA704</b>	<b>GUHA706</b>	<b>GUHA708</b>	<b>GUHA712</b>	<b>GUHA716</b>	<b>GUHA724</b>
Std. plywood reel (non-returnable)	Ø 1000 x 588 mm, Weight 50.0 kg					
Std. delivery length	2100 ± 100 m					

## Fiber Color Coding

No. 1	Red	No. 5	Green	No. 9	Orange	No. 13	Red + ring	No. 17	Green + ring	No. 21	Orange + ring
No. 2	Natural	No. 6	Violet	No. 10	Turquoise	No. 14	Natural + ring	No. 18	Violet + ring	No. 22	Turquoise + ring
No. 3	Yellow	No. 7	Brown	No. 11	Pink	No. 15	Yellow + ring	No. 19	Brown + ring	No. 23	Pink + ring
No. 4	Blue	No. 8	Black	No. 12	White	No. 16	Blue + ring	No. 20	Grey + ring	No. 24	White + ring

**Outdoor Central Loose Tube Cable  
with Steel Wire Braid, Double Jacket**

GOHN

A-DQ(ZN)2Y(SR)2Y



**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**

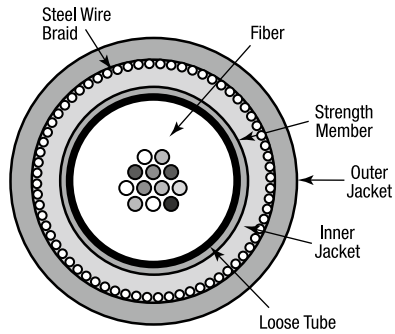
- Available in sizes from 4 to 24 fibers
- Jelly filled (non-dripping and silicon-free) loose tube with primary coated optical fibers (Ø 250 ± 15 µm)
- High mechanical and full rodent protection provided by Steel Wire Braid (SWB) armor
- Length marking in meters for easy determination of the cable length

**Specifications**

IEC 60794-1-2	
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
– Transport/Storage	-30°C to +70°C
– Installation	-5°C to +50°C
– Operation	-30°C to +70°C
Watertightness (F5):	Pass



## Cross Section



## Characteristics

Loose Tube	Fiber Count	Diameter (mm)	Weight (kg/km)	Crush Resistance (kN/m)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
<b>IEC 60794-1-2</b>					<b>E1</b>	<b>E1</b>	
<b>GOHN*xx</b>	4 to 24	10.0	98	25	1500	700	2503

## Ordering Information

Fiber Type/Count	4	6	8	12	16	24
62.5/125-OM1	<b>GOHN104</b>	<b>GOHN106</b>	<b>GOHN108</b>	<b>GOHN112</b>	<b>GOHN116</b>	<b>GOHN124</b>
50/125-OM2	<b>GOHN204</b>	<b>GOHN206</b>	<b>GOHN208</b>	<b>GOHN212</b>	<b>GOHN216</b>	<b>GOHN224</b>
50/125-OM3	<b>GOHN304</b>	<b>GOHN306</b>	<b>GOHN308</b>	<b>GOHN312</b>	<b>GOHN316</b>	<b>GOHN324</b>
50/125-OM4	<b>GOHN604</b>	<b>GOHN606</b>	<b>GOHN608</b>	<b>GOHN612</b>	<b>GOHN616</b>	<b>GOHN624</b>
9/125 ITU G.652D	<b>GOHN804</b>	<b>GOHN806</b>	<b>GOHN808</b>	<b>GOHN812</b>	<b>GOHN816</b>	<b>GOHN824</b>
9/125 ITU G.655 C & D	<b>GOHN704</b>	<b>GOHN706</b>	<b>GOHN708</b>	<b>GOHN712</b>	<b>GOHN716</b>	<b>GOHN724</b>
Std. plywood reel (non-returnable)	Ø 1000 x 588 mm, Weight 50.0 kg					
Std. delivery length	2100 ± 100 m					

## Fiber Color Coding

No. 1	Red	No. 5	Green	No. 9	Orange	No. 13	Red + ring	No. 17	Green + ring	No. 21	Orange + ring
No. 2	Natural	No. 6	Violet	No. 10	Turquoise	No. 14	Natural + ring	No. 18	Violet + ring	No. 22	Turquoise + ring
No. 3	Yellow	No. 7	Brown	No. 11	Pink	No. 15	Yellow + ring	No. 19	Brown + ring	No. 23	Pink + ring
No. 4	Blue	No. 8	Black	No. 12	White	No. 16	Blue + ring	No. 20	Grey + ring	No. 24	White + ring

**Universal Central Loose Tube Cable  
with Steel Wire Armor, Double Jacket**

**GUWN, GUWB**

**A/I-DQ(ZN)H(SR)H**



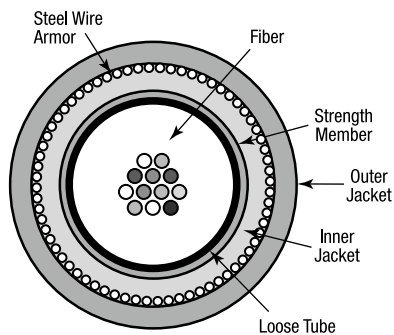
**Applications**

- For outdoor and indoor use in structured (data) wiring systems such as industrial backbone, campus backbone, building backbone (riser) and/or horizontal cabling
- For outdoor and indoor use in networks for industrial, 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**

- Available in sizes from 4 to 24 fibers
- Jelly filled (non-dripping and silicon-free) loose tube with primary coated optical fibers (Ø 250 ± 15 µm)
- High mechanical and full rodent protection provided by Steel Wire Armor (SWA)
- Length marking in meters for easy determination of the cable length

**Cross Section**



**Specifications**

<b>IEC 60794-1-2</b>	
Min. Bend Radius dynamic (E6):	15 x Ø
Min. Bend Radius static (E11):	10 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
- Transport/Storage	-30°C to +70°C
- Installation	-5°C to +50°C
- Operation	-30°C to +70°C
Watertightness (F5):	Pass
<b>Other</b>	
Flame Retardant:	
- GUWN	IEC 60332-3-25
- GUWB	IEC 60332-3-24
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density:	IEC 61034-2





## Characteristics

Loose Tube	Fiber Count	Diameter (mm)	Steel Wire Diameter (mm)	Weight (kg/km)	Crush Resistance (kN/m)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
<b>IEC 60794-1-2</b>						<b>E1</b>	<b>E1</b>	
<b>GUWN*xx</b>	4 to 24	9.6	0.6	155	45	1500	700	1500
<b>GUWB*xx</b>	4 to 24	13.8	0.9	325	50	4220	2110	2625

## Ordering Information

Fiber Type/Count	4	6	8	12	16	24
<b>GUWN</b>						
62.5/125-OM1	<b>GUWN104</b>	<b>GUWN106</b>	<b>GUWN108</b>	<b>GUWN112</b>	<b>GUWN116</b>	<b>GUWN124</b>
50/125-OM2	<b>GUWN204</b>	<b>GUWN206</b>	<b>GUWN208</b>	<b>GUWN212</b>	<b>GUWN216</b>	<b>GUWN224</b>
50/125-OM3	<b>GUWN304</b>	<b>GUWN306</b>	<b>GUWN308</b>	<b>GUWN312</b>	<b>GUWN316</b>	<b>GUWN324</b>
50/125-OM4	<b>GUWN604</b>	<b>GUWN606</b>	<b>GUWN608</b>	<b>GUWN612</b>	<b>GUWN616</b>	<b>GUWN624</b>
9/125 ITU G.652D	<b>GUWN804</b>	<b>GUWN806</b>	<b>GUWN808</b>	<b>GUWN812</b>	<b>GUWN816</b>	<b>GUWN824</b>
9/125 ITU G.655 C & D	<b>GUWN704</b>	<b>GUWN706</b>	<b>GUWN708</b>	<b>GUWN712</b>	<b>GUWN716</b>	<b>GUWN724</b>
Std. plywood reel (non-returnable)	Ø 1000 x 588 mm, Weight 50.0 kg					
Std. delivery length	2100 ± 100 m					
<b>GUWB</b>						
62.5/125-OM1	<b>GUWB104</b>	<b>GUWB106</b>	<b>GUWB108</b>	<b>GUWB112</b>	<b>GUWB116</b>	<b>GUWB124</b>
50/125-OM2	<b>GUWB204</b>	<b>GUWB206</b>	<b>GUWB208</b>	<b>GUWB212</b>	<b>GUWB216</b>	<b>GUWB224</b>
50/125-OM3	<b>GUWB304</b>	<b>GUWB306</b>	<b>GUWB308</b>	<b>GUWB312</b>	<b>GUWB316</b>	<b>GUWB324</b>
50/125-OM4	<b>GUWB604</b>	<b>GUWB606</b>	<b>GUWB608</b>	<b>GUWB612</b>	<b>GUWB616</b>	<b>GUWB624</b>
9/125 ITU G.652D	<b>GUWB804</b>	<b>GUWB806</b>	<b>GUWB808</b>	<b>GUWB812</b>	<b>GUWB816</b>	<b>GUWB824</b>
9/125 ITU G.655 C & D	<b>GUWB704</b>	<b>GUWB706</b>	<b>GUWB708</b>	<b>GUWB712</b>	<b>GUWB716</b>	<b>GUWB724</b>
Std. plywood reel (non-returnable)	Ø 1250 x 688 mm, Weight 93.0 kg					
Std. delivery length	2100 ± 100 m					

## Fiber Color Coding

No.		No.		No.		No.		No.		No.	
1	Red	5	Green	9	Orange	13	Red + ring	17	Green + ring	21	Orange + ring
2	Natural	6	Violet	10	Turquoise	14	Natural + ring	18	Violet + ring	22	Turquoise + ring
3	Yellow	7	Brown	11	Pink	15	Yellow + ring	19	Brown + ring	23	Pink + ring
4	Blue	8	Black	12	White	16	Blue + ring	20	Grey + ring	24	White + ring

**Outdoor Central Loose Tube Cable  
with Steel Wire Armor, Double Jacket**

GOWN, GOWB

A-DQ(ZN)2Y(SR)2Y



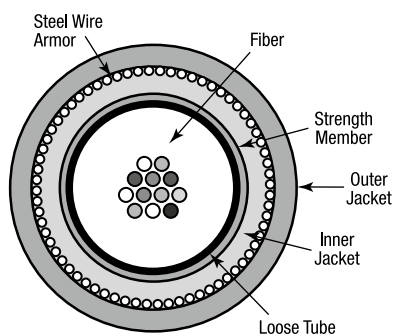
**Applications**

- For outdoor and indoor use in structured (data) wiring systems such as industrial backbone, campus backbone, building backbone (riser) and/or horizontal cabling
- For outdoor and indoor use in networks for industrial, 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**

- Available in sizes from 4 to 24 fibers
- Jelly filled (non-dripping and silicon-free) loose tube with primary coated optical fibers (Ø 250 ± 15 µm)
- High mechanical and full rodent protection provided by Steel Wire Armor (SWA)
- Length marking in meters for easy determination of the cable length

**Cross Section**



**Specifications**

IEC 60794-1-2	
Min. Bend Radius dynamic (E6):	15 x Ø
Min. Bend Radius static (E11):	10 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
- Transport/Storage	-30°C to +70°C
- Installation	-5°C to +50°C
- Operation	-30°C to +70°C
Watertightness (F5):	Pass



## Characteristics

Loose Tube	Fiber Count	Diameter (mm)	Steel Wire Diameter (mm)	Weight (kg/km)	Crush Resistance (kN/m)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
IEC 60794-1-2						E1	E1	
GOWN*xx	4 to 24	9.6	0.6	125	45	1500	700	2505
GOWB*xx	4 to 24	13.5	0.9	270	50	4220	2110	2625

## Ordering Information

Fiber Type/Count	4	6	8	12	16	24
<b>GOWN</b>						
62.5/125-OM1	GOWN104	GOWN106	GOWN108	GOWN112	GOWN116	GOWN124
50/125-OM2	GOWN204	GOWN206	GOWN208	GOWN212	GOWN216	GOWN224
50/125-OM3	GOWN304	GOWN306	GOWN308	GOWN312	GOWN316	GOWN324
50/125-OM4	GOWN604	GOWN606	GOWN608	GOWN612	GOWN616	GOWN624
9/125 ITU G.652D	GOWN804	GOWN806	GOWN808	GOWN812	GOWN816	GOWN824
9/125 ITU G.655 C & D	GOWN704	GOWN706	GOWN708	GOWN712	GOWN716	GOWN724
Std. plywood reel (non-returnable)	Ø 1000 x 588 mm, Weight 50.0 kg					
Std. delivery length	2100 ± 100 m					
<b>GOWB</b>						
62.5/125-OM1	GOWB104	GOWB106	GOWB108	GOWB112	GOWB116	GOWB124
50/125-OM2	GOWB204	GOWB206	GOWB208	GOWB212	GOWB216	GOWB224
50/125-OM3	GOWB304	GOWB306	GOWB308	GOWB312	GOWB316	GOWB324
50/125-OM4	GOWB604	GOWB606	GOWB608	GOWB612	GOWB616	GOWB624
9/125 ITU G.652D	GOWB804	GOWB806	GOWB808	GOWB812	GOWB816	GOWB824
9/125 ITU G.655 C & D	GOWB704	GOWB706	GOWB708	GOWB712	GOWB716	GOWB724
Std. plywood reel (non-returnable)	Ø 1250 x 688 mm, Weight 93.0 kg					
Std. delivery length	2100 ± 100 m					

## Fiber Color Coding

No.		No.		No.		No.		No.		No.	
1	Red	5	Green	9	Orange	13	Red + ring	17	Green + ring	21	Orange + ring
2	Natural	6	Violet	10	Turquoise	14	Natural + ring	18	Violet + ring	22	Turquoise + ring
3	Yellow	7	Brown	11	Pink	15	Yellow + ring	19	Brown + ring	23	Pink + ring
4	Blue	8	Black	12	White	16	Blue + ring	20	Grey + ring	24	White + ring

**Universal Central Loose Tube Cable  
with Fiber Reinforced Plastic Armor, Single Jacket**

GUFN

A/I-DQBH



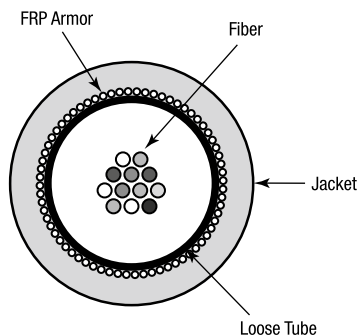
**Applications**

- For outdoor and indoor use in structured (data) wiring systems such as industrial backbone, campus backbone, building backbone (riser) and/or horizontal cabling
- For outdoor and indoor use in networks for industrial, 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**

- Available in sizes from 4 to 24 fibers
- Jelly filled (non-dripping and silicon-free) loose tube with primary coated optical fibers ( $\varnothing 250 \pm 15 \mu\text{m}$ )
- High mechanical and full rodent protection provided by Fiber Reinforced Plastic (FRP) armor
- These cables are all dielectric and therefore immune to lightning and electromagnetic interference (EMC-safe), spark-free and require no grounding
- Length marking in meters for easy determination of the cable length

**Cross Section**



**Specifications**

IEC 60794-1-2	
Min. Bend Radius dynamic (E6):	15 x $\varnothing$
Min. Bend Radius static (E11):	10 x $\varnothing$
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
- Transport/Storage	-30°C to +70°C
- Installation	-5°C to +50°C
- Operation	-30°C to +70°C
Watertightness (F5):	Pass
Other	
Flame Retardant:	IEC 60332-1
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density:	IEC 61034-2



### Characteristics

Loose Tube	Fiber Count	Diameter (mm)	FRP Diameter (mm)	Weight (kg/km)	Crush Resistance (kN/m)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
IEC 60794-1-2						E1	E1	
GUFN*xx	4 to 24	7.4	1.0	62	45	4000	2000	1030

### Ordering Information

Fiber Type/Count	4	6	8	12	16	24
<b>GUFN</b>						
62.5/125-OM1	<b>GUFN104</b>	<b>GUFN106</b>	<b>GUFN108</b>	<b>GUFN112</b>	<b>GUFN116</b>	<b>GUFN124</b>
50/125-OM2	<b>GUFN204</b>	<b>GUFN206</b>	<b>GUFN208</b>	<b>GUFN212</b>	<b>GUFN216</b>	<b>GUFN224</b>
50/125-OM3	<b>GUFN304</b>	<b>GUFN306</b>	<b>GUFN308</b>	<b>GUFN312</b>	<b>GUFN316</b>	<b>GUFN324</b>
50/125-OM4	<b>GUFN604</b>	<b>GUFN606</b>	<b>GUFN608</b>	<b>GUFN612</b>	<b>GUFN616</b>	<b>GUFN624</b>
9/125 ITU G.652D	<b>GUFN804</b>	<b>GUFN806</b>	<b>GUFN808</b>	<b>GUFN812</b>	<b>GUFN816</b>	<b>GUFN824</b>
9/125 ITU G.655 C & D	<b>GUFN704</b>	<b>GUFN706</b>	<b>GUFN708</b>	<b>GUFN712</b>	<b>GUFN716</b>	<b>GUFN724</b>
Std. plywood reel (non-returnable)				Ø 1000 x 588 mm, Weight 50.0 kg		
Std. delivery length	2100 ± 100 m					

### Fiber Color Coding

No.		No.		No.		No.		No.		No.	
1	Red	5	Green	9	Orange	13	Red + ring	17	Green + ring	21	Orange + ring
2	Natural	6	Violet	10	Turquoise	14	Natural + ring	18	Violet + ring	22	Turquoise + ring
3	Yellow	7	Brown	11	Pink	15	Yellow + ring	19	Brown + ring	23	Pink + ring
4	Blue	8	Black	12	White	16	Blue + ring	20	Grey + ring	24	White + ring

**Outdoor Central Loose Tube Cable  
with Fiber Reinforced Plastic Armor, Single Jacket**

GOFN, GOFB

A-DQB2Y



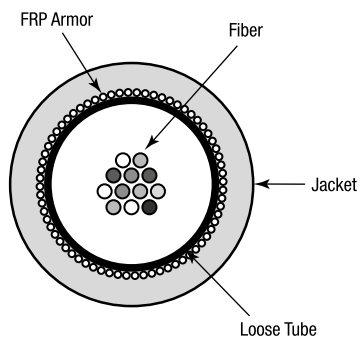
**Applications**

- For outdoor and indoor use in structured (data) wiring systems such as industrial backbone, campus backbone, building backbone (riser) and/or horizontal cabling
- For outdoor and indoor use in networks for industrial, 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**

- Available in sizes from 4 to 24 fibers
- Jelly filled (non-dripping and silicon-free) loose tube with primary coated optical fibers (Ø 250 ± 15 µm)
- High mechanical and full rodent protection provided by Fiber Reinforced Plastic (FRP) armor
- Length marking in meters for easy determination of the cable length

**Cross Section**



**Specifications**

IEC 60794-1-2	
Min. Bend Radius dynamic (E6):	15 x Ø
Min. Bend Radius static (E11):	10 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
- Transport/Storage	-30°C to +70°C
- Installation	-5°C to +50°C
- Operation	-30°C to +70°C
Watertightness (F5):	Pass



## Characteristics

Loose Tube	Fiber Count	Diameter (mm)	FRP Diameter (mm)	Weight (kg/km)	Crush Resistance (kN/m)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
<b>IEC 60794-1-2</b>						<b>E1</b>	<b>E1</b>	
<b>GOFN*xx</b>	4 to 24	7.4	1.0	51	45	4000	2000	1430
<b>GOFB*xx</b>	4 to 24	9.0	1.0	76	50	8000	4000	2410

## Ordering Information

Fiber Type/Count	4	6	8	12	16	24
<b>GOFN</b>						
62.5/125-OM1	<b>GOFN104</b>	<b>GOFN106</b>	<b>GOFN108</b>	<b>GOFN112</b>	<b>GOFN116</b>	<b>GOFN124</b>
50/125-OM2	<b>GOFN204</b>	<b>GOFN206</b>	<b>GOFN208</b>	<b>GOFN212</b>	<b>GOFN216</b>	<b>GOFN224</b>
50/125-OM3	<b>GOFN304</b>	<b>GOFN306</b>	<b>GOFN308</b>	<b>GOFN312</b>	<b>GOFN316</b>	<b>GOFN324</b>
50/125-OM4	<b>GOFN604</b>	<b>GOFN606</b>	<b>GOFN608</b>	<b>GOFN612</b>	<b>GOFN616</b>	<b>GOFN624</b>
9/125 ITU G.652D	<b>GOFN804</b>	<b>GOFN806</b>	<b>GOFN808</b>	<b>GOFN812</b>	<b>GOFN816</b>	<b>GOFN824</b>
9/125 ITU G.655 C & D	<b>GOFN704</b>	<b>GOFN706</b>	<b>GOFN708</b>	<b>GOFN712</b>	<b>GOFN716</b>	<b>GOFN724</b>
Std. plywood reel (non-returnable)	Ø 1000 x 588 mm, Weight 50.0 kg					
Std. delivery length	2100 ± 100 m					
<b>GOFB</b>						
62.5/125-OM1	<b>GOFB104</b>	<b>GOFB106</b>	<b>GOFB108</b>	<b>GOFB112</b>	<b>GOFB116</b>	<b>GOFB124</b>
50/125-OM2	<b>GOFB204</b>	<b>GOFB206</b>	<b>GOFB208</b>	<b>GOFB212</b>	<b>GOFB216</b>	<b>GOFB224</b>
50/125-OM3	<b>GOFB304</b>	<b>GOFB306</b>	<b>GOFB308</b>	<b>GOFB312</b>	<b>GOFB316</b>	<b>GOFB324</b>
50/125-OM4	<b>GOFB604</b>	<b>GOFB606</b>	<b>GOFB608</b>	<b>GOFB612</b>	<b>GOFB616</b>	<b>GOFB624</b>
9/125 ITU G.652D	<b>GOFB804</b>	<b>GOFB806</b>	<b>GOFB808</b>	<b>GOFB812</b>	<b>GOFB816</b>	<b>GOFB824</b>
9/125 ITU G.655 C & D	<b>GOFB704</b>	<b>GOFB706</b>	<b>GOFB708</b>	<b>GOFB712</b>	<b>GOFB716</b>	<b>GOFB724</b>
Std. plywood reel (non-returnable)	Ø 1250 x 688 mm, Weight 93.0 kg					
Std. delivery length	2100 ± 100 m					

## Fiber Color Coding

No. 1	Red	No. 5	Green	No. 9	Orange	No. 13	Red + ring	No. 17	Green + ring	No. 21	Orange + ring
No. 2	Natural	No. 6	Violet	No. 10	Turquoise	No. 14	Natural + ring	No. 18	Violet + ring	No. 22	Turquoise + ring
No. 3	Yellow	No. 7	Brown	No. 11	Pink	No. 15	Yellow + ring	No. 19	Brown + ring	No. 23	Pink + ring
No. 4	Blue	No. 8	Black	No. 12	White	No. 16	Blue + ring	No. 20	Grey + ring	No. 24	White + ring

## Universal Multi Loose Tube Cable with Rodent Protection, Single Jacket

GCRG, GCRD, GCRE, GCRF

A/I-DQ(ZN)BH



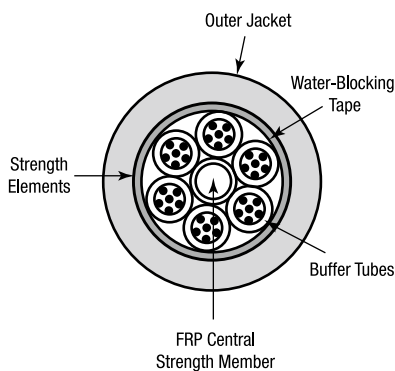
### Applications

- 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

- Available in sizes from 2 to 144 fibers
- Jelly filled (non-dripping and silicon-free) loose tubes with primary coated optical fibers ( $\text{Ø } 250 \pm 15 \mu\text{m}$ )
- Full dielectric construction, no grounding required
- Installation-friendly thanks to the cable core which is kept free of grease (dry interstices)
- Rodent protected by means of Glass Yarn Strength Elements
- Length marking in meters for easy determination of the cable length

### Cross Section



### Specifications

IEC 60794-1-2	
Crush Resistance (E3):	20 kN/m
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
- Transport/Storage	-30°C to +70°C
- Installation	-5°C to +50°C
- Operation	-30°C to +70°C
Watertightness (F5):	Pass
Other	
Flame Retardant:	IEC 60332-3-24
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density (GCRG, GCRD):	IEC 61034-2





## Characteristics

Loose Tube	Fiber Count	Diameter Tube (mm)	Max. Fibers per Tube	Water Tightness in Core	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
IEC 60794-1-2							E1	E1	
GCRG*xx	6 to 36	1.9	6	Dry	11.8	159	6000	3000	2500
GCRD*xx	12 to 72	2.5	12	Dry	13.7	169	7000	3500	3000
GCRE*xx	84 to 96	2.5	12	Dry	15.3	215	8000	4000	3200
GCRF*xx	108 to 144	2.5	12	Dry	18.5	276	8000	4000	5900

## Ordering Information

Fiber Type/Count	Dry Core				
	6	12	18	24	36
62.5/125-OM1	GCRG106	GCRG112	GCRG118	GCRG124	GCRG136
50/125-OM2	GCRG206	GCRG212	GCRG218	GCRG224	GCRG236
50/125-OM3	GCRG306	GCRG312	GCRG318	GCRG324	GCRG336
50/125-OM4	GCRG606	GCRG612	GCRG618	GCRG624	GCRG636
9/125 ITU G.652D	GCRG806	GCRG812	GCRG818	GCRG824	GCRG836
9/125 ITU G.655 C & D	GCRG706	GCRG712	GCRG718	GCRG724	GCRG736
Std. plywood reel (non-returnable)	Ø 1250 x 688 mm, Weight 93.0 kg				
Std. delivery length	2100 ± 100 m				

Fiber Type/Count	Dry Core					
	12	24	36	48	60	72
62.5/125-OM1	GCRD112	GCRD124	GCRD136	GCRD148	GCRD160	GCRD172
50/125-OM2	GCRD212	GCRD224	GCRD236	GCRD248	GCRD260	GCRD272
50/125-OM3	GCRD312	GCRD324	GCRD336	GCRD348	GCRD360	GCRD372
50/125-OM4	GCRD612	GCRD624	GCRD636	GCRD648	GCRD660	GCRD672
9/125 ITU G.652D	GCRD812	GCRD824	GCRD836	GCRD848	GCRD860	GCRD872
9/125 ITU G.655 C & D	GCRD712	GCRD724	GCRD736	GCRD748	GCRD760	GCRD772
Std. plywood reel (non-returnable)	Ø 1250 x 688 mm, Weight 93.0 kg					
Std. delivery length	2100 ± 100 m					

## Ordering Information

Fiber Type/Count	Dry Core	
	96	144
62.5/125-OM1	GCRE196	GCRE144
50/125-OM2	GCRE296	GCRE244
50/125-OM3	GCRE396	GCRF344
50/125-OM4	GCRE696	GCRF644
9/125 ITU G.652D	GCRE896	GCRF844
9/125 ITU G.655 C & D	GCRE796	GCRF744
Std. plywood reel (non-returnable)	Ø 1400 x 900 mm, Weight 120.0 kg	
Std. delivery length	2100 ± 100 m	

## Fiber Color Coding

No.		No.		No.	
1	Red	11	White	21	Grey + ring
2	Green	12	Aqua	22	Brown + ring
3	Blue	13	Red + ring	23	White + ring
4	Yellow	14	Green + ring	24	Aqua + ring
5	Violet	15	Blue + ring		
6	Pink	16	Yellow + ring		
7	Orange	17	Violet + ring		
8	Black	18	Pink + ring		
9	Grey	19	Orange + ring		
10	Brown	20	Black + ring		

Tube Color Coding	
No.	
1	Red
2	Green
3 to 12	White

**Outdoor Multi Loose Tube Cable with Rodent Protection, Single Jacket**

GBRG, GBRD, GBRE, GBRF  
GDRG, GDRD, GDRE, GDRF

A-DQ(ZN)B2Y  
A-DF(ZN)B2Y



**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**

- Available in sizes from 2 to 144 fibers
- Jelly filled (non-dripping and silicon-free) loose tubes with primary coated optical fibers ( $\text{Ø } 250 \pm 15 \mu\text{m}$ )
- Full dielectric construction, no grounding required
- Installation-friendly thanks to the cable core which is kept free of grease (dry interstices) for GBR types
- Rodent protected by means of Glass Yarn Strength Elements
- Length marking in meters for easy determination of the cable length

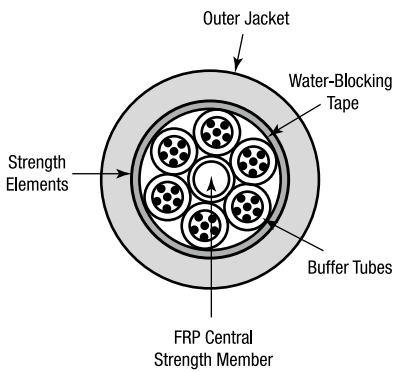
**Specifications**

**IEC 60794-1-2**

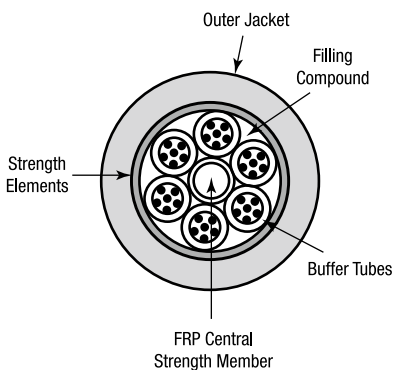
Crush Resistance (E3):	20 kN/m
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
- Transport/Storage	-30°C to +70°C
- Installation	-5°C to +50°C
- Operation	-30°C to +70°C
Watertightness (F5):	Pass

**Cross Section**

**GBR**



**GDR**





## Characteristics

Loose Tube	Fiber Count	Diameter Tube (mm)	Max. Fibers per Tube	Water Tightness in Core	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
<b>IEC 60794-1-2</b>							<b>E1</b>	<b>E1</b>	
<b>GBRG*xx</b>	6 to 36	1.9	6	Dry	11.8	105	6000	3000	3200
<b>GDRG*xx</b>	6 to 36	1.9	6	Filled	11.8	107	6000	3000	3600
<b>GBRD*xx</b>	12 to 72	2.5	12	Dry	13.7	145	7000	3500	4600
<b>GDRD*xx</b>	12 to 72	2.5	12	Filled	13.7	147	7000	3500	5000
<b>GBRE*xx</b>	84 to 96	2.5	12	Dry	15.3	170	8000	4000	4900
<b>GDRE*xx</b>	84 to 96	2.5	12	Filled	15.3	174	8000	4000	5500
<b>GBRF*xx</b>	108 to 144	2.5	12	Dry	18.5	248	8000	4000	7700
<b>GDRF*xx</b>	108 to 144	2.5	12	Filled	18.5	254	8000	4000	8600

## Ordering Information

Fiber Type/Count	Dry Core					Filled Core				
	6	12	18	24	36	6	12	18	24	36
62.5/125-OM1	<b>GBRG106</b>	<b>GBRG112</b>	<b>GBRG118</b>	<b>GBRG124</b>	<b>GBRG136</b>	<b>GDRG106</b>	<b>GDRG112</b>	<b>GDRG118</b>	<b>GDRG124</b>	<b>GDRG136</b>
50/125-OM2	<b>GBRG206</b>	<b>GBRG212</b>	<b>GBRG218</b>	<b>GBRG224</b>	<b>GBRG236</b>	<b>GDRG206</b>	<b>GDRG212</b>	<b>GDRG218</b>	<b>GDRG224</b>	<b>GDRG236</b>
50/125-OM3	<b>GBRG306</b>	<b>GBRG312</b>	<b>GBRG318</b>	<b>GBRG324</b>	<b>GBRG336</b>	<b>GDRG306</b>	<b>GDRG312</b>	<b>GDRG318</b>	<b>GDRG324</b>	<b>GDRG336</b>
50/125-OM4	<b>GBRG606</b>	<b>GBRG612</b>	<b>GBRG618</b>	<b>GBRG624</b>	<b>GBRG636</b>	<b>GDRG606</b>	<b>GDRG612</b>	<b>GDRG618</b>	<b>GDRG624</b>	<b>GDRG636</b>
9/125 ITU G.652D	<b>GBRG806</b>	<b>GBRG812</b>	<b>GBRG818</b>	<b>GBRG824</b>	<b>GBRG836</b>	<b>GDRG806</b>	<b>GDRG812</b>	<b>GDRG818</b>	<b>GDRG824</b>	<b>GDRG836</b>
9/125 ITU G.655 C & D	<b>GBRG706</b>	<b>GBRG712</b>	<b>GBRG718</b>	<b>GBRG724</b>	<b>GBRG736</b>	<b>GDRG706</b>	<b>GDRG712</b>	<b>GDRG718</b>	<b>GDRG724</b>	<b>GDRG736</b>
Std. plywood reel (non-returnable)	Ø 1250 x 688 mm, Weight 93.0 kg					Ø 1250 x 688 mm, Weight 93.0 kg				
Std. delivery length	2100 ± 100 m					2100 ± 100 m				

Fiber Type/Count	Dry Core						Filled Core					
	12	24	36	48	60	72	12	24	36	48	60	72
62.5/125-OM1	<b>GBRD112</b>	<b>GBRD124</b>	<b>GBRD136</b>	<b>GBRD148</b>	<b>GBRD160</b>	<b>GBRD172</b>	<b>GDRD112</b>	<b>GDRD124</b>	<b>GDRD136</b>	<b>GDRD148</b>	<b>GDRD160</b>	<b>GDRD172</b>
50/125-OM2	<b>GBRD212</b>	<b>GBRD224</b>	<b>GBRD236</b>	<b>GBRD248</b>	<b>GBRD260</b>	<b>GBRD272</b>	<b>GDRD212</b>	<b>GDRD224</b>	<b>GDRD236</b>	<b>GDRD248</b>	<b>GDRD260</b>	<b>GDRD272</b>
50/125-OM3	<b>GBRD312</b>	<b>GBRD324</b>	<b>GBRD336</b>	<b>GBRD348</b>	<b>GBRD360</b>	<b>GBRD372</b>	<b>GDRD312</b>	<b>GDRD324</b>	<b>GDRD336</b>	<b>GDRD348</b>	<b>GDRD360</b>	<b>GDRD372</b>
50/125-OM4	<b>GBRD612</b>	<b>GBRD624</b>	<b>GBRD636</b>	<b>GBRD648</b>	<b>GBRD660</b>	<b>GBRD672</b>	<b>GDRD612</b>	<b>GDRD624</b>	<b>GDRD636</b>	<b>GDRD648</b>	<b>GDRD660</b>	<b>GDRD672</b>
9/125 ITU G.652D	<b>GBRD812</b>	<b>GBRD824</b>	<b>GBRD836</b>	<b>GBRD848</b>	<b>GBRD860</b>	<b>GBRD872</b>	<b>GDRD812</b>	<b>GDRD824</b>	<b>GDRD836</b>	<b>GDRD848</b>	<b>GDRD860</b>	<b>GDRD872</b>
9/125 ITU G.655 C & D	<b>GBRD712</b>	<b>GBRD724</b>	<b>GBRD736</b>	<b>GBRD748</b>	<b>GBRD760</b>	<b>GBRD772</b>	<b>GDRD712</b>	<b>GDRD724</b>	<b>GDRD736</b>	<b>GDRD748</b>	<b>GDRD760</b>	<b>GDRD772</b>
Std. plywood reel (non-returnable)	Ø 1250 x 688 mm, Weight 93.0 kg						Ø 1250 x 688 mm, Weight 93.0 kg					
Std. delivery length	2100 ± 100 m						2100 ± 100 m					

## Ordering Information

Fiber Type/Count	Dry Core		Filled Core	
	96	144	96	144
62.5/125-OM1	<b>GBRE196</b>	<b>GBRF144</b>	<b>GDRE196</b>	<b>GDRF144</b>
50/125-OM2	<b>GBRE296</b>	<b>GBRF244</b>	<b>GDRE296</b>	<b>GDRF244</b>
50/125-OM3	<b>GBRE396</b>	<b>GBRF344</b>	<b>GDRE396</b>	<b>GDRF344</b>
50/125-OM4	<b>GBRE696</b>	<b>GBRF644</b>	<b>GDRE696</b>	<b>GDRF644</b>
9/125 ITU G.652D	<b>GBRE896</b>	<b>GBRF844</b>	<b>GDRE896</b>	<b>GDRF844</b>
9/125 ITU G.655 C & D	<b>GBRE796</b>	<b>GBRF744</b>	<b>GDRE796</b>	<b>GDRF744</b>
Std. plywood reel (non-returnable)	Ø 1400 x 900 mm, Weight 120.0 kg			
Std. delivery length	2100 ± 100 m			

## Fiber Color Coding

No.		No.		No.	
1	Red	11	White	21	Grey + ring
2	Green	12	Aqua	22	Brown + ring
3	Blue	13	Red + ring	23	White + ring
4	Yellow	14	Green + ring	24	Aqua + ring
5	Violet	15	Blue + ring		
6	Pink	16	Yellow + ring		
7	Orange	17	Violet + ring		
8	Black	18	Pink + ring		
9	Grey	19	Orange + ring		
10	Brown	20	Black + ring		

## Tube Color Coding

No.	
1	Red
2	Green
3 to 12	White

## Universal Multi Loose Tube Cable with Corrugated Steel Tape, Single Jacket

GCCG, GCCD, GCCE, GCCF

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



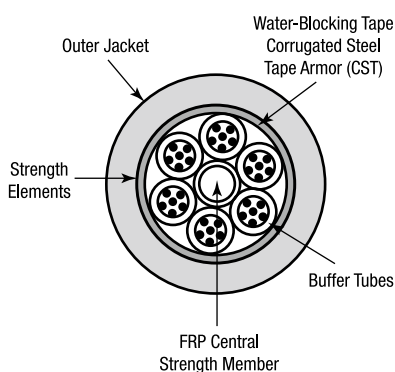
### Applications

- 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

- Available in sizes from 2 to 144 fibers
- Jelly filled (non-dripping and silicon-free) loose tubes with primary coated optical fibers ( $\text{Ø } 250 \pm 15 \mu\text{m}$ )
- Full dielectric construction, no grounding required
- Installation-friendly thanks to the cable core which is kept free of grease (dry interstices)
- High mechanical and full rodent protection provided by Corrugated Steel Tape (CST) armor
- Length marking in meters for easy determination of the cable length

### Cross Section



### Specifications

IEC 60794-1-2	
Crush Resistance (E3):	50 kN/m
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
- Transport/Storage	-30°C to +70°C
- Installation	-5°C to +50°C
- Operation	-30°C to +70°C
Watertightness (F5):	Pass
Other	
Flame Retardant:	IEC 60332-3-22
Circuit Integrity:	IEC 60331-25
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density (GCCG, GCCD):	IEC 61034-2



### Characteristics

Loose Tube	Fiber Count	Diameter Tube (mm)	Max. Fibers per Tube	Water Tightness in Core	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
<b>IEC 60794-1-2</b>							<b>E1</b>	<b>E1</b>	
<b>GCCG*xx</b>	6 to 36	1.9	6	Dry	10.5	160	6000	3000	2100
<b>GCCD*xx</b>	12 to 72	2.5	12	Dry	12.0	200	7000	3500	2900
<b>GCCE*xx</b>	84 to 96	2.5	12	Dry	15.4	250	8000	4000	3100
<b>GCCF*xx</b>	108 to 144	2.5	12	Dry	18.5	330	8000	4000	6000

### Ordering Information

Fiber Type/Count	Dry Core				
	6	12	18	24	36
62.5/125-OM1	<b>GCCG106</b>	<b>GCCG112</b>	<b>GCCG118</b>	<b>GCCG124</b>	<b>GCCG136</b>
50/125-OM2	<b>GCCG206</b>	<b>GCCG212</b>	<b>GCCG218</b>	<b>GCCG224</b>	<b>GCCG236</b>
50/125-OM3	<b>GCCG306</b>	<b>GCCG312</b>	<b>GCCG318</b>	<b>GCCG324</b>	<b>GCCG336</b>
50/125-OM4	<b>GCCG606</b>	<b>GCCG612</b>	<b>GCCG618</b>	<b>GCCG624</b>	<b>GCCG636</b>
9/125 ITU G.652D	<b>GCCG806</b>	<b>GCCG812</b>	<b>GCCG818</b>	<b>GCCG824</b>	<b>GCCG836</b>
9/125 ITU G.655 C & D	<b>GCCG706</b>	<b>GCCG712</b>	<b>GCCG718</b>	<b>GCCG724</b>	<b>GCCG736</b>
Std. plywood reel (non-returnable)	Ø 1250 x 688 mm, Weight 93.0 kg				
Std. delivery length	2100 ± 100 m				

Fiber Type/Count	Dry Core					
	12	24	36	48	60	72
62.5/125-OM1	<b>GCCD112</b>	<b>GCCD124</b>	<b>GCCD136</b>	<b>GCCD148</b>	<b>GCCD160</b>	<b>GCCD172</b>
50/125-OM2	<b>GCCD212</b>	<b>GCCD224</b>	<b>GCCD236</b>	<b>GCCD248</b>	<b>GCCD260</b>	<b>GCCD272</b>
50/125-OM3	<b>GCCD312</b>	<b>GCCD324</b>	<b>GCCD336</b>	<b>GCCD348</b>	<b>GCCD360</b>	<b>GCCD372</b>
50/125-OM4	<b>GCCD612</b>	<b>GCCD624</b>	<b>GCCD636</b>	<b>GCCD648</b>	<b>GCCD660</b>	<b>GCCD672</b>
9/125 ITU G.652D	<b>GCCD812</b>	<b>GCCD824</b>	<b>GCCD836</b>	<b>GCCD848</b>	<b>GCCD860</b>	<b>GCCD872</b>
9/125 ITU G.655 C & D	<b>GCCD712</b>	<b>GCCD724</b>	<b>GCCD736</b>	<b>GCCD748</b>	<b>GCCD760</b>	<b>GCCD772</b>
Std. plywood reel (non-returnable)	Ø 1250 x 688 mm, Weight 93.0 kg					
Std. delivery length	2100 ± 100 m					

### Ordering Information

Fiber Type/Count	Dry Core	
	96	144
62.5/125-OM1	<b>GCCE196</b>	<b>GCCF144</b>
50/125-OM2	<b>GCCE296</b>	<b>GCCF244</b>
50/125-OM3	<b>GCCE396</b>	<b>GCCF344</b>
50/125-OM4	<b>GCCE696</b>	<b>GCCF644</b>
9/125 ITU G.652D	<b>GCCE896</b>	<b>GCCF844</b>
9/125 ITU G.655 C & D	<b>GCCE796</b>	<b>GCCF744</b>
Std. plywood reel (non-returnable)	Ø 1400 x 900 mm, Weight 120.0 kg	
Std. delivery length	2100 ± 100 m	

### Fiber Color Coding

No.		No.		No.	
1	Red	11	White	21	Grey + ring
2	Green	12	Aqua	22	Brown + ring
3	Blue	13	Red + ring	23	White + ring
4	Yellow	14	Green + ring	24	Aqua + ring
5	Violet	15	Blue + ring		
6	Pink	16	Yellow + ring		
7	Orange	17	Violet + ring		
8	Black	18	Pink + ring		
9	Grey	19	Orange + ring		
10	Brown	20	Black + ring		

Tube Color Coding	
No.	
1	Red
2	Green
3 to 12	White

**Outdoor Multi Loose Tube Cable  
with Corrugated Steel Tape, Single Jacket**

GBCG, GBCD, GBCE, GBCF  
GDCG, GDCD, GDCE, GDCF

A-DQ(ZN)(SR)2Y  
A-DF(ZN)(SR)2Y



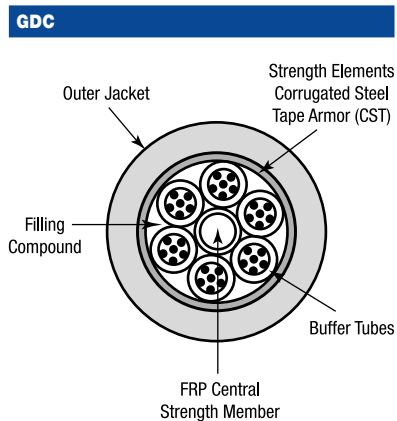
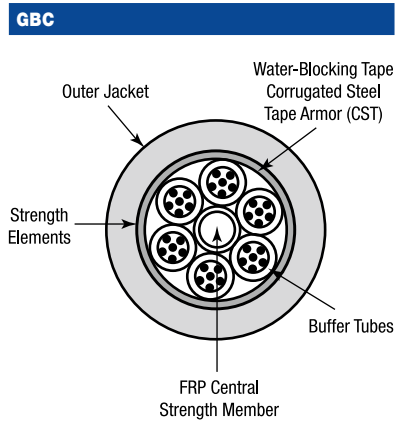
**Applications**

- 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**

- Available in sizes from 2 to 144 fibers
- Jelly filled (non-dripping and silicon-free) loose tubes with primary coated optical fibers (Ø 250 ± 15 µm)
- Full dielectric construction, no grounding required
- Installation-friendly thanks to the cable core which is kept free of grease (dry interstices) for GBC types
- High mechanical and full rodent protection provided by Corrugated Steel Tape (CST) armor
- Length marking in meters for easy determination of the cable length

**Cross Section**



**Specifications**

<b>IEC 60794-1-2</b>	
Crush Resistance (E3):	50 kN/m
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
- Transport/Storage	-30°C to +70°C
- Installation	-5°C to +50°C
- Operation	-30°C to +70°C
Watertightness (F5):	Pass



## Characteristics

Loose Tube	Fiber Count	Diameter Tube (mm)	Max. Fibers per Tube	Water Tightness in Core	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
<b>IEC 60794-1-2</b>							<b>E1</b>	<b>E1</b>	
<b>GBCG*xx</b>	6 to 36	1.9	6	Dry	10.5	105	6000	3000	3000
<b>GDCG*xx</b>	6 to 36	1.9	6	Filled	10.5	115	6000	3000	3400
<b>GBCD*xx</b>	12 to 72	2.5	12	Dry	12.0	175	7000	3500	4000
<b>GDCD*xx</b>	12 to 72	2.5	12	Filled	12.0	180	7000	3500	4400
<b>GBCE*xx</b>	84 to 96	2.5	12	Dry	15.4	230	8000	4000	4400
<b>GDCE*xx</b>	84 to 96	2.5	12	Filled	15.4	240	8000	4000	4900
<b>GBCF*xx</b>	108 to 144	2.5	12	Dry	18.5	310	8000	4000	8000
<b>GDCF*xx</b>	108 to 144	2.5	12	Filled	18.5	325	8000	4000	8900

## Ordering Information

Fiber Type/Count	Dry Core					Filled Core				
	6	12	18	24	36	6	12	18	24	36
62.5/125-OM1	<b>GBCG106</b>	<b>GBCG112</b>	<b>GBCG118</b>	<b>GBCG124</b>	<b>GBCG136</b>	<b>GDCG106</b>	<b>GDCG112</b>	<b>GDCG118</b>	<b>GDCG124</b>	<b>GDCG136</b>
50/125-OM2	<b>GBCG206</b>	<b>GBCG212</b>	<b>GBCG218</b>	<b>GBCG224</b>	<b>GBCG236</b>	<b>GDCG206</b>	<b>GDCG212</b>	<b>GDCG218</b>	<b>GDCG224</b>	<b>GDCG236</b>
50/125-OM3	<b>GBCG306</b>	<b>GBCG312</b>	<b>GBCG318</b>	<b>GBCG324</b>	<b>GBCG336</b>	<b>GDCG306</b>	<b>GDCG312</b>	<b>GDCG318</b>	<b>GDCG324</b>	<b>GDCG336</b>
50/125-OM4	<b>GBCG606</b>	<b>GBCG612</b>	<b>GBCG618</b>	<b>GBCG624</b>	<b>GBCG636</b>	<b>GDCG606</b>	<b>GDCG612</b>	<b>GDCG618</b>	<b>GDCG624</b>	<b>GDCG636</b>
9/125 ITU G.652D	<b>GBCG806</b>	<b>GBCG812</b>	<b>GBCG818</b>	<b>GBCG824</b>	<b>GBCG836</b>	<b>GDCG806</b>	<b>GDCG812</b>	<b>GDCG818</b>	<b>GDCG824</b>	<b>GDCG836</b>
9/125 ITU G.655 C & D	<b>GBCG706</b>	<b>GBCG712</b>	<b>GBCG718</b>	<b>GBCG724</b>	<b>GBCG736</b>	<b>GDCG706</b>	<b>GDCG712</b>	<b>GDCG718</b>	<b>GDCG724</b>	<b>GDCG736</b>
Std. plywood reel (non-returnable)	Ø 1250 x 688 mm, Weight 93.0 kg					Ø 1250 x 688 mm, Weight 93.0 kg				
Std. delivery length	2100 ± 100 m					2100 ± 100 m				

Fiber Type/Count	Dry Core						Filled Core					
	12	24	36	48	60	72	12	24	36	48	60	72
62.5/125-OM1	<b>GBCD112</b>	<b>GBCD124</b>	<b>GBCD136</b>	<b>GBCD148</b>	<b>GBCD160</b>	<b>GBCD172</b>	<b>GDCD112</b>	<b>GDCD124</b>	<b>GDCD136</b>	<b>GDCD148</b>	<b>GDCD160</b>	<b>GDCD172</b>
50/125-OM2	<b>GBCD212</b>	<b>GBCD224</b>	<b>GBCD236</b>	<b>GBCD248</b>	<b>GBCD260</b>	<b>GBCD272</b>	<b>GDCD212</b>	<b>GDCD224</b>	<b>GDCD236</b>	<b>GDCD248</b>	<b>GDCD260</b>	<b>GDCD272</b>
50/125-OM3	<b>GBCD312</b>	<b>GBCD324</b>	<b>GBCD336</b>	<b>GBCD348</b>	<b>GBCD360</b>	<b>GBCD372</b>	<b>GDCD312</b>	<b>GDCD324</b>	<b>GDCD336</b>	<b>GDCD348</b>	<b>GDCD360</b>	<b>GDCD372</b>
50/125-OM4	<b>GBCD612</b>	<b>GBCD624</b>	<b>GBCD636</b>	<b>GBCD648</b>	<b>GBCD660</b>	<b>GBCD672</b>	<b>GDCD612</b>	<b>GDCD624</b>	<b>GDCD636</b>	<b>GDCD648</b>	<b>GDCD660</b>	<b>GDCD672</b>
9/125 ITU G.652D	<b>GBCD812</b>	<b>GBCD824</b>	<b>GBCD836</b>	<b>GBCD848</b>	<b>GBCD860</b>	<b>GBCD872</b>	<b>GDCD812</b>	<b>GDCD824</b>	<b>GDCD836</b>	<b>GDCD848</b>	<b>GDCD860</b>	<b>GDCD872</b>
9/125 ITU G.655 C & D	<b>GBCD712</b>	<b>GBCD724</b>	<b>GBCD736</b>	<b>GBCD748</b>	<b>GBCD760</b>	<b>GBCD772</b>	<b>GDCD712</b>	<b>GDCD724</b>	<b>GDCD736</b>	<b>GDCD748</b>	<b>GDCD760</b>	<b>GDCD772</b>
Std. plywood reel (non-returnable)	Ø 1250 x 688 mm, Weight 93.0 kg						Ø 1250 x 688 mm, Weight 93.0 kg					
Std. delivery length	2100 ± 100 m						2100 ± 100 m					

## Ordering Information

Fiber Type/Count	Dry Core		Filled Core	
	96	144	96	144
62.5/125-OM1	<b>GBCE196</b>	<b>GBCF144</b>	<b>GDCE196</b>	<b>GDCF144</b>
50/125-OM2	<b>GBCE296</b>	<b>GBCF244</b>	<b>GDCE296</b>	<b>GDCF244</b>
50/125-OM3	<b>GBCE396</b>	<b>GBCF344</b>	<b>GDCE396</b>	<b>GDCF344</b>
50/125-OM4	<b>GBCE696</b>	<b>GBCF644</b>	<b>GDCE696</b>	<b>GDCF644</b>
9/125 ITU G.652D	<b>GBCE896</b>	<b>GBCF844</b>	<b>GDCE896</b>	<b>GDCF844</b>
9/125 ITU G.655 C & D	<b>GBCE796</b>	<b>GBCF744</b>	<b>GDCE796</b>	<b>GDCF744</b>
Std. plywood reel (non-returnable)	Ø 1400 x 900 mm, Weight 120.0 kg			
Std. delivery length	2100 ± 100 m			

## Fiber Color Coding

No.		No.		No.	
1	Red	11	White	21	Grey + ring
2	Green	12	Aqua	22	Brown + ring
3	Blue	13	Red + ring	23	White + ring
4	Yellow	14	Green + ring	24	Aqua + ring
5	Violet	15	Blue + ring		
6	Pink	16	Yellow + ring		
7	Orange	17	Violet + ring		
8	Black	18	Pink + ring		
9	Grey	19	Orange + ring		
10	Brown	20	Black + ring		

## Tube Color Coding

No.	
1	Red
2	Green
3 to 12	White

## Universal Multi Loose Tube Cable with Corrugated Steel Tape, Double Jacket

GCDG, GCDD, GCDE, GCDF

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



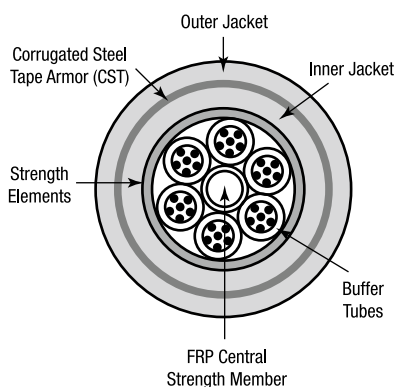
### Applications

- 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

- Available in sizes from 2 to 144 fibers
- Jelly filled (non-dripping and silicon-free) loose tubes with primary coated optical fibers ( $\text{Ø } 250 \pm 15 \mu\text{m}$ )
- Full dielectric construction, no grounding required
- Installation-friendly thanks to the cable core which is kept free of grease (dry interstices)
- High mechanical and full rodent protection provided by Corrugated Steel Tape (CST) armor
- Length marking in meters for easy determination of the cable length

### Cross Section



### Specifications

IEC 60794-1-2	
Crush Resistance (E3):	50 kN/m
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
- Transport/Storage	-30°C to +70°C
- Installation	-5°C to +50°C
- Operation	-30°C to +70°C
Watertightness (F5):	Pass
Other	
Flame Retardant:	IEC 60332-3-22
Circuit Integrity (GCDG):	EN 50200
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density (GCDG, GCDD):	IEC 61034-2





## Characteristics

Loose Tube	Fiber Count	Diameter Tube (mm)	Max. Fibers per Tube	Water Tightness in Core	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
IEC 60794-1-2							E1	E1	
<b>GCDG*xx</b>	6 to 36	1.9	6	Dry	13.2	195	6000	3000	2800
<b>GCDD*xx</b>	12 to 72	2.5	12	Dry	15.2	280	7000	3500	3900
<b>GCDE*xx</b>	84 to 96	2.5	12	Dry	17.4	340	8000	4000	4700
<b>GCDF*xx</b>	108 to 144	2.5	12	Dry	20.5	430	8000	4000	7300

## Ordering Information

Fiber Type/Count	Dry Core				
	6	12	18	24	36
62.5/125-OM1	<b>GCDG106</b>	<b>GCDG112</b>	<b>GCDG118</b>	<b>GCDG124</b>	<b>GCDG136</b>
50/125-OM2	<b>GCDG206</b>	<b>GCDG212</b>	<b>GCDG218</b>	<b>GCDG224</b>	<b>GCDG236</b>
50/125-OM3	<b>GCDG306</b>	<b>GCDG312</b>	<b>GCDG318</b>	<b>GCDG324</b>	<b>GCDG336</b>
50/125-OM4	<b>GCDG606</b>	<b>GCDG612</b>	<b>GCDG618</b>	<b>GCDG624</b>	<b>GCDG636</b>
9/125 ITU G.652D	<b>GCDG806</b>	<b>GCDG812</b>	<b>GCDG818</b>	<b>GCDG824</b>	<b>GCDG836</b>
9/125 ITU G.655 C & D	<b>GCDG706</b>	<b>GCDG712</b>	<b>GCDG718</b>	<b>GCDG724</b>	<b>GCDG736</b>
Std. plywood reel (non-returnable)	Ø 1250 x 688 mm, Weight 93.0 kg				
Std. delivery length	2100 ± 100 m				

Fiber Type/Count	Dry Core					
	12	24	36	48	60	72
62.5/125-OM1	<b>GCDD112</b>	<b>GCDD124</b>	<b>GCDD136</b>	<b>GCDD148</b>	<b>GCDD160</b>	<b>GCDD172</b>
50/125-OM2	<b>GCDD212</b>	<b>GCDD224</b>	<b>GCDD236</b>	<b>GCDD248</b>	<b>GCDD260</b>	<b>GCDD272</b>
50/125-OM3	<b>GCDD312</b>	<b>GCDD324</b>	<b>GCDD336</b>	<b>GCDD348</b>	<b>GCDD360</b>	<b>GCDD372</b>
50/125-OM4	<b>GCDD612</b>	<b>GCDD624</b>	<b>GCDD636</b>	<b>GCDD648</b>	<b>GCDD660</b>	<b>GCDD672</b>
9/125 ITU G.652D	<b>GCDD812</b>	<b>GCDD824</b>	<b>GCDD836</b>	<b>GCDD848</b>	<b>GCDD860</b>	<b>GCDD872</b>
9/125 ITU G.655 C & D	<b>GCDD712</b>	<b>GCDD724</b>	<b>GCDD736</b>	<b>GCDD748</b>	<b>GCDD760</b>	<b>GCDD772</b>
Std. plywood reel (non-returnable)	Ø 1250 x 688 mm, Weight 93.0 kg					
Std. delivery length	2100 ± 100 m					

## Ordering Information

Fiber Type/Count	Dry Core	
	96	144
62.5/125-OM1	<b>GCDE196</b>	<b>GCDF144</b>
50/125-OM2	<b>GCDE296</b>	<b>GCDF244</b>
50/125-OM3	<b>GCDE396</b>	<b>GCDF344</b>
50/125-OM4	<b>GCDE696</b>	<b>GCDF644</b>
9/125 ITU G.652D	<b>GCDE896</b>	<b>GCDF844</b>
9/125 ITU G.655 C & D	<b>GCDE796</b>	<b>GCDF744</b>
Std. plywood reel (non-returnable)	Ø 1400 x 900 mm, Weight 120.0 kg	
Std. delivery length	2100 ± 100 m	

## Fiber Color Coding

No.		No.		No.	
1	Red	11	White	21	Grey + ring
2	Green	12	Aqua	22	Brown + ring
3	Blue	13	Red + ring	23	White + ring
4	Yellow	14	Green + ring	24	Aqua + ring
5	Violet	15	Blue + ring		
6	Pink	16	Yellow + ring		
7	Orange	17	Violet + ring		
8	Black	18	Pink + ring		
9	Grey	19	Orange + ring		
10	Brown	20	Black + ring		

Tube Color Coding	
No.	
1	Red
2	Green
3 to 12	White

## Outdoor Multi Loose Tube Cable with Corrugated Steel Tape, Double Jacket

GBDG, GBDD, GBDE, GBDF  
GDDG, GDDD, GDDE, GDDF

A-DQ(ZN)2Y(SR)2Y  
A-DF(ZN)2Y(SR)2Y

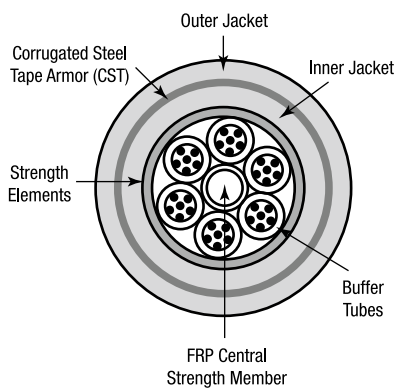


### Applications

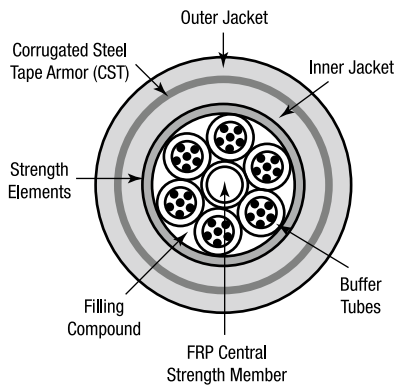
- For outdoor and indoor use in structured (data) wiring systems such as campus backbone
- For outdoor and indoor use in networks for telecom, cable TV and/or broadcast
- Easy to install in ducts, tunnels and trenches by means of compressed air or pulling wire
- Suitable for direct burial

### Cross Section

#### GBD



#### GDD



### Features & Benefits

- Available in sizes from 2 to 144 fibers
- Jelly filled (non-dripping and silicon-free) loose tubes with primary coated optical fibers ( $\text{Ø } 250 \pm 15 \mu\text{m}$ )
- Full dielectric construction, no grounding required
- Installation-friendly thanks to the cable core which is kept free of grease (dry interstices) for GBD types
- High mechanical and full rodent protection provided by Corrugated Steel Tape (CST) armor
- Length marking in meters for easy determination of the cable length

### Specifications

#### IEC 60794-1-2

Crush Resistance (E3):	50 kN/m
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
- Transport/Storage	-30°C to +70°C
- Installation	-5°C to +50°C
- Operation	-30°C to +70°C
Watertightness (F5):	Pass



## Characteristics

Tight Buffer	Fiber Count	Diameter Tube (mm)	Max. Fibers per Tube	Water Tightness in Core	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
<b>IEC 60794-1-2</b>							<b>E1</b>	<b>E1</b>	
<b>GBDG*xx</b>	6 to 36	1.9	6	Dry	13.2	155	6000	3000	4700
<b>GDDG*xx</b>	6 to 36	1.9	6	Filled	13.0	160	6000	3000	4900
<b>GBDD*xx</b>	12 to 72	2.5	12	Dry	15.2	200	7000	3500	6100
<b>GDDD*xx</b>	12 to 72	2.5	12	Filled	15.0	205	7000	3500	6500
<b>GBDE*xx</b>	84 to 96	2.5	12	Dry	17.4	310	8000	4000	7600
<b>GDDE*xx</b>	84 to 96	2.5	12	Filled	17.1	285	8000	4000	8100
<b>GBDF*xx</b>	108 to 144	2.5	12	Dry	20.5	310	8000	4000	8000
<b>GDDF*xx</b>	108 to 144	2.5	12	Filled	20.5	377	8000	4000	11400

## Ordering Information

Fiber Type/Count	Dry Core					Filled Core				
	6	12	18	24	36	6	12	18	24	36
62.5/125-OM1	<b>GBDG106</b>	<b>GBDG112</b>	<b>GBDG118</b>	<b>GBDG124</b>	<b>GBDG136</b>	<b>GDDG106</b>	<b>GDDG112</b>	<b>GDDG118</b>	<b>GDDG124</b>	<b>GDDG136</b>
50/125-OM2	<b>GBDG206</b>	<b>GBDG212</b>	<b>GBDG218</b>	<b>GBDG224</b>	<b>GBDG236</b>	<b>GDDG206</b>	<b>GDDG212</b>	<b>GDDG218</b>	<b>GDDG224</b>	<b>GDDG236</b>
50/125-OM3	<b>GBDG306</b>	<b>GBDG312</b>	<b>GBDG318</b>	<b>GBDG324</b>	<b>GBDG336</b>	<b>GDDG306</b>	<b>GDDG312</b>	<b>GDDG318</b>	<b>GDDG324</b>	<b>GDDG336</b>
50/125-OM4	<b>GBDG606</b>	<b>GBDG612</b>	<b>GBDG618</b>	<b>GBDG624</b>	<b>GBDG636</b>	<b>GDDG606</b>	<b>GDDG612</b>	<b>GDDG618</b>	<b>GDDG624</b>	<b>GDDG636</b>
9/125 ITU G.652D	<b>GBDG806</b>	<b>GBDG812</b>	<b>GBDG818</b>	<b>GBDG824</b>	<b>GBDG836</b>	<b>GDDG806</b>	<b>GDDG812</b>	<b>GDDG818</b>	<b>GDDG824</b>	<b>GDDG836</b>
9/125 ITU G.655 C & D	<b>GBDG706</b>	<b>GBDG712</b>	<b>GBDG718</b>	<b>GBDG724</b>	<b>GBDG736</b>	<b>GDDG706</b>	<b>GDDG712</b>	<b>GDDG718</b>	<b>GDDG724</b>	<b>GDDG736</b>
Std. plywood reel (non-returnable)	Ø 1250 x 688 mm, Weight 93.0 kg					Ø 1250 x 688 mm, Weight 93.0 kg				
Std. delivery length	2100 ± 100 m					2100 ± 100 m				

Fiber Type/Count	Dry Core						Filled Core					
	12	24	36	48	60	72	12	24	36	48	60	72
62.5/125-OM1	<b>GBDD112</b>	<b>GBDD124</b>	<b>GBDD136</b>	<b>GBDD148</b>	<b>GBDD160</b>	<b>GBDD172</b>	<b>GDDD112</b>	<b>GDDD124</b>	<b>GDDD136</b>	<b>GDDD148</b>	<b>GDDD160</b>	<b>GDDD172</b>
50/125-OM2	<b>GBDD212</b>	<b>GBDD224</b>	<b>GBDD236</b>	<b>GBDD248</b>	<b>GBDD260</b>	<b>GBDD272</b>	<b>GDDD212</b>	<b>GDDD224</b>	<b>GDDD236</b>	<b>GDDD248</b>	<b>GDDD260</b>	<b>GDDD272</b>
50/125-OM3	<b>GBDD312</b>	<b>GBDD324</b>	<b>GBDD336</b>	<b>GBDD348</b>	<b>GBDD360</b>	<b>GBDD372</b>	<b>GDDD312</b>	<b>GDDD324</b>	<b>GDDD336</b>	<b>GDDD348</b>	<b>GDDD360</b>	<b>GDDD372</b>
50/125-OM4	<b>GBDD612</b>	<b>GBDD624</b>	<b>GBDD636</b>	<b>GBDD648</b>	<b>GBDD660</b>	<b>GBDD672</b>	<b>GDDD612</b>	<b>GDDD624</b>	<b>GDDD636</b>	<b>GDDD648</b>	<b>GDDD660</b>	<b>GDDD672</b>
9/125 ITU G.652D	<b>GBDD812</b>	<b>GBDD824</b>	<b>GBDD836</b>	<b>GBDD848</b>	<b>GBDD860</b>	<b>GBDD872</b>	<b>GDDD812</b>	<b>GDDD824</b>	<b>GDDD836</b>	<b>GDDD848</b>	<b>GDDD860</b>	<b>GDDD872</b>
9/125 ITU G.655 C & D	<b>GBDD712</b>	<b>GBDD724</b>	<b>GBDD736</b>	<b>GBDD748</b>	<b>GBDD760</b>	<b>GBDD772</b>	<b>GDDD712</b>	<b>GDDD724</b>	<b>GDDD736</b>	<b>GDDD748</b>	<b>GDDD760</b>	<b>GDDD772</b>
Std. plywood reel (non-returnable)	Ø 1250 x 688 mm, Weight 93.0 kg						Ø 1250 x 688 mm, Weight 93.0 kg					
Std. delivery length	2100 ± 100 m						2100 ± 100 m					

## Ordering Information

Fiber Type/Count	Dry Core		Filled Core	
	96	144	96	144
62.5/125-OM1	<b>GBDE196</b>	<b>GBDF144</b>	<b>GDDE196</b>	<b>GDDF144</b>
50/125-OM2	<b>GBDE296</b>	<b>GBDF244</b>	<b>GDDE296</b>	<b>GDDF244</b>
50/125-OM3	<b>GBDE396</b>	<b>GBDF344</b>	<b>GDDE396</b>	<b>GDDF344</b>
50/125-OM4	<b>GBDE696</b>	<b>GBDF644</b>	<b>GDDE696</b>	<b>GDDF644</b>
9/125 ITU G.652D	<b>GBDE896</b>	<b>GBDF844</b>	<b>GDDE896</b>	<b>GDDF844</b>
9/125 ITU G.655 C & D	<b>GBDE796</b>	<b>GBDF744</b>	<b>GDDE796</b>	<b>GDDF744</b>
Std. plywood reel (non-returnable)	Ø 1400 x 900 mm, Weight 120.0 kg			
Std. delivery length	2100 ± 100 m			

## Fiber Color Coding

No.		No.		No.	
1	Red	11	White	21	Grey + ring
2	Green	12	Aqua	22	Brown + ring
3	Blue	13	Red + ring	23	White + ring
4	Yellow	14	Green + ring	24	Aqua + ring
5	Violet	15	Blue + ring		
6	Pink	16	Yellow + ring		
7	Orange	17	Violet + ring		
8	Black	18	Pink + ring		
9	Grey	19	Orange + ring		
10	Brown	20	Black + ring		

## Tube Color Coding

No.	
1	Red
2	Green
3 to 12	White

## Universal Multi Loose Tube Cable with Steel Wire Armor, Double Jacket

GCWG, GCWD, GCWE, GCWF

A/I-DQ(ZN)HBH



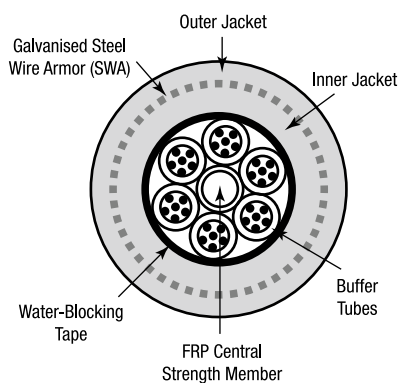
### Applications

- 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

- Available in sizes from 2 to 144 fibers
- Jelly filled (non-dripping and silicon-free) loose tubes with primary coated optical fibers ( $\text{Ø } 250 \pm 15 \mu\text{m}$ )
- Full dielectric construction, no grounding required
- Installation-friendly thanks to the cable core which is kept free of grease (dry interstices)
- High mechanical and full rodent protection provided by Steel Wire Armor (SWA)
- Length marking in meters for easy determination of the cable length

### Cross Section



### Specifications

IEC 60794-1-2	
Crush Resistance (E3):	50 kN/m
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
- Transport/Storage	-30°C to +70°C
- Installation	-5°C to +50°C
- Operation	-30°C to +70°C
Watertightness (F5):	Pass
Other	
Flame Retardant:	IEC 60332-3-22
Halogen Free:	IEC 60754-1
Non Corrosive:	IEC 60754-2
Smoke Density (GCWG, GCWD):	IEC 61034-2



## Characteristics

Loose Tube	Fiber Count	Diameter Tube (mm)	Max. Fibers per Tube	Water Tightness in Core	Steel Wire Diameter (mm)	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
IEC 60794-1-2								E1	E1	
GCWG*xx	6 to 36	1.9	6	Dry	0.9	13.5	325	6000	3000	3000
GCWD*xx	12 to 72	2.5	12	Dry	0.9	15.5	390	8000	4000	4100
GCWE*xx	84 to 96	2.5	12	Dry	0.9	17.0	465	8000	4000	4900
GCWF*xx	108 to 144	2.5	12	Dry	0.9	20.2	630	8000	4000	7500

## Ordering Information

Fiber Type/Count	Dry Core				
	6	12	18	24	36
62.5/125-OM1	GCWG106	GCWG112	GCWG118	GCWG124	GCWG136
50/125-OM2	GCWG206	GCWG212	GCWG218	GCWG224	GCWG236
50/125-OM3	GCWG306	GCWG312	GCWG318	GCWG324	GCWG336
50/125-OM4	GCWG606	GCWG612	GCWG618	GCWG624	GCWG636
9/125 ITU G.652D	GCWG806	GCWG812	GCWG818	GCWG824	GCWG836
9/125 ITU G.655 C & D	GCWG706	GCWG712	GCWG718	GCWG724	GCWG736
Std. plywood reel (non-returnable)	Ø 1250 x 688 mm, Weight 93.0 kg				
Std. delivery length	2100 ± 100 m				

Fiber Type/Count	Dry Core					
	12	24	36	48	60	72
62.5/125-OM1	GCWD112	GCWD124	GCWD136	GCWD148	GCWD160	GCWD172
50/125-OM2	GCWD212	GCWD224	GCWD236	GCWD248	GCWD260	GCWD272
50/125-OM3	GCWD312	GCWD324	GCWD336	GCWD348	GCWD360	GCWD372
50/125-OM4	GCWD612	GCWD624	GCWD636	GCWD648	GCWD660	GCWD672
9/125 ITU G.652D	GCWD812	GCWD824	GCWD836	GCWD848	GCWD860	GCWD872
9/125 ITU G.655 C & D	GCWD712	GCWD724	GCWD736	GCWD748	GCWD760	GCWD772
Std. plywood reel (non-returnable)	Ø 1250 x 688 mm, Weight 93.0 kg					
Std. delivery length	2100 ± 100 m					

## Ordering Information

Fiber Type/Count	Dry Core	
	96	144
62.5/125-OM1	GCWE196	GCWF144
50/125-OM2	GCWE296	GCWF244
50/125-OM3	GCWE396	GCWF344
50/125-OM4	GCWE696	GCWF644
9/125 ITU G.652D	GCWE896	GCWF844
9/125 ITU G.655 C & D	GCWE796	GCWF744
Std. plywood reel (non-returnable)	Ø 1400 x 900 mm, Weight 120.0 kg	
Std. delivery length	2100 ± 100 m	

## Fiber Color Coding

No.		No.		No.	
1	Red	11	White	21	Grey + ring
2	Green	12	Aqua	22	Brown + ring
3	Blue	13	Red + ring	23	White + ring
4	Yellow	14	Green + ring	24	Aqua + ring
5	Violet	15	Blue + ring		
6	Pink	16	Yellow + ring		
7	Orange	17	Violet + ring		
8	Black	18	Pink + ring		
9	Grey	19	Orange + ring		
10	Brown	20	Black + ring		

## Tube Color Coding

No.	
1	Red
2	Green
3 to 12	White

## Outdoor Multi Loose Tube Cable with Steel Wire Armor, Double Jacket

GBWG, GBWD, GBWE, GBWF  
GDWG, GDWD, GDWE, GDWF

A-DQ(ZN)2YB2Y  
A-DF(ZN)2YB2Y

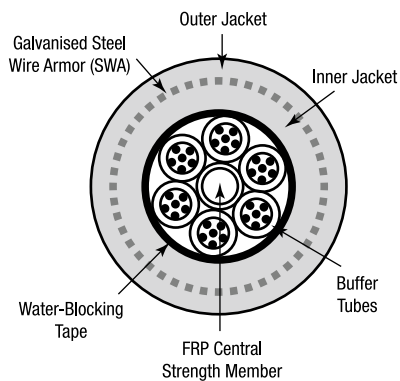


### Applications

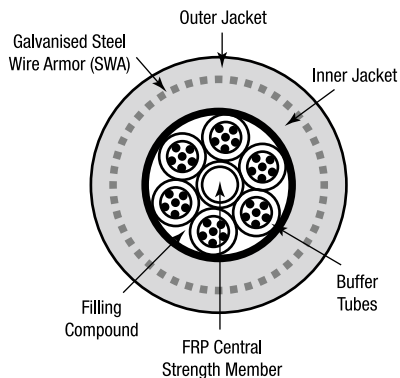
- For outdoor and indoor use in structured (data) wiring systems such as campus backbone
- For outdoor and indoor use in networks for telecom, cable TV and/or broadcast
- Easy to install in ducts, tunnels and trenches by means of compressed air or pulling wire
- Suitable for direct burial

### Cross Section

#### GBW



#### GDW



### Features & Benefits

- Available in sizes from 2 to 144 fibers
- Jelly filled (non-dripping and silicon-free) loose tubes with primary coated optical fibers ( $\text{Ø } 250 \pm 15 \mu\text{m}$ )
- Full dielectric construction, no grounding required
- Installation-friendly thanks to the cable core which is kept free of grease (dry interstices) for GBW types
- High mechanical and full rodent protection provided by Steel Wire Armor (SWA)
- Length marking in meters for easy determination of the cable length

### Specifications

#### IEC 60794-1-2

Crush Resistance (E3):	50 kN/m
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
- Transport/Storage	-30°C to +70°C
- Installation	-5°C to +50°C
- Operation	-30°C to +70°C
Watertightness (F5):	Pass



## Characteristics

Loose Tube	Fiber Count	Diameter Tube (mm)	Max. Fibers per Tube	Water Tightness in Core	Steel Wire Diameter (mm)	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
<b>IEC 60794-1-2</b>								<b>E1</b>	<b>E1</b>	
<b>GBWG*xx</b>	6 to 36	1.9	6	Dry	0.9	13.5	255	6000	3000	4900
<b>GDWG*xx</b>	6 to 36	1.9	6	Filled	0.9	13.5	260	6000	3000	5100
<b>GBWD*xx</b>	12 to 72	2.5	12	Dry	0.9	15.5	300	8000	4000	6300
<b>GDWD*xx</b>	12 to 72	2.5	12	Filled	0.9	15.5	320	8000	4000	6700
<b>GBWE*xx</b>	84 to 96	2.5	12	Dry	0.9	17.0	445	8000	4000	7800
<b>GDWE*xx</b>	84 to 96	2.5	12	Filled	0.9	16.8	440	8000	4000	8300
<b>GBWF*xx</b>	108 to 144	2.5	12	Dry	0.9	20.5	590	8000	4000	10700
<b>GDWF*xx</b>	108 to 144	2.5	12	Filled	0.9	20.2	600	8000	4000	10600

## Ordering Information

Fiber Type/Count	Dry Core					Filled Core				
	6	12	18	24	36	6	12	18	24	36
62.5/125-OM1	<b>GBWG106</b>	<b>GBWG112</b>	<b>GBWG118</b>	<b>GBWG124</b>	<b>GBWG136</b>	<b>GDWG106</b>	<b>GDWG112</b>	<b>GDWG118</b>	<b>GDWG124</b>	<b>GDWG136</b>
50/125-OM2	<b>GBWG206</b>	<b>GBWG212</b>	<b>GBWG218</b>	<b>GBWG224</b>	<b>GBWG236</b>	<b>GDWG206</b>	<b>GDWG212</b>	<b>GDWG218</b>	<b>GDWG224</b>	<b>GDWG236</b>
50/125-OM3	<b>GBWG306</b>	<b>GBWG312</b>	<b>GBWG318</b>	<b>GBWG324</b>	<b>GBWG336</b>	<b>GDWG306</b>	<b>GDWG312</b>	<b>GDWG318</b>	<b>GDWG324</b>	<b>GDWG336</b>
50/125-OM4	<b>GBWG606</b>	<b>GBWG612</b>	<b>GBWG618</b>	<b>GBWG624</b>	<b>GBWG636</b>	<b>GDWG606</b>	<b>GDWG612</b>	<b>GDWG618</b>	<b>GDWG624</b>	<b>GDWG636</b>
9/125 ITU G.652D	<b>GBWG806</b>	<b>GBWG812</b>	<b>GBWG818</b>	<b>GBWG824</b>	<b>GBWG836</b>	<b>GDWG806</b>	<b>GDWG812</b>	<b>GDWG818</b>	<b>GDWG824</b>	<b>GDWG836</b>
9/125 ITU G.655 C & D	<b>GBWG706</b>	<b>GBWG712</b>	<b>GBWG718</b>	<b>GBWG724</b>	<b>GBWG736</b>	<b>GDWG706</b>	<b>GDWG712</b>	<b>GDWG718</b>	<b>GDWG724</b>	<b>GDWG736</b>
Std. plywood reel (non-returnable)	Ø 1250 x 688 mm, Weight 93.0 kg					Ø 1250 x 688 mm, Weight 93.0 kg				
Std. delivery length	2100 ± 100 m					2100 ± 100 m				

Fiber Type/Count	Dry Core						Filled Core					
	12	24	36	48	60	72	12	24	36	48	60	72
62.5/125-OM1	<b>GBWD112</b>	<b>GBWD124</b>	<b>GBWD136</b>	<b>GBWD148</b>	<b>GBWD160</b>	<b>GBWD172</b>	<b>GDWD112</b>	<b>GDWD124</b>	<b>GDWD136</b>	<b>GDWD148</b>	<b>GDWD160</b>	<b>GDWD172</b>
50/125-OM2	<b>GBWD212</b>	<b>GBWD224</b>	<b>GBWD236</b>	<b>GBWD248</b>	<b>GBWD260</b>	<b>GBWD272</b>	<b>GDWD212</b>	<b>GDWD224</b>	<b>GDWD236</b>	<b>GDWD248</b>	<b>GDWD260</b>	<b>GDWD272</b>
50/125-OM3	<b>GBWD312</b>	<b>GBWD324</b>	<b>GBWD336</b>	<b>GBWD348</b>	<b>GBWD360</b>	<b>GBWD372</b>	<b>GDWD312</b>	<b>GDWD324</b>	<b>GDWD336</b>	<b>GDWD348</b>	<b>GDWD360</b>	<b>GDWD372</b>
50/125-OM4	<b>GBWD612</b>	<b>GBWD624</b>	<b>GBWD636</b>	<b>GBWD648</b>	<b>GBWD660</b>	<b>GBWD672</b>	<b>GDWD612</b>	<b>GDWD624</b>	<b>GDWD636</b>	<b>GDWD648</b>	<b>GDWD660</b>	<b>GDWD672</b>
9/125 ITU G.652D	<b>GBWD812</b>	<b>GBWD824</b>	<b>GBWD836</b>	<b>GBWD848</b>	<b>GBWD860</b>	<b>GBWD872</b>	<b>GDWD812</b>	<b>GDWD824</b>	<b>GDWD836</b>	<b>GDWD848</b>	<b>GDWD860</b>	<b>GDWD872</b>
9/125 ITU G.655 C & D	<b>GBWD712</b>	<b>GBWD724</b>	<b>GBWD736</b>	<b>GBWD748</b>	<b>GBWD760</b>	<b>GBWD772</b>	<b>GDWD712</b>	<b>GDWD724</b>	<b>GDWD736</b>	<b>GDWD748</b>	<b>GDWD760</b>	<b>GDWD772</b>
Std. plywood reel (non-returnable)	Ø 1250 x 688 mm, Weight 93.0 kg						Ø 1250 x 688 mm, Weight 93.0 kg					
Std. delivery length	2100 ± 100 m						2100 ± 100 m					

## Ordering Information

Fiber Type/Count	Dry Core		Filled Core	
	96	144	96	144
62.5/125-OM1	<b>GBWE196</b>	<b>GBWF144</b>	<b>GDWE196</b>	<b>GDWF144</b>
50/125-OM2	<b>GBWE296</b>	<b>GBWF244</b>	<b>GDWE296</b>	<b>GDWF244</b>
50/125-OM3	<b>GBWE396</b>	<b>GBWF344</b>	<b>GDWE396</b>	<b>GDWF344</b>
50/125-OM4	<b>GBWE696</b>	<b>GBWF644</b>	<b>GDWE696</b>	<b>GDWF644</b>
9/125 ITU G.652D	<b>GBWE896</b>	<b>GBWF844</b>	<b>GDWE896</b>	<b>GDWF844</b>
9/125 ITU G.655 C & D	<b>GBWE796</b>	<b>GBWF744</b>	<b>GDWE796</b>	<b>GDWF744</b>
Std. plywood reel (non-returnable)	Ø 1400 x 900 mm, Weight 120.0 kg			
Std. delivery length	2100 ± 100 m			

## Fiber Color Coding

No.		No.		No.	
1	Red	11	White	21	Grey + ring
2	Green	12	Aqua	22	Brown + ring
3	Blue	13	Red + ring	23	White + ring
4	Yellow	14	Green + ring	24	Aqua + ring
5	Violet	15	Blue + ring		
6	Pink	16	Yellow + ring		
7	Orange	17	Violet + ring		
8	Black	18	Pink + ring		
9	Grey	19	Orange + ring		
10	Brown	20	Black + ring		

## Tube Color Coding

No.	
1	Red
2	Green
3 to 12	White

**Outdoor Multi Loose Tube Cable  
with All Dielectric Self Supporting, Single Jacket**

GAAG, GAAD, GAAE, GAAF

A-DQ(ZN)2Y(T)



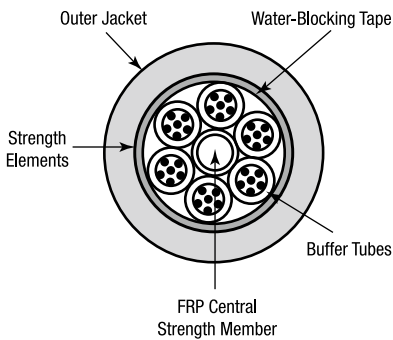
**Applications**

- All Dielectric Self Supporting cable (ADSS) for Outdoor use
- Suitable for installation between poles with a maximum span of 150 meters for GAAG, GAAD and GAAE, and 110 meter for GAAF
- Initial sag at 20°C: 1% of span

**Features & Benefits**

- Available in sizes from 6 to 144 fibers
- Jelly filled (non-dripping and silicon-free) loose tubes with primary coated optical fibres (Ø 250 ± 15 µm)
- Full dielectric construction, no grounding required
- Aramid yarns for tensile strength
- Installation-friendly because of the cable core kept free of grease (dry interstices)
- Length marking in meters for easy

**Cross Section**



**Specifications**

IEC 60794-1-2	
Crush Resistance (E3):	20 kN/m
Min. Bend Radius dynamic (E6):	20 x Ø
Min. Bend Radius static (E11):	15 x Ø
Min. Bend Radius fibers:	25 mm
Temperature Range (F1):	
- Transport/Storage	-30°C to +70°C
- Installation	-5°C to +50°C
- Operation	-30°C to +70°C
Watertightness (F5):	Pass





## Characteristics

Loose Tube	Fiber Count	Diameter Tube (mm)	Max. Fibers per Tube	Water Tightness in Core	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
<b>IEC 60794-1-2</b>							<b>E1</b>	<b>E1</b>	
<b>GAAG*xx</b>	6 to 36	1.9	6	Dry	10.3	72	6000	3000	3000
<b>GAAD*xx</b>	12 to 72	2.5	12	Dry	12.2	99	7000	3500	4000
<b>GAAE*xx</b>	84 to 96	2.5	12	Dry	13.8	132	8000	4000	4400
<b>GAAF*xx</b>	108 to 144	2.5	12	Dry	17.0	192	8000	4000	8000

## Ordering Information

Fiber Type/Count	Dry Core				
	6	12	18	24	36
62.5/125-OM1	GAAG106	GAAG112	GAAG118	GAAG124	GAAG136
50/125-OM2 BW 600/1200	GAAG206	GAAG212	GAAG218	GAAG224	GAAG236
50/125-OM3	GAAG306	GAAG312	GAAG318	GAAG324	GAAG336
50/125-OM4	GAAG606	GAAG612	GAAG618	GAAG624	GAAG636
9/125 ITU G.652D	GAAG806	GAAG812	GAAG818	GAAG824	GAAG836
9/125 ITU G.655 C&D	GAAG706	GAAG712	GAAG718	GAAG724	GAAG736
Std. plywood reel (non-returnable)	Ø 1250 x 688 mm, Weight 93.0 kg				
Std. delivery length	2100 ± 100 m				

Fiber Type/Count	Dry Core					
	12	24	36	48	60	72
62.5/125-OM1	GAAD112	GAAD124	GAAD136	GAAD148	GAAD160	GAAD172
50/125-OM2 BW 600/1200	GAAD212	GAAD224	GAAD236	GAAD248	GAAD260	GAAD272
50/125-OM3	GAAD312	GAAD324	GAAD336	GAAD348	GAAD360	GAAD372
50/125-OM4	GAAD612	GAAD624	GAAD636	GAAD648	GAAD660	GAAD672
9/125 ITU G.652D	GAAD812	GAAD824	GAAD836	GAAD848	GAAD860	GAAD872
9/125 ITU G.655 C & D	GAAD712	GAAD724	GAAD736	GAAD748	GAAD760	GAAD772
Std. plywood reel (non-returnable)	Ø 1250 x 688 mm, Weight 93.0 kg					
Std. delivery length	2100 ± 100 m					

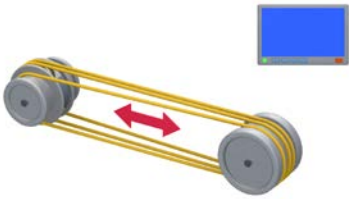
Fiber Type/Count	Dry Core					
	84	96	108	120	132	144
62.5/125-OM1	GAAE184	GAAE196	GAAF108	GAAF120	GAAF132	GAAF144
50/125-OM2 BW 600/1200	GAAE284	GAAE296	GAAF208	GAAF220	GAAF232	GAAF244
50/125-OM3	GAAE384	GAAE396	GAAF308	GAAF320	GAAF332	GAAF344
50/125-OM4	GAAE684	GAAE696	GAAF608	GAAF620	GAAF632	GAAF644
9/125 ITU G.652D	GAAE884	GAAE896	GAAF808	GAAF820	GAAF832	GAAF844
9/125 ITU G.655 C & D	GAAE784	GAAE796	GAAF708	GAAF720	GAAF732	GAAF744
Std. plywood reel (non-returnable)	Ø 1400 x 900 mm, Weight 120.0 kg					
Std. delivery length	2100 ± 100 m					

## Fiber Color Coding

No.		No.		No.		No.		No.	
1	Red	4	Yellow	7	Orange	10	Brown	1	Red
2	Green	5	Violet	8	Black	11	White	2	Green
3	Blue	6	Pink	9	Grey	12	Aqua	3-12	White

## Tube Color Coding

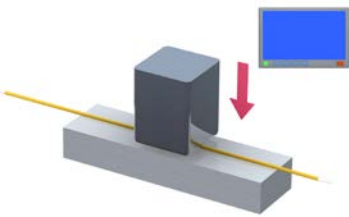
## Mechanical Test Procedures



### Tensile Performance

The tensile performance method monitors the attenuation variation and evaluates elongation of the cable which is subject to an increasing traction load during installation and operation.

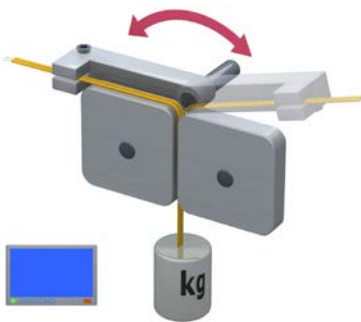
- Standards: IEC 60794-1-21 E1



### Crush Resistance

This test aims to verify the behavior of the cable and the fibers that are subject to compression during operation and/or installation. During the test, a cable sample is compressed (in a transverse direction) between a fixed and a mobile base, where an even force is applied on a cable section.

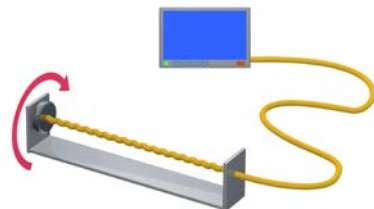
- Standards: IEC 60794-1-21 E3



### Repeated Bending

The test evaluates the ability of an optical fiber cable to withstand repeated bending. The cable is repeatedly bent at 90° to reproduce working conditions and to create stress.

- Standards: IEC 60794-1-21 E6



### Torsion

The torsion test is aimed at evaluating the ability of an optical fiber cable to withstand mechanical twisting. The test is carried out on a cable sample anchored to a fixed support and to a rotating support and by applying a sample load. The cable is then twisted in clockwise and anti-clockwise rotations to examine the possibility of physical damage.

- Standards: IEC 60794-1-21 E7

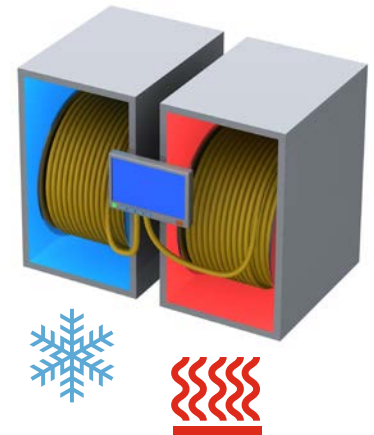


## Environmental Test Procedures

### Temperature Cycling

The temperature cycling test measures the ability of an optical fiber cable to provide stable operations during exposure to changing temperatures. Test conditions are regulated to simulate the worst conditions for such temperature changes to measure the possible effects on the optical and mechanical performance of a cable.

- Standards: IEC 60794-1-22 F1



### Water Penetration

Water penetration test examines the effectiveness of use of water blocking materials in fiber optic cable. This test is used as assurance criteria for the cable's resistance to longitudinal water penetration.

- Standards: IEC 60794-1-22 F5B/C



## Fire Performance Test Procedures



### Fire Propagation on a Vertical Single Cable

This test evaluates the flame retardant characteristics of a single cable. Depending on the cable diameter and weight, a regulated flame is continuously applied for a certain amount of time to the cable. The cable needs to extinguish itself and the burnt portion of the cable should not reach the top of the sample for the cable to pass the test.

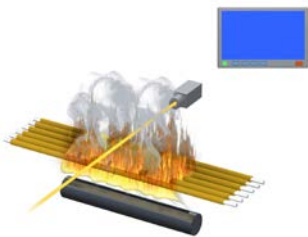
- Standard: IEC 60332-1



### Fire Propagation on a Vertical Cable Bundle

This test examines the flame retardant characteristics of a group of bundled cables (depending on the volume of flammable materials) fixed on a vertical 3.5m ladder and flame is applied to the bundle for 20 or 40 minutes. The height of the fire damage should not exceed 2.5 m for the bundled cables to pass the test.

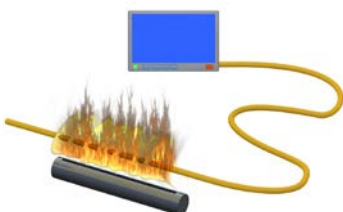
- Standard: IEC 60332-3



### Smoke Emission

Smoke emissions considerably reduce the visibility in case of fires. This test measures the density of smoke emitted from burning cables and this is determined with an optical transmission measurement.

- Standard: IEC 61034



### Fire Test with Circuit Integrity

It is vital for some circuits to maintain the power supply for the activation of safety equipment in case of fires. This test determines the circuit integrity of a cable during and after a prolonged fire. The cable passes the test when there is continuous circuit integrity during and after the test.

- Standard: IEC 60331-25



**Notes**

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