

Fibre optical cables



chainflex® types



Chainflex® cable	jacket	Shield	Bending radius min., e-chain® [factor x d]	Temperature, e-chain® from/to [°C]	Approvals and standards	oil-resistant	torsion resistant	v max. [m/s], unsupported	v max. [m/s] gliding	a max. [m/s²]	Page
Fibre optical cables											
Information fibre optic cables											212
Exclusive! chainflex® guarantee – guaranteed lifetime											► Selection table page 214
CFLK	PUR		12.5	-20/ +60		✓		10	5	20	216
CFLG.EC	PVC		7.5	+5/ +70		✓		3	2	20	218
CFLG.LB.PUR	PUR		5 - 7.5	-35/ +80		✓		10	6	20	220
CFLG.LB	TPE		5	-35/ +80		✓		10	6	20	224 New
CFLG.G	TPE		10	-40/ +80		✓		10	6	20	228
Twistable fibre optical cables (Chapter Twistable cables) ► Page 384											
CFROBOT5	TPE		10	-20/ +80		✓	✓	180	60		384

Overview to find the right fibre optic cable

	POF Plastic FOC 980/1000 µm	GOF Multimode Glass fibre FOC 50/125 µm 62,5/125 µm	GOF Singlemode Glass fibre FOC 9/125 µm
CFLK	✓		
CFLG.EC		✓	
CFLG.LB.PUR		✓	
CFLG.LB		✓	
CFLG		✓	✓

The safest and often cheapest way to transfer data to machines and plant.

Fault-free communication between all systems in machines and plant that is becoming more and more complex all the time should be a matter of course these days.

However, many plant manufacturers or operators have major EMC problems that occur sporadically or even only years later.

These problems are often based on conventional bus cables that either have insufficient or unreliable shielding.

Alongside igus® chainflex® bus cables that already prevent these problems to a large extent, chainflex® glass fibre optic cables provide further advantages for even greater data safety.

Fibre optic cables (FOC) do not require a braided shielding that is susceptible to mechanical damage as EMC protection, and are insensitive to EMC on account of their very nature, since industrial conventional interference fields do not have any effect on light signals.

In addition, fibre optic cables can be used independently of the system, since a special bus cable is not required for every bus system, rather one FOC type can usually be used to operate any bus system providing the bus system manufacturer provides respective FOC converters.

The large number of fibre optic cables in industrial data transmission is also much more manageable than the large number of different field or high-speed buses which require a separate cable for each bus.

Thus the following fibre types can be used for industrial data communication, completely independently of the type of field bus used. The fibre type and number depends only on which converters are used and which fibre type the respective manufacturer prescribes. The fibres are defined on the basis of diameter and result in a clear and limited choice.

Important fibre types:

- **Multimode fibres**

50/125 µm

62,5/125 µm

The ideal fibre for large data volumes and longer transmission lengths in the field of automation. On account of the very low output attenuation (0.8-3 dB/km per fibre and light wave length) of these fibre types, transmission lengths of several hundred metres can be realised quite easily.

- **POF (Plastic fibres)**

980/1000 µm

The ideal and low-cost fibre for short transmission paths. On account of the high output attenuation of the fibre type of 160-230 dB/km, lengths over 15 mm must be avoided in permanent-motion energy chains®.

- **PCF (Polymer Cladded Fibre)**

200/230 µm

The ideal compromise for POF fibre. This plasticcoated quartz glass fibre is a viable alternative for many terminal devices that have been designed for POF. This means greater transmission lengths (100 m and more) are possible without the original POF terminal devices having to be replaced.

chainflex® FOC offer the operator the following advantages:

1. Greater data security thanks to

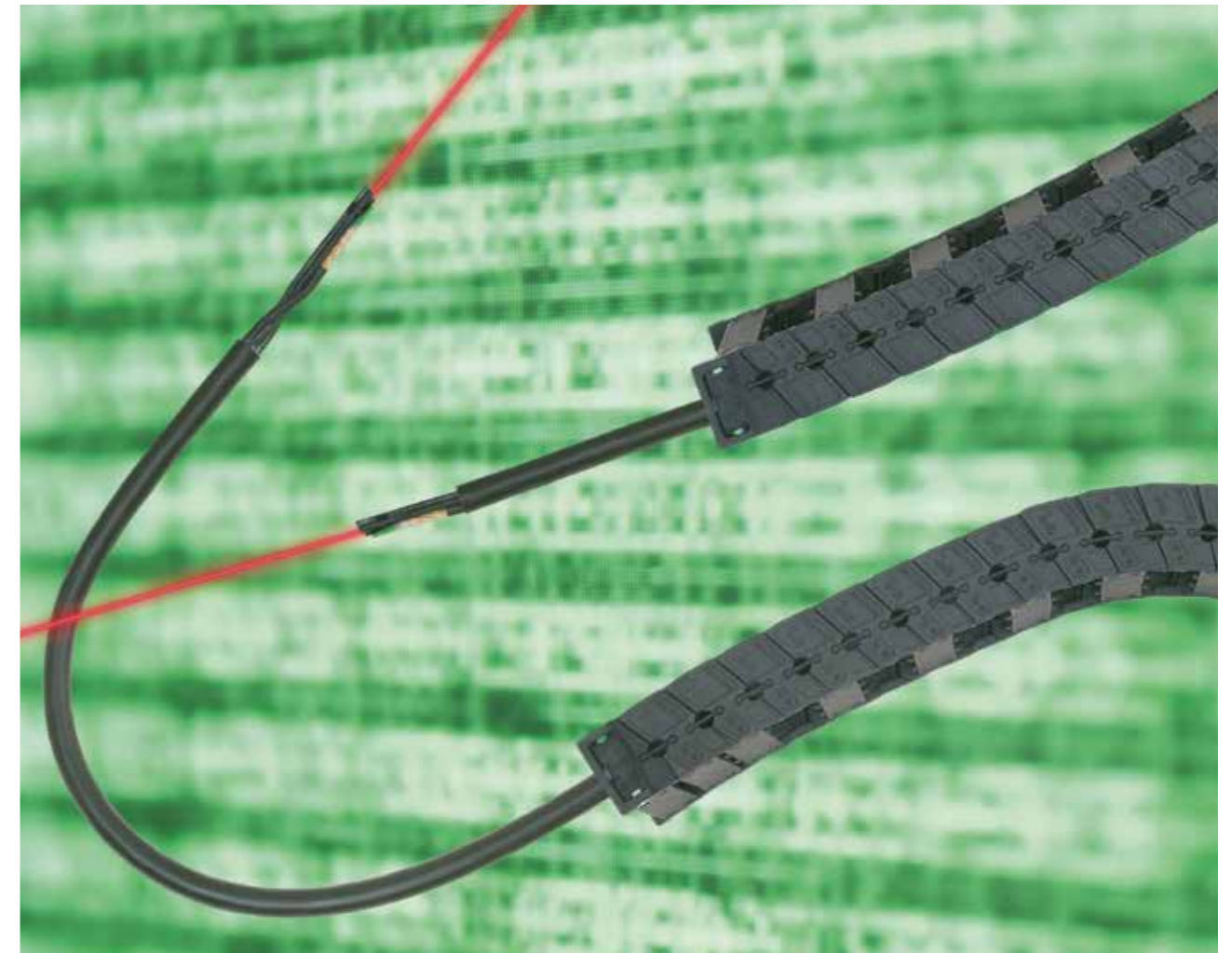
- FOC-typical better transmission characteristics
- Greater possible transmission lengths of several 100 m
- Greater possible data volumes thanks to lower attenuation values
- Maximum EMC protection for the data transmitted
- Future-proof installation (no cable replacement with new bus systems)

2. Greater mechanical protection through

- The FOC designed for permanent mechanical movement
- The igus®-typical highly abrasion-proof and chemical resistant sheathing materials
- The special chainflex® design concept (tested at 30 million cycles without a significant increase in attenuation)

3. Future-oriented cost reduction through

- Bus-independent bus cable wiring
- Longer service life in e-chains®
- Extendable without transmission limits









1,040 types from stock no cutting costs ...

(up to 10 cuts of the same types)

... no minimum order quantity ...

igus® GmbH Cologne | Tel. +49(0)2203/9649-800 Fax -222 | info@igus.eu | www.chainflex.eu 213








chainflex® cable	Temperature, from/to [°C]	v max. [m/s]		a max. [m/s²]	Travel distance [m]	Bending radius min. [factor x d]			Page	
		unsupported	gliding			5 million double strokes *	7.5 million double strokes *	10 million double strokes *		
Fibre optical cables										
 CFLK	-20 / -10 -10 / +50 +50 / +60	10	5	20	≤ 20	15 12.5 15	16 13.5 16	17 14.5 17	216	
 CFLG.EC	+5 / +15 +15 / +60 +60 / +70	3	2	20	≤ 10	10 7.5 10	11 8.5 11	12 9.5 12	218	
 CFLG.LB.PUR	-35 / -25 -25 / +70 +70 / +80	10	6	20	≤ 100	7.5 5 7.5	8.5 6 8.5	9.5 7 9.5	220	
 CFLG.LB	-35 / -25 -25 / +70 +70 / +80	10	6	20	≤ 100	7.5 5 7.5	8.5 6 8.5	9.5 7 9.5	224	
 CFLG.LB.CU	-35 / -25 -25 / +70 +70 / +80	10	6	20	≤ 100	10 7.5 10	11 8.5 11	12 9.5 12	224	
 CFLG	-40 / -30 -30 / +60 +60 / +70	10	6	20	> 400	12.5 10 12.5	13.5 11 13.5	14.5 12 14.5	228	

⁽¹⁾ Exclusive! Guaranteed lifetime for this series according to the guarantee conditions ► Page 22-25





* Guaranteed lifetime, higher numbers of double strokes possible.

- POF fibres for heavy duty applications and interference-free transmission
- PUR outer jacket
- Oil-resistant and coolant-resistant







Dynamic information

	Bending radius	e-chain®	minimum 12.5 x d
		flexible	minimum 10 x d
		fixed	minimum 7 x d
	Temperature	e-chain®	-20 °C to +60 °C
		flexible	-40 °C to +80 °C (following EN 60811-504)
		fixed	-50 °C to +60 °C (following DIN EN 50305)
	v max.	unsupported	10 m/s
		gliding	5 m/s
	a max.		20 m/s²
	Travel distance		Unsupported travel distances and up to 20 m for gliding applications, Class 3

Cable structure

	Fibre Cables	980/1000 µm fibre with PE isolation.
	Core stranding	POF fibre with stranded high-tensile plastic reinforcement.
	Core identification	Core black.
	Outer jacket	Low-adhesion mixture on the basis of PUR, adapted to suit the requirements in energy chains® (following DIN VDE 0282 Part 10). Colour: red lilac (similar to RAL 4001)

Properties and approvals

	UV-resistance	Medium
	Oil	Oil-resistant (following DIN EN 50363-10-2), Class 3
	Silicon-free	Free from silicon which can affect paint adhesion (following PV 3.10.7 – status 1992)
	Halogen-free	Following EN 50267-2-1
	Lead free	Following 2011/65/EC (RoHS-II)
	CE	Following 2006/95/EC

 **EPLAN download, configurators ▶ www.igus.eu/CFLK**

1,040 types from stock no cutting costs ...

(up to 10 cuts of the same types)

Image exemplary.

Guaranteed lifetime according to guarantee conditions (Page 22-25)

Double strokes*				5 mio.			7.5 mio.			10 mio.		
Temperature, from/to [°C]	v max. [m/s]	a max. [m/s²]	Travel distance [m]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	
-20 / -10							15	16	17			
-10 / +50	10	5	≤ 20	12.5	13.5	14.5						
+50 / +60				15	16	17						

* Higher number of double strokes possible - please ask for your individual calculation.


Typical application areas

- For heavy duty applications
- Maximum EMC protection
- Almost unlimited resistance to oil
- Preferably indoor applications
- Unsupported travel distances and up to 20 m for gliding applications
- Wood/stone processing, packaging industry, supply systems, handling, adjusting equipment


Delivery program Part No.	Number of fibres	Fibre diameter approx. [µm]	External diameter max. [mm]	Weight [kg/km]
CFLK.L1.01	1	980/1000	6.0	25
New CFLK.L1.02	2	980/1000	7.0	31

Note: The mentioned external diameters are maximum values and may tend toward lower tolerance limits.

Part No.	Bandwidth with 650 nm [MHz x km]	Attenuation with 650 nm [dB/km]	Fibres identification
CFLK.L1.01	40	200	black
CFLK.L1.02	40	200	black

 **Order example: CFLK.L1.01 – in your desired length (0.5 m steps)**
CFLK chainflex® series .L1 Type of fibres .01 Number of cores

 Online order ▶ www.chainflex.eu/CFLK

 Delivery time 24h or today
Delivery time means time until shipping of goods.



Woodworkingmachines with e-chains® and chainflex® cables






... no minimum order quantity ...

igus® GmbH Cologne | Tel. +49(0)2203/9649-800 Fax -222 | info@igus.eu | www.chainflex.eu







- Gradient glass-fibre cable for heavy duty applications
- PVC outer jacket
- Oil-resistant
- Flame-retardant







Dynamic information

	Bending radius	e-chain®	minimum 7.5 x d
		flexible	minimum 6 x d
		fixed	minimum 4 x d
	Temperature	e-chain®	+5 °C to +70 °C
		flexible	-5 °C to +70 °C (following EN 60811-504)
		fixed	-15 °C to +70 °C (following DIN EN 50305)
	v max.	unsupported	3 m/s
		gliding	2 m/s
	a max.		20 m/s ²
	Travel distance		Unsupported travel distances and up to 10 m for gliding applications, Class 2

Cable structure

	Fibre Cables	50/125 µm, 62.5/125 µm special fixed wire elements with aramide strain relief.
	Core stranding	FOC cores stranded with high-tensile aramide dampers with especially short pitch length.
	Core identification	FOC-cores: Orange or blue with black numerals.
	Outer jacket	Low-adhesion, oil-resistant mixture on the basis of PVC, adapted to suit the requirements in e-chains® (following DIN VDE 0281 Part 13). Colour: red lilac (similar to RAL 4001)

Properties and approvals

	Oil	Oil-resistant (following DIN EN 50363-4-1), Class 2
	Flame retardant	According to IEC 60332-1-2
	Silicon-free	Free from silicon which can affect paint adhesion (following PV 3.10.7 – status 1992)
	Lead free	Following 2011/65/EC (RoHS-II)
	Clean room	According to ISO Class 1. Outer jacket material complies with CF240.02.24, tested by IPA according to standard 14644-1
	CE	Following 2006/95/EC

 EPLAN download, configurators ► www.igus.eu/CFLGEC

1,040 types from stock no cutting costs ...

(up to 10 cuts of the same types)

Class 4.2.2 4 heavy duty applications 2 travel distance up to 10 m 2 oil-resistant

Guaranteed lifetime according to guarantee conditions (Page 22-25)

Double strokes*				5 mio.			7.5 mio.			10 mio.		
Temperature, from/to [°C]	v max. [m/s]	a max. [m/s ²]	Travel distance [m]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	
+5 / +15					10	11	12					
+15 / +60	3	2	≤ 10	7.5	8.5	9.5						
+60 / +70				10	11	12						

* Higher number of double strokes possible - please ask for your individual calculation.


Typical application areas

- For heavy duty applications
- Light oil influence
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Unsupported travel distances and up to 10 m for gliding applications
- Storage and retrieval units for high-bay warehouses, machining units/packaging machines, quick handling, indoor cranes, printer


Delivery program Part No.	Number of fibres Fibre diameter approx. [µm] Conductor cross-section [mm ²]:	External diameter max. [mm]	Copper index [kg/km]	Weight [kg/km]
CFLG.2EC.62,5/125	2x62.5/125	7.5	-	60
CFLG.2EC.50/125	2x50/125	7.5	-	60

Note: The mentioned external diameters are maximum values and may tend toward lower tolerance limits.

Part No.	Bandwidth with 850 nm [MHz x km]	Attenuation with 850 nm [dB/km]	Bandwidth with 1300 nm [MHz x km]	Attenuation with 1300 nm [dB/km]	Fibres identification
CFLG.2EC.62,5/125	≥ 200	≤ 3.0	≥ 500	≤ 0.7	orange with black numerals
CFLG.2EC.50/125	≥ 500	≤ 2.5	≥ 500	≤ 0.7	blue with black numerals

 **Order example: CFLG.2EC.50/125 – in your desired length (0.5 m steps)**
CFLG.2EC chainflex® series .50/125 Type of fibres

 Online order ► www.chainflex.eu/CFLGEC

 Delivery time 24h or today
Delivery time means time until shipping of goods.

... no minimum order quantity ...

igus® GmbH Cologne | Tel. +49(0)2203/9649-800 Fax -222 | info@igus.eu | www.chainflex.eu





- Gradient glass-fibre cable for extremely heavy duty applications
- PUR outer jacket
- Metal free
- Oil-resistant
- Low-temperature-flexible up to -40°C
- PVC-free/halogen-free
- UV-resistant

NEW!
FOC with offshore approval!

Dynamic information

	Bending radius	e-chain®	min. 5 x d (CFLG.LB.PUR) min. 7.5 x d (CFLG.LB.PUR.CU)
		flexible	min. 4 x d (CFLG.LB.PUR) min. 6 x d (CFLG.LB.PUR.CU)
		fixed	min. 3 x d (CFLG.LB.PUR) min. 4 x d (CFLG.LB.PUR.CU)
	Temperature	e-chain®	-35 °C to +80 °C
		flexible	-40 °C to +80 °C (following EN 60811-504)
		fixed	-50 °C to +80 °C (following DIN EN 50305)
	v max.	unsupported	10 m/s
		gliding	6 m/s
	a max.		20 m/s ²
	Travel distance		Unsupported travel distances and up to 100 m for gliding applications, Class 5

Cable structure

	Fibre Cables	50/125 µm, 62.5/125 µm, 9/125 µm special fixed wire elements with aramide strain relief.
	Core stranding	FOC cores stranded with high-tensile aramide dampers with especially short pitch length.
	Core identification	FOC-cores: Orange, blue or yellow with black numerals. Copper cores black with white numerals.
	Overall shield	Extremely bending-resistant aramid braid for torsion protection.
	Outer jacket	Low-adhesion, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in e-chains® (following DIN VDE 0282 Part 10). Colour: Jet black (similar to RAL 9005)

Electrical information

	Nominal voltage	CFLG.2LB.PUR.CU: 300/500 V (following DIN VDE 0245)
	Testing voltage	CFLG.2LB.PUR.CU: 2000V (following DIN VDE 0281-2)

EPLAN download, configurators ► www.igus.eu/CFLGLBPUR

1,040 types from stock no cutting costs ...
(up to 10 cuts of the same types)

Class 6.5.3 6 extremely heavy duty applications 5 travel distance up to 100 m 3 oil-resistant

Properties and approvals

	UV-resistance	High
	Oil	Oil-resistant (following DIN EN 50363-10-2), Class 3
	Offshore	MUD-resistant following NEK 606 - status 2009
	Flame retardant	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	Silicon-free	Free from silicon which can affect paint adhesion (following PV 3.10.7 – status 1992)
	Halogen-free	Following EN 50267-2-1
	GL	Certified according to DNVGL Type Testing – Certificate No.: 13 655-14 HH
	Lead free	Following 2011/65/EC (RoHS-II)
	Clean room	According to ISO Class 1. Outer jacket material complies with CF77.UL.05.12.D, tested by IPA according to standard 14644-1
	CE	Following 2006/95/EC

Guaranteed lifetime according to guarantee conditions (Page 22-25)

Double strokes*	Temperature, from/to [°C]	v max. [m/s]		a max. [m/s ²]	Travel distance [m]	5 mio.	7.5 mio.	10 mio.
		unsupported	gliding			R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
CFLG.LB.PUR	-35 / -25					7.5	8.5	9.5
	-25 / +70	10	6	20	≤ 100	5	6	7
	+70 / +80					7.5	8.5	9.5
CFLG.LB.CU.PUR	-35 / -25					10	11	12
	-25 / +70	10	6	20	≤ 100	7.5	8.5	9.5
	+70 / +80					10	11	12

* Higher number of double strokes possible - please ask for your individual calculation.

Typical application areas

- For extremely heavy duty applications with 5-7.5 x d
- Maximum EMC protection, with high transmission qualities in terms of glass-specific requirements
- Almost unlimited resistance to oil
- Indoor and outdoor applications
- Unsupported travel distances and up to 100 m for gliding applications (horizontal + vertical)
- Offshore, ship, storage and retrieval units for high-bay warehouses, machining units/packaging machines, quick handling, semiconductor insertion, refrigerating sector

... no minimum order quantity ...

igus® GmbH Cologne | Tel. +49(0)2203/9649-800 Fax -222 | info@igus.eu | www.chainflex.eu



IGUS® CHAINFLEX® CFLG.LB.PUR

Image exemplary.

Delivery program Part No. Bending radius 5 x d	Number of fibres Fibre diameter approx. [µm] Conductor cross-section [mm²]:	External diameter max. [mm]	Copper index [kg/ km]	Weight [kg/km]
New CFLG.2LB.PUR.62,5/125	2x62.5/125	8.5	-	62
New CFLG.4LB.PUR.62,5/125	4x62.5/125	9.0	-	68
New CFLG.6LB.PUR.62,5/125	6x62.5/125	11.0	-	96
New CFLG.12LB.PUR.62,5/125 ^{1.6)}	12x62.5/125	16.0	-	179
New CFLG.2LB.PUR.50/125 ^{1.6)}	2x50/125	8.5	-	62
New CFLG.4LB.PUR.50/125 ^{1.6)}	4x50/125	9.0	-	68
New CFLG.6LB.PUR.50/125 ^{1.6)}	6x50/125	11.0	-	96
New CFLG.12LB.PUR.50/125 ^{1.6)}	12x50/125	16.0	-	179
Bending radius 7.5 x d				
New CFLG.2LB.CU2.PUR.62,5/125	2x62.5/125 + 2x0.75	9.5	17	87
New CFLG.2LB.CU2.PUR.50/125 ^{1.6)}	2x50/125 + 2x0.75	9.5	17	87
New CFLG.2LB.CU4.PUR.62,5/125	2x62.5/125 + 2x1.5	10.0	32	107

^{1.6)} Delivery time: 6 weeks

Note: The mentioned external diameters are maximum values and may tend toward lower tolerance limits.

Part No.	Bandwidth with 850 nm [MHz x km]	Attenuation with 850 nm [dB/km]	Bandwidth with 1300 nm [MHz x km]	Attenuation with 1300 nm [dB/km]	Fibres identification
CFLG.2LB.PUR.62,5/125	≥ 200	≤ 3.0	≥ 500	≤ 0.7	orange with black numerals
CFLG.4LB.PUR.62,5/125	≥ 200	≤ 3.0	≥ 500	≤ 0.7	orange with black numerals
CFLG.6LB.PUR.62,5/125	≥ 200	≤ 3.0	≥ 500	≤ 0.7	orange with black numerals
CFLG.12LB.PUR.62,5/125	≥ 200	≤ 3.0	≥ 500	≤ 0.7	orange with black numerals
CFLG.2LB.PUR.50/125	≥ 500	≤ 2.5	≥ 500	≤ 0.7	blue with black numerals
CFLG.4LB.PUR.50/125	≥ 500	≤ 2.5	≥ 500	≤ 0.7	blue with black numerals
CFLG.6LB.PUR.50/125	≥ 500	≤ 2.5	≥ 500	≤ 0.7	blue with black numerals
CFLG.12LB.PUR.50/125	≥ 500	≤ 2.5	≥ 500	≤ 0.7	blue with black numerals
CFLG.2LB.CU2.PUR.62,5/125	≥ 500	≤ 2.5	≥ 500	≤ 0.7	orange with black numerals
CFLG.2LB.CU2.PUR.50/125	≥ 500	≤ 2.5	≥ 500	≤ 0.7	blue with black numerals
CFLG.2LB.CU4.PUR.62,5/125	≥ 500	≤ 2.5	≥ 500	≤ 0.7	orange with black numerals



Order example: CFLG.4LB.PUR.62,5/125 – in your desired length (0.5 m steps)
CFLG.LB.PUR chainflex® series .4 Number of cores .62,5/125 Type of fibres



Online order ► www.chainflex.eu/CFLGLBPUR



Delivery time 24h or today
Delivery time means time until shipping of goods.

1,040 types from stock no cutting costs ...

(up to 10 cuts of the same types)

... no minimum order quantity ...

igus® GmbH Cologne | Tel. +49(0)2203/9649-800 Fax -222 | info@igus.eu | www.chainflex.eu





- Gradient glass-fibre cable for extremely heavy duty applications
- TPE outer jacket
- Metal free
- Oil-resistant
- Low-temperature-flexible up to -40°C
- PVC-free/halogen-free
- UV-resistant

Dynamic information

	Bending radius	e-chain®	minimum 5 x d
		flexible	minimum 4 x d
		fixed	minimum 3 x d
	Temperature	e-chain®	-35 °C to +80 °C
		flexible	-50 °C to +80 °C (following EN 60811-504)
		fixed	-55 °C to +80 °C (following DIN EN 50305)
	v max.	unsupported	10 m/s
		gliding	6 m/s
	a max.		20 m/s ²
	Travel distance	Unsupported travel distances and up to 100 m for gliding applications, Class 5	

Cable structure

	Fibre Cables	50/125 µm, 62.5/125 µm special fixed wire elements with aramide strain relief.
	Core stranding	FOC cores stranded with high-tensile aramide dampers with especially short pitch length.
	Core identification	FOC-cores: Orange or blue with black numerals. Copper cores: Black with white numerals.
	Overall shield	Extremely bending-resistant aramid braid for torsion protection.
	Outer jacket	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in e-chains®. Colour: Jet black (similar to RAL 9005)

Electrical information

	Nominal voltage	CFLG.2LB.2CU: 300/500V (following DIN VDE 0245)
	Testing voltage	CFLG.2LB.2CU: 2000V (following DIN VDE 0281-2)

EPLAN download, configurators ► www.igus.eu/CFLGLB

1,040 types from stock no cutting costs ...

(up to 10 cuts of the same types)

Class 7.5.4 7 extremely heavy duty applications 5 travel distance up to 100 m 4 oil-resistant

Properties and approvals

	UV-resistance	High
	Oil	Oil-resistant (following DIN EN 60811-2-1), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
	Silicon-free	Free from silicon which can affect paint adhesion (following PV 3.10.7 – status 1992)
	Halogen-free	Following EN 50267-2-1
	Lead free	Following 2011/65/EC (RoHS-II)
	Clean room	According to ISO Class 1. Outer jacket material complies with CF9.15.07, tested by IPA according to standard 14644-1
	CE	Following 2006/95/EC

Guaranteed lifetime according to guarantee conditions (Page 22-25)

Double strokes*	Temperature, from/to [°C]	v max. [m/s]		a max. [m/s ²]	Travel distance [m]	5 mio.	7.5 mio.	10 mio.
		unsupported	gliding			R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
CFLG.LB	-35 / -25					7.5	8.5	9.5
	-25 / +70	10	6	20	≤ 100	5	6	7
	+70 / +80					7.5	8.5	9.5
CFLG.LB.CU	-35 / -25					10	11	12
	-25 / +70	10	6	20	≤ 100	7.5	8.5	9.5
	+70 / +80					10	11	12

* Higher number of double strokes possible - please ask for your individual calculation.

Typical application areas

- For extremely heavy duty applications with 5-7.5 x d
- Maximum EMC protection, with high transmission qualities in terms of glass-specific requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications
- Unsupported travel distances and up to 100 m for gliding applications (horizontal + vertical)
- Storage and retrieval units for high-bay warehouses, machining units/packaging machines, quick handling, semiconductor insertion, refrigerating sector

... no minimum order quantity ...

igus® GmbH Cologne | Tel. +49(0)2203/9649-800 Fax -222 | info@igus.eu | www.chainflex.eu






Image exemplary.


Delivery program Part No. Bending radius 5 x d	Number of fibres Fibre diameter approx. [µm] Conductor cross-section [mm²]:	External diameter max. [mm]	Copper index [kg/ km]	Weight [kg/km]
CFLG.2LB.62,5/125	2x62.5/125	8.5	-	57
CFLG.4LB.62,5/125	4x62.5/125	9.0	-	68
CFLG.6LB.62,5/125	6x62.5/125	11.0	-	91
CFLG.2LB.50/125	2x50/125	8.5	-	57
CFLG.4LB.50/125	4x50/125	9.0	-	68
CFLG.6LB.50/125	6x50/125	11.0	-	91
Bending radius 7.5 x d				
CFLG.2LB.CU2.50/125	2x50/125 + 2x0.75	9.5	16	87

Note: The mentioned external diameters are maximum values and may tend toward lower tolerance limits.

Part No.	Bandwidth with 850 nm [MHz x km]	Attenuation with 850 nm [dB/km]	Bandwidth with 1300 nm [MHz x km]	Attenuation with 1300 nm [dB/km]	Fibres identification
CFLG.2LB.62,5/125	≥ 200	≤ 3.0	≥ 500	≤ 0.7	orange with black numerals
CFLG.4LB.62,5/125	≥ 200	≤ 3.0	≥ 500	≤ 0.7	orange with black numerals
CFLG.6LB.62,5/125	≥ 200	≤ 3.0	≥ 500	≤ 0.7	orange with black numerals
CFLG.2LB.50/125	≥ 500	≤ 2.5	≥ 500	≤ 0.7	blue with black numerals
CFLG.4LB.50/125	≥ 500	≤ 2.5	≥ 500	≤ 0.7	blue with black numerals
CFLG.6LB.50/125	≥ 500	≤ 2.5	≥ 500	≤ 0.7	blue with black numerals
CFLG.2LB.CU2.50/125	≥ 500	≤ 2.5	≥ 500	≤ 0.7	blue with black numerals

 **Order example: CFLG.4LB.62,5/125 – in your desired length (0.5 m steps)**
CFLG.LB chainflex® series .4LB Number of cores .62,5/125 Type of fibres

 Online order ► www.chainflex.eu/CFLGLB

 Delivery time 24h or today
Delivery time means time until shipping of goods.

1,040 types from stock no cutting costs ...

(up to 10 cuts of the same types)

... no minimum order quantity ...

igus® GmbH Cologne | Tel. +49(0)2203/9649-800 Fax -222 | info@igus.eu | www.chainflex.eu



- Glass-fibre cable for extremely heavy duty applications
- TPE outer jacket
- PVC-free/halogen-free
- Low-temperature-flexible up to -40°C
- Hydrolysis-/microbe-resistant

Bending radius is reduced by 33%!

Dynamic information

	Bending radius	e-chain®	minimum 10 x d
		flexible	minimum 8 x d
		fixed	minimum 5 x d
	Temperature	e-chain®	-40 °C to +80 °C
		flexible	-50 °C to +80 °C (following EN 60811-504)
		fixed	-55 °C to +80 °C (following DIN EN 50305)
	v max.	unsupported	10 m/s
		gliding	6 m/s
	a max.		20m/s²
	Travel distance	Unsupported travel distances and up to 400 m and more for gliding applications, Class 6	

Cable structure

	Fibre optic cables	9/125µm, 50/125 µm, 62.5/125 µm fibres in gel-filled hollow cores.
	Stranding	Stranded GRP rods with integrated torsion protection braid in the outer jacket over gel-filled fibre sheath.
	Identification	Fibres ► Schedule delivery program
	Outer jacket	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in e-chains®. Colour: Jet black (similar to RAL 9005)

Properties and approvals

	UV-resistance	High
	Oil	Oil-resistant (following DIN EN 60811-2-1), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
	Silicon-free	Free from silicon which can affect paint adhesion (following PV 3.10.7 – status 1992)
	Halogen-free	Following EN 50267-2-1
	Lead free	Following 2011/65/EC (RoHS-II)
	Clean room	According to ISO Class 1. Outer jacket material complies with CF9.15.07, tested by IPA according to standard 14644-1
	CE	Following 2006/95/EC
	Info	For hanging applications, please use cables of the series CFLG.LB - see page 224!

Guaranteed lifetime according to guarantee conditions (Page 22-25)

Double strokes*	Temperature, from/to [°C]	v max. [m/s]		a max. [m/s²]	Travel distance [m]	5 mio.	7.5 mio.	10 mio.
		unsupported	gliding			R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-40 / -30				20	> 400	12.5	13.5	14.5
-30 / +70		10	6			10	11	12
+70 / +80						12.5	13.5	14.5

* Higher number of double strokes possible - please ask for your individual calculation.

Typical application areas

- For extremely heavy duty applications
- Maximum EMC protection, with high transmission qualities in terms of glass-specific requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications
- Unsupported travel distances and up to 400 m and more for gliding applications (horizontal)
- Ship to Shore, Crane applications, conveyer technology, low-temperature-applications



EPLAN download, configurators ► www.igus.eu/CFLG

1,040 types from stock no cutting costs ...

(up to 10 cuts of the same types)

Test data ► page 52

... no minimum order quantity ...

igus® GmbH Cologne | Tel. +49(0)2203/9649-800 Fax -222 | info@igus.eu | www.chainflex.eu





Image exemplary.


Delivery program Part No.	Number of fibres	Fibre diameter approx. [µm]	External diameter max. [mm]	Weight [kg/km]
CFLG.6G.62,5/125.TC	6	62.5/125	10.0	80
CFLG.12G.62,5/125.TC	12	62.5/125	10.0	80
CFLG.6G.50/125.TC	6	50/125	10.0	80
CFLG.12G.50/125.TC	12	50/125	10.0	80
CFLG.12E.9/125.TC	12	9/125	10.0	80

Other numbers of fibres on request.
Note: The mentioned external diameters are maximum values and may tend toward lower tolerance limits.


Part No.	Bandwidth with 850 nm [MHz x km]	Attenuation with 850 nm [dB/km]	Bandwidth with 1300 nm [MHz x km]	Attenuation with 1300 nm [dB/km]
CFLG.6G.62,5/125.TC	≥ 200	≤ 3.0	≥ 500	≤ 0.7
CFLG.12G.62,5/125.TC	≥ 200	≤ 3.0	≥ 500	≤ 0.7
CFLG.6G.50/125.TC	≥ 500	≤ 2.5	≥ 500	≤ 0.7
CFLG.12G.50/125.TC	≥ 500	≤ 2.5	≥ 500	≤ 0.7

Part No.	Chromatic dispersion with 1310 nm [ps/nm x km]	Attenuation with 1310 nm [dB/km]	Chromatic dispersion with 1550 nm [ps/nm x km]	Attenuation with 1550 nm [dB/km]
CFLG.12E.9/125.TC	3	≤ 0.35	18	≤ 0.23

Part No.	Fibres identification	Hollow core identification
CFLG.6G.62,5/125.TC	ecru, yellow, green, red, violet, blue	orange
CFLG.12G.62,5/125.TC	ecru, yellow, green, red, violet, blue, lightblue, grey, brown, black, orange, pink	orange
CFLG.6G.50/125.TC	ecru, yellow, green, red, violet, blue	blue
CFLG.12G.50/125.TC	ecru, yellow, green, red, violet, blue, lightblue, grey, brown, black, orange, pink	blue
CFLG.12E.9/125.TC	ecru, yellow, green, red, violet, blue, lightblue, grey, brown, black, orange, pink	yellow

 **Order example: CFLG.6G.62,5/125.TC – in your desired length (0.5 m steps)**
CFLG.G chainflex® series .6G Number of cores .62,5/125 Type of fibres .TC Special identification

 Online order ► www.chainflex.eu/CFLG

 Delivery time 24h or today
Delivery time means time until shipping of goods.

 EPLAN download, configurators ► www.igus.eu/CFLGGT

1,040 types from stock no cutting costs ...

(up to 10 cuts of the same types)

... no minimum order quantity ...

igus® GmbH Cologne | Tel. +49(0)2203/9649-800 Fax -222 | info@igus.eu | www.chainflex.eu

