Fibre Optic Cables

chainflex® cable	Jacket	Bend radius 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.	Page
Fibre Optic Cables										
Information about fibre optic cables										216
CFLK	PUR	12.5	-20/+60		✓		10	5	20	220
CFLG88	PVC	7.5	+5/+70				3	2	20	222
CFLG.LB.PUR	PUR	5	-25/+80		✓		10	6	20	224
CFLG.LB	TPE	5	-35/+80		✓		10	6	20	228
CFLG.G	TPE	10	-40/+80		✓		10	6	20	232
Twistable fibre optic cable (twistable cables chapter ► Page 378)										
CFROBOT5	TPE	10	-20/+80		✓		180	180		396

Overview to find the right fibre optic cable

	POF Plastic FOC 980/1,000µm	GOF Multimode Glass fibre FOC 50/125µm 62.5/125µm	GOF Singlemode Glass fibre FOC 9/125µm
CFLK	✓		
CFLG88		✓	
CFLG.LB.PUR		✓	✓
CFLG.LB		✓	
CFLG.G		✓	✓
CFROBOT5		✓	

36-month chainflex® guarantee

Guaranteed service life for predictable reliability

► Selection table page 218

With the help of the chainflex® service life calculator, you can quickly and easily calculate the expected service life of chainflex® cables specifically for your application:

www.igus.eu/chainflexlife

Guarantee igus chainflex 36 up to 36 months guarantee

igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year

The safest and often most cost-efficient way to transfer data to machines and plant.

Communication between systems in machines and plant is becoming more and more complex all the time, yet fault-free performance is becoming ever more important.

However, many plant manufacturers or operators have major EMC problems that occur sporadically or even after years of operation.

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® 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 type, 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:

- **Multi-mode fibres**
  50/125µm
  62.5/125µm
  The ideal fibre for large data volumes and longer transmission lengths in the field of automation. Transmission lengths of several hundred metres can be realised quite easily, due to the very low output attenuation (0.8-3db/km per fibre and light wave length) of these fibre types.

- **POF (plastic fibres)**
  980/1,000µm
  The ideal and low-cost fibre for short transmission paths. On account of the high output attenuation of the fibre type of 160-230dB/km, lengths over 15m must be avoided in constantly moving energy chains.

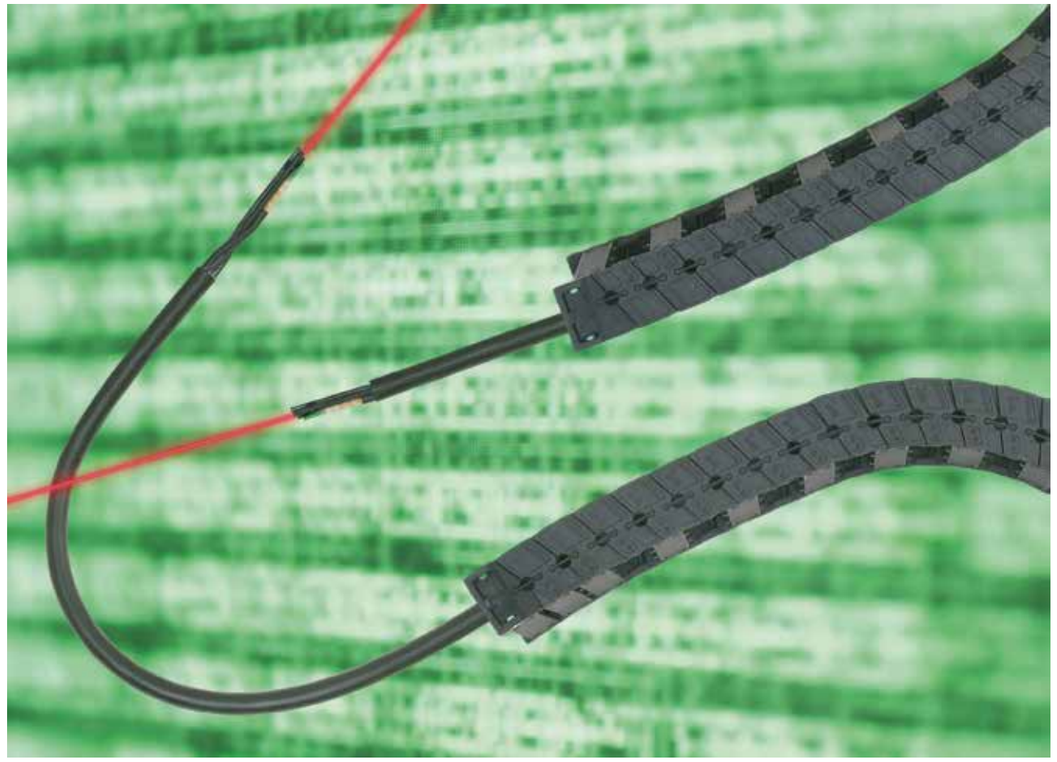
- **PCF (Polymer Cladded Fiber)**
  200/230µm
  The ideal compromise for POF fibre. This plastic coated quartz glass fibre is a viable alternative for many terminal devices that have been designed for POF.
  This means greater transmission lengths (100m and more) are possible without the original POF terminal devices having to be replaced.

chainflex® FOC offer the operator the following advantages:

1. Greater data security
- Better transmission characteristics
- Greater possible transmission lengths of several 100m
- 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
- The FOC designed for permanent mechanical movement
- The igus® typical highly abrasion-proof and chemical-resistant sheathing materials
- The special chainflex® design concept (tested for 30 million cycles without a significant increase in attenuation)

3. Future-oriented cost reduction
- Bus-independent bus cable wiring
- Longer service life in e-chains®
- Extendable without transmission limits



chainflex® guarantee

Guaranteed service life (1)

	chainflex® cables	Temperature, from/to [°C]	v max. [m/s] unsupported	v max. [m/s] gliding	a max. [m/s²]	Travel distance [m]	Minimum bend radius [factor x d] 5 million (1 million) double strokes *	Minimum bend radius [factor x d] 7.5 million (3 million) double strokes *	Minimum bend radius [factor x d] 10 million (5 million) double strokes *	Page
Fibre Optic Cables										
	CFLK	-20 / -10 -10/+50 +50/+60	10	5	20	≤ 20	15 12.5 15	16 13.5 16	17 14.5 17	220
	CFLG88	+5 / +15 +15 / +60 +60 / +70	3	-	20	≤ 10	10 7.5 10	11 8.5 11	12 9.5 12	222
	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	224
	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	228
	CFLG.G	-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	232

(1) Guaranteed service life for these series (details ▶ see page 28-29)

* Higher number of double strokes? Calculate service life online: ▶ www.igus.eu/chainflexlife
Figures in brackets refer to series CFLG88

Fibre Optic Cable | PUR | chainflex® CFLK

Example image

10 million Double strokes guaranteed

12.5 x d Bend radius, e-chain®

20m Travel distance, e-chain®

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

Dynamic information

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

Cable structure

Fibre Optic Cable	980/1000 µm fibre with PE isolation.
Core structure	POF fibre with stranded high-tensile plastic reinforcement.
Core identification	▶ Product range table
Outer jacket	Low-adhesion, halogen-free PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2). Colour: Red lilac (similar to RAL 4001)

Properties and approvals

UV resistance	Medium
Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
Halogen-free	Following DIN EN 60754
UL verified	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
Lead-free	Following 2011/65/EC (RoHS-II/RoHS-III)
CE	Following 2014/35/EU
UKCA	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

EU2023

CFLK
PUR
12.5 x d

Class 5.3.3.1

Basic requirements	low	1	2	3	4	5	6	7 highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m
Oil resistance	none	1	2	3	4	highest		
Torsion	none	1	2	3	4	±360°		

Guaranteed service life (details see page 28-29)

Double strokes*	5 million	7.5 million	10 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-20/-10	15	16	17
-10/+50	12.5	13.5	14.5
+50/+60	15	16	17

* Higher number of double strokes? Service life calculation online ▶ www.igus.eu/chainflexlife

Typical application areas

- For heavy-duty applications, Class 5
- Unsupported travels and up to 20m for gliding applications, Class 3
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Highest EMC safety
- Preferably indoor applications
- Wood/stone processing, packaging industry, feeding, handling, adjusting devices

Part No.	Number of fibres/ Fibre diameter	Outer diameter (d) max. [mm]	Weight [kg/km]
CFLK.L1.01	1x980/1,000	6.0	27
CFLK.L1.02	2x980/1,000	7.0	31

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.

Part No.	Bandwidth [MHz x km] @ 650nm	Attenuation [dB/km] @ 650nm	Fibre identification
CFLK.L1.01	2	200	black
CFLK.L1.02	2	200	black, blue

Woodworking machines with e-chains® and chainflex® cables

Fibre Optic Cable | PVC | chainflex® CFLG88

Example image

5,000,000 Double strokes guaranteed

7.5 x d Bend radius, e-chain®

10m Travel distance, e-chain®

- **Graded index glass-fibre cable for flexing applications**
- **PVC outer jacket**
- **Flame-retardant**

Dynamic information

Bend radius	**e-chain® linear**	minimum 7.5 x d
	flexible	minimum 6 x d
	fixed	minimum 4 x d
Temperature	**e-chain® linear**	+5°C up to +70°C
	flexible	-5°C up to +70°C (following DIN EN 60811-504)
	fixed	-15°C up to +70°C (following DIN EN 50305)
v max.	**unsupported**	3m/s
a max.		20m/s²
Travel distance		Unsupported travels up to 10m, Class 1

Cable structure

Fibre Optic Cable	50/125µm, 62.5/125µm bending-resistant solid glass fibre optic cores, with aramid strain relief elements.
Core structure	FOC cores wound with a short pitch length with high-tensile aramid dampers.
Core identification	FOC cores: Orange or blue with black numbers.
Outer jacket	Low-adhesion PVC mixture, adapted to suit the requirements in e-chains®. Colour: jet black (similar to RAL 9005)

Properties and approvals

Flame-retardant	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
UL verified	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
Lead-free	Following 2011/65/EC (RoHS-II/RoHS-III)
Cleanroom	According to ISO Class 1. The outer jacket material of this series complies with CF240.02.24 - tested by IPA according to standard DIN EN ISO 14644-1
CE	Following 2014/35/EU
UKCA	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

EPLAN download, configurators ▶ www.igus.eu/CFLG88

EU2023

Class 3.1.1.1

Basic requirements	low	1	2	**3**	4	5	6	7 highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m
Oil resistance	none	1	2	3	4	highest		
Torsion	none	1	2	3	4	±360°		

Guaranteed service life (details see page 28-29)

Double strokes*	1 million	3 million	5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	10	11	12
+15/+60	7.5	8.5	9.5
+60/+70	10	11	12

* Higher number of double strokes? Service life calculation online ▶ www.igus.eu/chainflexlife

Typical application areas

- For flexing applications, Class 3
- Especially for unsupported travels, Class 1
- Without influence of oil, Class 1
- No torsion, Class 1
- Highest EMC safety
- Preferably indoor applications
- Wood/stone processing, packaging industry, feeding, handling, adjusting devices

Part No.	Number of fibres/ Fibre diameter	Outer diameter (d) max. [mm]	Weight [kg/km]
CFLG88.2.62.5/125 [11)]	2x62.5/125	7.0	44
CFLG88.2.50/125	2x50/125	7.0	44

[11)] Phase-out model
Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.

Part No.	Bandwidth [MHz x km] @ 850nm	Attenuation [dB/km] @ 850nm	Bandwidth [MHz x km] @ 1,300nm	Attenuation [dB/km] @ 1,300nm	Fibre identification
CFLG88.2.62.5/125	≥ 200	≤ 3.5	≥ 500	≤ 1.5	orange with black numbers
CFLG88.2.50/125	≥ 200	≤ 3.0	≥ 500	≤ 1.0	blue with black numbers

Cables available in the chainflex® CASE

Simple savings on delivery, storage space and re-ordering with the chainflex® CASE - ship'n store by igus®.

More on this on page 24/25 and online: www.igus.eu/cf-case

CFLG88
PVC
7.5 x d

PVC | iguPUR | PUR | TPE

Fibre Optic Cable | PUR | chainflex® CFLG.LB.PUR

Class 6.5.3.1

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6		≥ 400m
Oil resistance	none	1	2	3	4		highest		
Torsion	none	1	2	3	4		±360°		

10 million Double strokes guaranteed

5 x d Bend radius, e-chain®

100m Travel distance, e-chain®

- Graded index glass-fibre cable for heaviest duty applications
- PUR outer jacket
- Metal-free
- Oil-resistant
- Low-temperature-flexible
- PVC and halogen-free
- UV-resistant

Dynamic information

Bend radius	e-chain® linear	minimum 5 x d
	flexible	minimum 4 x d
	fixed	minimum 3 x d
Temperature	e-chain® linear	-25°C up to +80°C
	flexible	-40°C up to +80°C (following DIN EN 60811-504)
	fixed	-50°C up to +80°C (following DIN EN 50305)
v max.	unsupported	10m/s
	gliding	6m/s
a max.		20m/s²
Travel distance		Unsupported travels and up to 100m for gliding applications, Class 5

Cable structure

Fibre Optic Cable	50/125 µm, 62.5/125 µm, 9/125 µm especially bending-resistant solid glass fibre optic cores, with aramid strain relief elements.
Core structure	FOC cores wound with a short pitch length with high-tensile aramid dampers.
Core identification	Orange, blue or yellow with black numbers.
Overall shield	Extremely bending-resistant aramid braid for torsion protection.
Outer jacket	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: jet black (similar to RAL 9005)

Example image

Properties and approvals

UV resistance	High
Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
Offshore	MUD-resistant following NEK 606 - status 2016
Flame-retardant	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
Halogen-free	Following DIN EN 60754
UL verified	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
DNV	Type Approval Certificate TAE000048J
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
Lead-free	Following 2011/65/EC (RoHS-II/RoHS-III)
Cleanroom	According to ISO Class 1. The outer jacket material of this series complies with CF77.UL.05.12.D - tested by IPA according to standard DIN EN ISO 14644-1
CE	Following 2014/35/EU
UKCA	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

Guaranteed service life (details see page 28-29)

Double strokes*	5 million	7.5 million	10 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-25/-15	7.5	8.5	9.5
-15/+70	5	6	7
+70/+80	7.5	8.5	9.5

* Higher number of double strokes? Service life calculation online ▶ www.igus.eu/chainflexlife

Typical application areas

- For heaviest duty applications with 5-7.5 x d, Class 6
- Unsupported travels and up to 100 m for gliding applications (horizontal + vertical), Class 5
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Maximum EMC protection, with high transmission qualities
- Indoor and outdoor applications
- Offshore, ships, storage and retrieval units, processing/packaging machines, fast handling, semiconductor assembly, refrigeration area

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

CFLG.
LB.PUR
PUR
5 x d

PVC | iguPUR | PUR | TPE

Fibre Optic Cable | PUR | chainflex® CFLG.LB.PUR

Class 6.5.3.1

Basic requirements	low	1	2	3	4	5	6	7 highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m
Oil resistance	none	1	2	3	4 highest			
Torsion	none	1	2	3	4	±360°		

CFLG.
LB.PUR
PUR
5 x d

Example image

Part No.	Number of fibres/ Fibre diameter	Outer diameter (d) max. [mm]	Weight [kg/km]
CFLG.2LB.PUR.62.5/125	2x62.5/125	8.5	62
CFLG.4LB.PUR.62.5/125	4x62.5/125	9.0	68
CFLG.6LB.PUR.62.5/125 [11)]	6x62.5/125	11.0	96
CFLG.12LB.PUR.62.5/125	12x62.5/125	14.0	150
CFLG.6LB.PUR.50/125	6x50/125	11.0	95
CFLG.12LB.PUR.50/125	12x50/125	14.0	160
CFLG.6LB.PUR.9/125	6x9/125	11.0	95

[11)] Phase-out model
Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.

Part No.	Bandwidth [MHz x km] @ 850nm	Attenuation [dB/km] @ 850nm	Bandwidth [MHz x km] @ 1,300nm	Attenuation [dB/km] @ 1,300nm	Fibre identification
CFLG.2LB.PUR.62.5/125	≥ 200	≤ 3.5	≥ 500	≤ 1.5	orange with black numbers
CFLG.4LB.PUR.62.5/125	≥ 200	≤ 3.5	≥ 500	≤ 1.5	orange with black numbers
CFLG.6LB.PUR.62.5/125	≥ 200	≤ 3.5	≥ 500	≤ 1.5	orange with black numbers
CFLG.12LB.PUR.62.5/125	≥ 200	≤ 3.0	≥ 500	≤ 0.7	orange with black numbers
CFLG.6LB.PUR.50/125	≥ 500	≤ 3.0	≥ 500	≤ 1.0	blue with black numbers
CFLG.12LB.PUR.50/125	≥ 200	≤ 3.0	≥ 500	≤ 1.0	blue with black numbers

Part No.	Attenuation [dB/km] @ 1,310nm	Chromatic dispersion [ps/nm/km] @ 1,310nm	Attenuation [dB/km] @ 1,550nm	Chromatic dispersion [ps/nm/km] @ 1,550nm	Fibre identification
CFLG.6LB.PUR.9/125	≤ 0.35	3.5	≤ 0.25	18	yellow with black numbers

Order example: CFLG.4LB.PUR.62.5/125 - to your desired length (0.5m steps)
CFLG.LB.PUR **chainflex® series** .4 **Number of fibres** .62.5/125 **Fibre diameter**

Order online ▶ www.igus.eu/CFLGLBPUR

Delivery time 24hrs or today.
Delivery time means time until goods are shipped.

Cables available in the chainflex® CASE

Simple savings on delivery, storage space and re-ordering with the chainflex® CASE - ship'n store by igus®.

More on this page 24/25 and online: www.igus.eu/cf-case

Guarantee igus chainflex 36 up to 36 months guarantee

igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year

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

Fibre Optic Cable | TPE | chainflex® CFLG.LB

Example image

10 million Double strokes guaranteed

5 x d Bend radius, e-chain®

100m Travel distance, e-chain®

- Graded index glass-fibre cable for heaviest duty applications
- TPE outer jacket
- Metal-free
- Oil and bio-oil-resistant
- Low-temperature-flexible
- PVC and halogen-free
- UV-resistant

Dynamic information

Bend radius	**e-chain® linear**	minimum 5 x d
	flexible	minimum 4 x d
	fixed	minimum 3 x d
Temperature	**e-chain® linear**	-35°C up to +80°C
	flexible	-50°C up to +80°C (following DIN EN 60811-504)
	fixed	-55°C up to +80°C (following DIN EN 50305)
v max.	**unsupported**	10m/s
	gliding	6m/s
a max.		20m/s²
Travel distance		Unsupported travels and up to 100m for gliding applications, Class 5 **CFLG.12.LB:** Unsupported travels and up to 400m for gliding applications, Class 6

Cable structure

Fibre Optic Cable	50/125µm, 62.5/125µm bending-resistant solid glass fibre optic cores, with aramid strain relief elements.
Core structure	FOC cores wound with a short pitch length with high-tensile aramid dampers.
Core identification	Orange or blue with black numbers.
Overall shield	Extremely bending-resistant aramid braid for torsion protection.
Outer jacket	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: jet black (similar to RAL 9005)

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

36-month guarantee ... more than 1,350 cable types from stock ... no cutting charges

Class 7.5.4.1

Basic requirements	low	1	2	3	4	5	6	7 highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m
Oil resistance	none	1	2	3	4	highest		
Torsion	none	1	2	3	4	±360°		

Properties and approvals

UV resistance	High
Oil resistance	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
Halogen-free	Following DIN EN 60754
UL verified	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
Lead-free	Following 2011/65/EC (RoHS-II/RoHS-III)
Cleanroom	According to ISO Class 1. The outer jacket material of this series complies with CF9.15.07 - tested by IPA according to standard DIN EN ISO 14644-1
CE	Following 2014/35/EU
UKCA	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

Guaranteed service life (details see page 28-29)

Double strokes*	5 million	7.5 million	10 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	7.5	8.5	9.5
-25/+70	5	6	7
+70/+80	7.5	8.5	9.5

* Higher number of double strokes? Service life calculation online ▶ www.igus.eu/chainflexlife

Typical application areas

- For heaviest duty applications with 5-7.5 x d, Class 7
- Unsupported travels and up to 100m for gliding applications (horizontal + vertical), Class 5,
  CFLG.12.LB: Unsupported travels and up to 400m in gliding applications (horizontal + vertical), Class 6
- Almost unlimited resistance to oil, also with bio-oils, Class 4
- No torsion, Class 1
- Maximum EMC protection, with high transmission qualities
- Indoor and outdoor applications
- Crane applications, conveyor technology, storage and retrieval units, processing/ packaging machines, fast handling, semiconductor assembly, refrigeration area

UL-verified chainflex® guarantee ... www.igus.eu/ul-verified

CFLG.LB
TPE
5 x d

Fibre Optic Cable | TPE | chainflex® CFLG.LB

Class 7.5.4.1

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6		≥ 400m
Oil resistance	none	1	2	3	4				highest
Torsion	none	1	2	3	4				±360°

CFLG.LB
TPE
5 x d

Example image

Part No.	Number of fibres/ Fibre diameter	Outer diameter (d) max. [mm]	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.12LB.62.5/125	12x62.5/125	14.0	150
CFLG.2LB.50/125	2x50/125	8.5	54
CFLG.4LB.50/125	4x50/125	9.0	64
CFLG.6LB.50/125	6x50/125	11.0	86
CFLG.12LB.50/125	12x50/125	14.0	150

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.

Part No.	Bandwidth [MHz x km] @ 850nm	Attenuation [dB/km] @ 850nm	Bandwidth [MHz x km] @ 1,300nm	Attenuation [dB/km] @ 1,300nm	Fibre identification
CFLG.2LB.62.5/125	≥ 200	≤ 3.5	≥ 500	≤ 1.5	orange with black numbers
CFLG.4LB.62.5/125	≥ 200	≤ 3.5	≥ 500	≤ 1.5	orange with black numbers
CFLG.6LB.62.5/125	≥ 200	≤ 3.5	≥ 500	≤ 1.5	orange with black numbers
CFLG.12LB.62.5/125	≥ 200	≤ 3.0	≥ 500	≤ 0.7	orange with black numbers
CFLG.2LB.50/125	≥ 500	≤ 3.0	≥ 500	≤ 1.0	blue with black numbers
CFLG.4LB.50/125	≥ 500	≤ 3.0	≥ 500	≤ 1.0	blue with black numbers
CFLG.6LB.50/125	≥ 500	≤ 3.0	≥ 500	≤ 1.0	blue with black numbers
CFLG.12LB.50/125	≥ 500	≤ 3.0	≥ 500	≤ 1.0	blue with black numbers

Order example: CFLG.4LB.62.5/125 - to your desired length (0.5m steps)
CFLG.LB **chainflex® series** .4 **Number of fibres** .62.5/125 **Fibre diameter**

Order online ▶ www.igus.eu/CFLGLB

Delivery time 24hrs or today.
Delivery time means time until goods are shipped.

chainflex® fibre optic cable on an STS crane

chainflex CASE

Cables available in the chainflex® CASE

Simple savings on delivery, storage space and re-ordering with the chainflex® CASE - ship'n store by igus®.

More on this on page 24/25 and online: www.igus.eu/cf-case

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Fibre Optic Cable | TPE | chainflex® CFLG.G

Example image

10 million
Double strokes guaranteed

10 x d
Bend radius, e-chain®

400m
Travel distance, e-chain®

- Glass-fibre cable for heaviest duty applications
- TPE outer jacket
- Oil and bio-oil-resistant
- PVC and halogen-free
- Low-temperature-flexible
- Hydrolysis and microbe-resistant

Dynamic information

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

Cable structure

Fibre Optic Cable	9/125 µm, 50/125 µm, 62.5/125 µm fibres in gel-filled tubes.
Core structure	Gel-filled fibre sheath surrounded by GRP rods and torsion protection braid in the outer jacket.
Core identification	Fibres ▶ Product range table
Outer jacket	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: jet black (similar to RAL 9005)

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36-month guarantee ... more than 1,350 cable types from stock ... no cutting charges

Class 7.6.4.1

Basic requirements	low	1	2	3	4	5	6	**7**	highest
Travel distance	unsupported	1	2	3	4	5	**6**	≥ 400m	
Oil resistance	none	1	2	3	**4**	highest			
Torsion	none	**1**	2	3	4	±360°			

Properties and approvals

UV resistance	High
Oil resistance	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
Halogen-free	Following DIN EN 60754
UL verified	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
Lead-free	Following 2011/65/EC (RoHS-II/RoHS-III)
Cleanroom	According to ISO Class 1. The outer jacket material of this series complies with CF9.15.07 - tested by IPA according to standard DIN EN ISO 14644-1
CE	Following 2014/35/EU
UKCA	In accordance with the valid regulations of the United Kingdom (as at 08/2021)
Info	For hanging applications, please use cables of the series CFLG.LB - see page 228!

Guaranteed service life (details see page 28-29)

Double strokes*	5 million	7.5 million	10 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-40/-30	12.5	13.5	14.5
-30/+70	10	11	12
+70/+80	12.5	13.5	14.5

* Higher number of double strokes? Service life calculation online ▶ www.igus.eu/chainflexlife

Typical application areas

- For heavy-duty applications, Class 7
- Unsupported travels and up to 400m and more for gliding applications (horizontal), Class 6
- Almost unlimited resistance to oil, also with bio-oils, Class 4
- No torsion, Class 1
- Maximum EMC protection, with high transmission qualities
- Indoor and outdoor applications
- Crane applications, conveyor technology, low temperature applications

Guarantee igus chainflex 36 up to 36 months guarantee

igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year

UL-verified chainflex® guarantee ... www.igus.eu/ul-verified

CFLG.G
TPE
10 x d

Fibre Optic Cable | TPE | chainflex® CFLG.G

Class 7.6.4.1

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6		≥ 400m
Oil resistance	none	1	2	3	4				highest
Torsion	none	1	2	3	4				±360°

CFLG.G
TPE
10 x d

Example image

Part No.	Number of fibres/ Fibre diameter	Outer diameter (d) max. [mm]	Weight [kg/km]
CFLG.6G.62.5/125.TC	6x62.5/125	10.0	80
CFLG.12G.62.5/125.TC	12x62.5/125	10.0	80
CFLG.6G.50/125.TC [11)]	6x50/125	10.0	60
CFLG.12G.50/125.TC	12x50/125	10.0	75
CFLG.12E.9/125.TC	12x9/125	10.0	75

[11)] Phase-out model
Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.

Part No.	Bandwidth [MHz x km] @ 850nm	Attenuation [dB/km] @ 850nm	Bandwidth [MHz x km] @ 1,300nm	Attenuation [dB/km] @ 1,300nm
CFLG.6G.62.5/125.TC	≥ 200	≤ 3.5	≥ 500	≤ 1.0
CFLG.12G.62.5/125.TC	≥ 200	≤ 3.5	≥ 500	≤ 1.0
CFLG.6G.50/125.TC	≥ 500	≤ 3.0	≥ 500	≤ 1.0
CFLG.12G.50/125.TC	≥ 500	≤ 3.0	≥ 500	≤ 1.0

Part No.	Attenuation [dB/km] @ 1,310nm	Chromatic dispersion [ps/nm/km] @ 1,310nm	Attenuation [dB/km] @ 1,550nm	Chromatic dispersion [ps/nm/km] @ 1,550nm
CFLG.12E.9/125.TC	≤ 0.35	3.5	≤ 0.25	18

Part No.	Fibre 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, turquoise, 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, turquoise, grey, brown, black, orange, pink	blue
CFLG.12E.9/125.TC	ecru, yellow, green, red, violet, blue, turquoise, grey, brown, black, orange, pink	yellow

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More on this on page 24/25 and online: www.igus.eu/cf-case

EPLAN download, configurators ▶ www.igus.eu/CFLGG

Order example: CFLG.6G.62.5/125.TC - to your desired length (0.5m steps)
CFLG.G chainflex® series.6G Number of fibres.62.5/125Fibre diameter.TC Special marking

Order online ▶ www.igus.eu/CFLGG

Delivery time 24hrs or today.
Delivery time means time until goods are shipped.

cost down...
...life up

Reduce cost, improve technology, now!
Do the chainflex® price check ...
www.igus.eu/cf-price-check

... for example: Reduce bend radius with CFLG.LB ...

chainflex® fibre optic cable in a sea lock

Guarantee igus chainflex 36

igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year