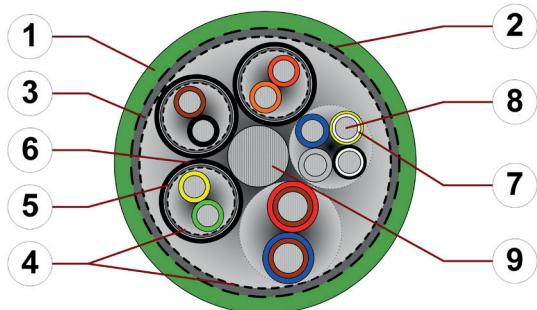


# Data sheet chainflex® CF111.D



Measuring system cable (Class 4.2.3.1) • For medium duty applications • PUR outer jacket  
● Shielded ● Oil resistant and coolant-resistant ● Flame-retardant ● PVC and halogen-free  
● Notch-resistant ● Hydrolysis and microbe-resistant



1. Outer jacket: Pressure extruded PUR mixture
2. Banding: Plastic fleece
3. Overall shield: Extremely bending-stable braid made of tinned copper wires
4. Banding: Plastic foil
5. Element shield: Extremely bending-stable wrapping made of tinned copper wires
6. Element jacket: Mechanically high-quality TPE mixture
7. Core insulation: Mechanically high-quality TPE mixture
8. Conductor: Fine-wire strand in highly bending-stable version consisting of tinned copper wires
9. Strain relief: Tensile stress-resistant centre element

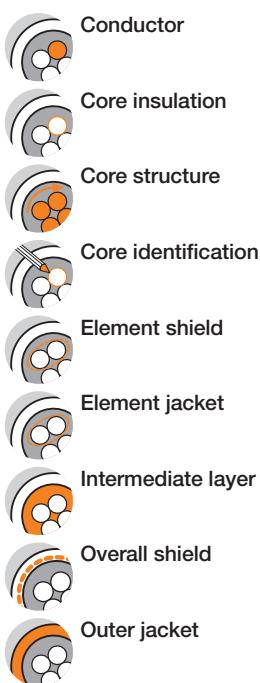


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chainflex cable  
guarantee and  
service life  
calculator based  
on 2 billion test  
cycles per year

## Example image

For detailed overview please see design table

## Cable structure



Conductor  
Very finely stranded special conductors of particularly bending resistant design made of tinned copper wires.

Core insulation  
Mechanically high-quality TPE mixture.

Core structure  
According to measuring system specification.

Core identification  
According to measuring system specification.  
► Design table

Element shield  
Extremely bending-resistant, tinned copper cover.  
Coverage approx. 90% optical

Element jacket  
TPE mixture on pair shielding adapted to suit the requirements in e-chains®.

Intermediate layer  
Foil taping over the outer layer.

Overall shield  
Bending-resistant braiding made of tinned copper wires.  
Coverage linear approx. 55%, optical approx. 80%

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: Yellow-green (similar to RAL 6018)  
Printing: black

„00000 m\*\*\* igus chainflex CF111.---.D① -----② E310776 сЯUus

AWM Style 20233 VW-1 AWM I/II A/B 80°C 300V FT1 DNV TAE00003X4 CE

DESINA RoHS-II conform www.igus.de +++ chainflex cable works +++

\* Length printing: Not calibrated. Only intended as an orientation aid.

① / ② Cable identification according to Part No. (see technical table).

Example: ... chainflex CF111.001.D (3x(2x0.14)C+(4x0.14)+(2x0.5))C E310776 ...

Example image



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### Dynamic information



Bend radius

e-chain® linear  
flexible  
fixed

minimum 10 x d  
minimum 8 x d  
minimum 5 x d



Temperature

e-chain® linear  
flexible  
fixed

-25°C up to +80°C  
-40°C up to +80°C (following DIN EN 60811-504)  
-50°C up to +80°C (following DIN EN 50305)



v max.

unsupported  
gliding

5m/s  
3m/s



a max.

30m/s<sup>2</sup>



Travel distance

Unsupported travels and up to 10m for gliding applications, Class 2



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These values are based on specific applications or tests. They do not represent the limit of what is technically feasible.

### Guaranteed service life according to guarantee conditions

Double strokes	5 million	7.5 million	10 million
Temperature, from/to [°C]	R min. [x d]	R min. [x d]	R min. [x d]
-25/-15	12.5	13.5	14.5
-15/+70	10	11	12
+70/+80	12.5	13.5	14.5

Minimum guaranteed service life of the cable under the specified conditions.

The installation of the cable is recommended within the middle temperature range.

### Electrical information



Nominal voltage

50V  
300V (following UL)



Testing voltage

500V

Example image

igus® chainflex® CF111.D

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## Properties and approvals



	UV resistance	Medium
	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
	PTFE-free	The design of these products does not contain PTFE
	UL-verified	Certificate No. V293650: „igus 4-year chainflex cable guarantee and service life calculator based on 2 billion test cycles per year“
	UL/CSA AWM	See table UL/CSA AWM for details
	NFPA	Following NFPA 79-2018, chapter 12.9
	DNV	Type Approval Certificate TAE00003X4 (Issue 04/2025)
	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
	DESINA	According to VDW, DESINA standardisation
	CE	Following 2014/35/EU



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Example image

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### Properties and approvals

#### UL/CSA AWM Details

Part No.	UL style core insulation	UL style outer jacket	UL Voltage Rating [V]	UL Temperature Rating [°C]
CF111.001.D	10467	20233	300	80
CF111.002.D	10467	20233	300	80
CF111.004.D	10467	20233	300	80
CF111.006.D	10467	20233	300	80
CF111.009.D	10467	20233	300	80
CF111.010.D	10467	20233	300	80
CF111.011.D	10467	20233	300	80
CF111.014.D	10467	20233	300	80
CF111.015.D	10467	20233	300	80
CF111.020.D	10467	20233	300	80
CF111.021.D	10467	20233	300	80
CF111.022.D	10467	20233	300	80
CF111.023.D	10467	20233	300	80
CF111.024.D	10467	20233	300	80
CF111.026.D	10467	20233	300	80
CF111.027.D	10467	20233	300	80
CF111.028.D	11602	20233	300	80
CF111.032.D	10467	20233	300	80
CF111.040.D	10467	20233	300	80
CF111.041.D	10467	20233	300	80
CF111.042.D	10467	20233	300	80



igus 4-year chainflex cable guarantee and service life calculator based on 2 billion test cycles per year



Example image



# Data sheet

## chainflex® CF111.D



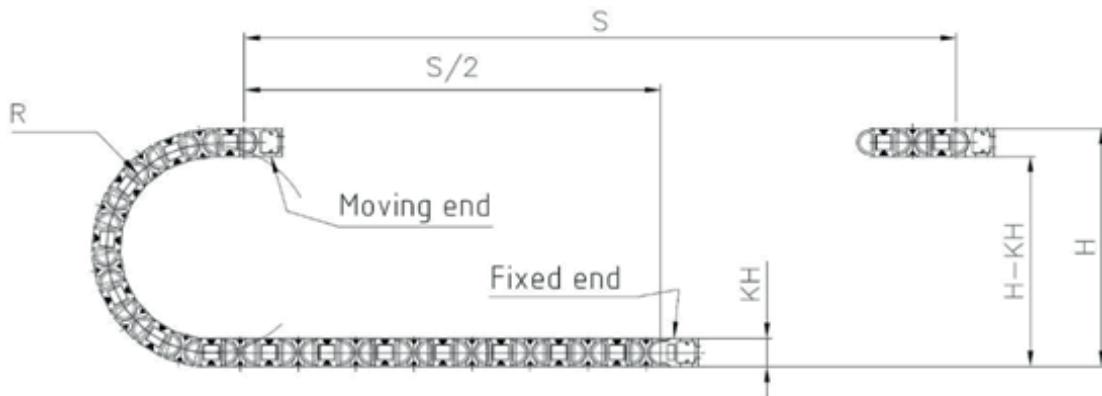
Measuring system cable (Class 4.2.3.1) ● For medium duty applications ● PUR outer jacket  
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### Typical lab test setup for this cable series

Test bend radius R	approx. 75 - 135 mm
Test travel S	approx. 1 - 15 m
Test duration	minimum 2 - 4 million double strokes
Test speed	approx. 0.5 - 2 m / s
Test acceleration	approx. 0.5 - 1.5 m / s <sup>2</sup>



igus 4-year chainflex cable guarantee and service life calculator based on 2 billion test cycles per year



### Typical application areas

- For medium duty applications, Class 4
- Unsupported travels and up to 10m for gliding applications, Class 2
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Indoor and outdoor applications without direct sun radiation
- Machining units/machine tools, low temperature applications

Example image



# Data sheet

## chainflex® CF111.D



Measuring system cable (Class 4.2.3.1) • For medium duty applications • PUR outer jacket  
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### Technical tables:

#### Mechanical information

Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF111.001.D	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	9.5	64	104
CF111.002.D	(3x(2x0.14)C+2x(0.5)C)C	9.5	66	109
CF111.004.D	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5))C	10.5	70	116
CF111.006.D	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.0	76	122
CF111.009.D	(4x(2x0.25)+2x0.5)C	8.0	49	79
CF111.010.D	(4x(2x0.25)+2x1.0)C	8.5	61	94
CF111.011.D	(4x(2x0.34)+4x0.5)C	9.5	72	115
CF111.014.D	(4x(2x0.25)C+(2x0.5))C	10.5	77	124
CF111.015.D	(4x(2x0.14)+4x0.5)C	8.5	54	87
CF111.020.D	(3x(2x0.14)+2x(4x0.14)+(2x0.5))C	8.5	52	87
CF111.021.D	((4x0.25)+3x(2x0.25+2x0.5))C	9.5	80	117
CF111.022.D	((2x0.25)+5x0.5)C	7.0	46	75
CF111.023.D	(2x(2x0.25)+(2x0.34))C	7.0	39	60
CF111.024.D	((4x0.14)+2x(2x0.34))C	7.0	36	61
CF111.026.D	(6x(2x0.25)+(2x0.34)C+(2x0.5))C	10.5	74	119
CF111.027.D	(5x(2x0.14)+2x0.5)C	8.0	45	76
CF111.028.D	(2x(2x0.15)+(2x0.38))C	7.5	40	73
CF111.032.D <sup>5)</sup>	3x(2x0.14)C+(3x0.14)C	8.5	35	82
CF111.040.D	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	9.0	81	118
CF111.041.D	(2x(2x0.18)+5x0.5)C	7.5	49	80
CF111.042.D	(3x(2x0.18)+6x0.5)C	8.5	62	99

<sup>5)</sup> Manufactured without overall shield

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

G = with green-yellow earth core x = without earth core

#### Electrical information

Conductor nominal cross section [mm <sup>2</sup> ]	Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2) [Ω/km]	Maximum current rating at 30 °C [A]
0.14	150.0	2.5
0.15	146.0	2.5
0.18	105.0	3
0.25	90.0	5
0.34	63.0	7
0.38	60.0	7
0.5	42.0	10
1.0	21.0	17
1.5	16.0	21

The final maximum current rating depends among other things on the ambient conditions, the type of the installation and the number of loaded cores.



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### Design table

Part No.	Core group	Colour code	Core design
CF111.001.D	3x(2x0.14)C	green/yellow, black/brown, red/orange	
	(4x0.14)	grey/blue/white-yellow/white-black	
	(2x0.5)	brown-red/brown-blue	
CF111.002.D	3x(2x0.14)C	green/yellow, black/brown, red/orange	
	2x(0.5)C	black, red	
CF111.004.D	2x(2x(2x0.14))	(brown/green)/(yellow/violet), (grey/pink)/(red/black)	
	(4x0.14)C	yellow-black/red-black/green-black/blue-black	
	(4x0.5)	brown-green/white-green/blue/white	
CF111.006.D	3x(2x0.14)C	green/yellow, black/brown, red/orange	
	(4x0.14)	grey/blue/white-yellow/white-black	
	(4x0.25)	brown-yellow/brown-grey/green-black/green-red	
	(2x0.5)	brown-red/brown-blue	
CF111.009.D	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black	
	2x0.5	white, brown	
CF111.010.D	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black	
	2x1.0	white, brown	
CF111.011.D	4x(2x0.34)	black/brown, red/orange, green/yellow, blue/violet	
	4x0.5	black-white, red-white, yellow-white, blue-white	

Example image

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### Design table

Part No.	Core group	Colour code	Core design
CF111.014.D	4x(2x0.25)C	white/brown, green/yellow, grey/pink, blue/red	
	(2x0.5)	black no. 1/black no. 2	
CF111.015.D	4x(2x0.14)	brown/green, yellow/violet, grey/pink, red/black	
	4x0.5	blue, white, brown-green, white-green	
CF111.020.D	3x(2x0.14)	blue/red, black/violet, grey-pink/red-blue	
	2x(4x0.14)	green/grey/yellow/pink, white-green/white-yellow/brown-green/yellow-brown	
	(2x0.5)	white/brown	
CF111.021.D	(4x0.25)	white/brown/grey/black	
	3x2x0.25	white/yellow, white/grey, black/orange	
	3x2x0.5	black no. 1/black no. 2, black no. 3/black no. 4, black no. 5/black no. 6	
CF111.022.D	(2x0.25)	white/brown	
	5x0.5	green, yellow, grey, pink, blue	
CF111.023.D	2x(2x0.25)	white/brown, green/yellow	
	(2x0.34)	blue/red	
CF111.024.D	(4x0.14)	yellow/grey/violet/pink	
	2x(2x0.34)	white-green/white, brown-green/blue	



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### Design table



Part No.	Core group	Colour code	Core design
CF111.026.D	6x(2x0.25)	green/yellow, grey/pink, blue/red, black/violet, grey-pink/red-blue, white-green/brown-green	
	(2x0.34)C	white/brown	
	2x0.5	blue/red	
CF111.027.D	5x(2x0.14)	brown/green, yellow/grey, white/violet, red/black, pink/blue	
	2x0.5	white-green, white-red	
CF111.028.D	2x(2x0.15)	green/yellow, pink/blue	
	(2x0.38)	red/black	
CF111.032.D	3x(2x0.14)C	green/black, yellow/black, red/black	
	(3x0.14)C	grey/pink/black	
CF111.040.D	(3x4x0.14)	black/red/white-black/white-red, green/blue/white-green/white-blue, yellow/brown/white-yellow/white-brown	
	(2x0.14+2x0.34)	violet/orange/white-violet/white-orange	
	2x1.5)C	white-grey, grey	
CF111.041.D	2x(2x0.18)	white/brown, black/violet	
	5x0.5	blue, violet, green, yellow, grey	
CF111.042.D	3x(2x0.18)	white/black, red/white, black/red	
	6x0.5	black no. 1, black no. 2, black no. 3, red no. 4, red no. 5, red no. 6	



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