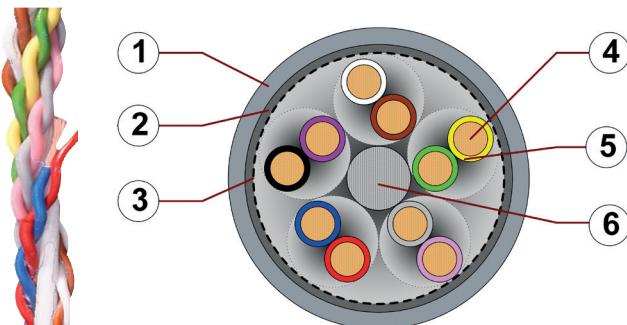


# Data sheet chainflex® CF211.PUR



**Data cable (Class 5.5.3.1)** ● For heavy duty applications ● PUR outer jacket ● Shielded ● twisted pair ● 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. Overall shield: Aluminum/Polyester tape and extremely bending-resistant braiding made of tinned copper wires
3. Banding: Plastic foil
4. Conductor: Very finely stranded special cores of particularly high-flex design made of bare copper wires
5. Core insulation: Mechanically high-quality TPE mixture
6. Strain relief: Tensile stress-resistant centre element



igus 36-month 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 bare copper wires.



Core insulation

Mechanically high-quality TPE mixture.



Core structure

Cores twisted in pairs with a short pitch length, core pairs then wound with short pitch lengths.



Core identification

Colour code in accordance with DIN 47100



Intermediate layer

Foil taping over the outer layer.



Overall shield

Aluminum/Polyester tape and extremely bending-resistant braiding made of tinned copper wires.

Coverage approx. 70 % linear, approx. 90 % optical



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: Window-grey (similar to RAL 7040)

Printing: black



„00000 m\*\* igus chainflex CF211.PUR.---.02① -----② E310776 cЯus

AWM Style 20233 VW-1 AWM I/II A/B 80°C 300V FT1 DNV-GL 13 656-14 HH

EAC/CTP CE RoHS-II conform [www.igus.de](http://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 CF211.PUR.02.04.02 (4x(2x0.25))C E310776 ...



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## Dynamic information



Bend radius

e-chain® linear  
flexible  
fixed

minimum 7.5 x d  
minimum 6 x d  
minimum 4 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

5 m/s  
3 m/s



a max.

50 m/s<sup>2</sup>



Travel distance

Unsupported travels and up to 100 m for gliding applications, Class 5



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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. [factor x d]	R min. [factor x d]	R min. [factor x d]
-25/-15	10	11	12
-15/+70	7.5	8.5	9.5
+70/+80	10	11	12

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

300/300 V (following DIN VDE 0298-3)  
300 V (following UL)



Testing voltage

1500 V (following DIN EN 50395)

Example image

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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 2009
	Flame retardant	According to IEC 60332-1-2, FT1, VW-1
	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“
	UL/CSA AWM	See table UL/CSA AWM for details
	NFPA	Following NFPA 79-2018, chapter 12.9
	DNV-GL	Type approval certificate No. 13 656-14 HH
	EAC	Certificate No. RU C-DE.ME77.B.00295/19 (TR ZU)
	REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
	RoHS	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



## Properties and approvals

### UL/CSA AWM Details

Conductor nominal cross section [mm <sup>2</sup> ]	Number of cores	UL style core insulation	UL style outer jacket	UL Voltage Rating [V]	UL Temperature Rating [°C]
0.25	2-28	10493	20233	300	80
0.34	6-16	10493	20233	300	80
0.5	2-28	10493	20233	300	80

# Data sheet chainflex® CF211.PUR



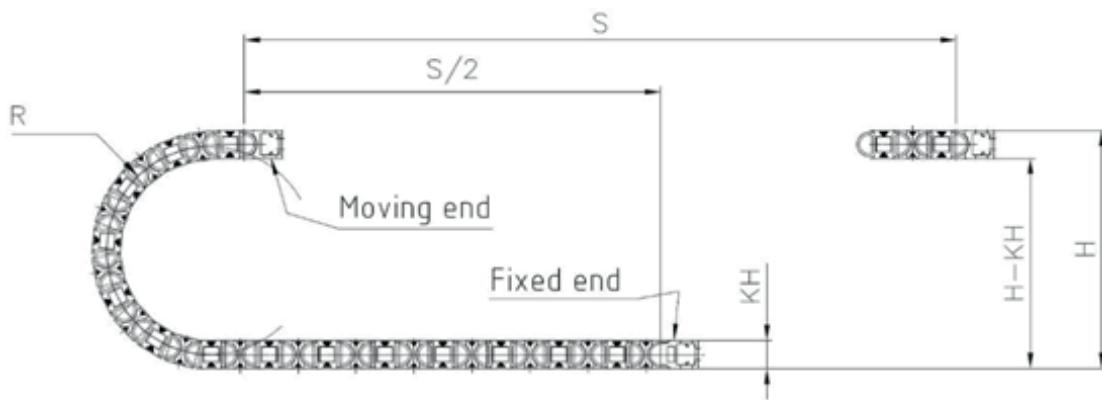
- Data cable (Class 5.5.3.1)
- For heavy duty applications
- PUR outer jacket
- Shielded
- Twisted pair
- Oil resistant and coolant-resistant
- Flame retardant
- PVC and halogen-free
- Notch-resistant
- Hydrolysis and microbe-resistant

## Typical lab test setup for this cable series

Test bend radius R	approx. 35 - 75 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 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year



## Typical application areas

- For heavy duty applications, Class 5
- Unsupported travel distances and up to 100 m for gliding applications, Class 5
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Indoor and outdoor applications with average sun radiation
- Machining units/machine tools, Storage and retrieval units for high-bay warehouses, Packaging industry, quick handling, refrigerating sector



Example image



# Data sheet

## chainflex® CF211.PUR



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### Technical tables:

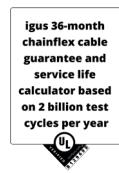
#### Mechanical information

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]
CF211.PUR.02.01.02	(2x0.25)C	5.0	18	32
CF211.PUR.02.02.02 <sup>2)</sup>	(2x(2x0.25))C	6.5	25	49
CF211.PUR.02.03.02	(3x(2x0.25))C	7.0	36	65
CF211.PUR.02.04.02	(4x(2x0.25))C	7.5	44	76
CF211.PUR.02.05.02	(5x(2x0.25))C	8.5	52	89
CF211.PUR.02.06.02	(6x(2x0.25))C	9.0	62	102
CF211.PUR.02.08.02	(8x(2x0.25))C	10.5	78	130
CF211.PUR.02.10.02	(10x(2x0.25))C	12.0	90	168
CF211.PUR.02.14.02	(14x(2x0.25))C	12.0	119	204
CF211.PUR.03.03.02	(3x(2x0.34))C	8.0	44	83
CF211.PUR.03.08.02	(8x(2x0.34))C	12.0	95	163
CF211.PUR.05.01.02	(2x0.5)C	6.0	26	51
CF211.PUR.05.02.02 <sup>2)</sup>	(2x(2x0.5))C	8.5	41	86
CF211.PUR.05.03.02	(3x(2x0.5))C	9.0	61	105
CF211.PUR.05.04.02	(4x(2x0.5))C	9.5	74	123
CF211.PUR.05.05.02	(5x(2x0.5))C	11.0	91	152
CF211.PUR.05.06.02	(6x(2x0.5))C	11.5	103	189
CF211.PUR.05.08.02	(8x(2x0.5))C	13.0	137	221
CF211.PUR.05.10.02	(10x(2x0.5))C	15.5	170	297
CF211.PUR.05.14.02	(14x(2x0.5))C	15.5	185	311

<sup>2)</sup> The chainflex® types marked with 2) are cables designed as a star-quad.

**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]	Max. current rating at 30 °C [A]
0.25	79	
0.34	57	
0.5	39	

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

Example image



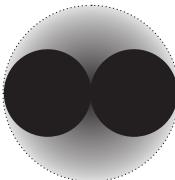
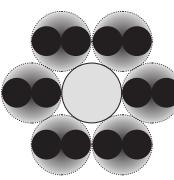
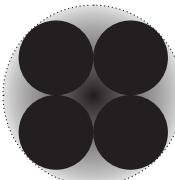
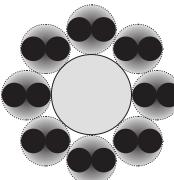
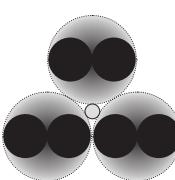
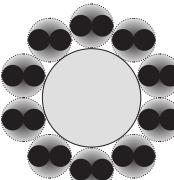
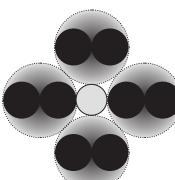
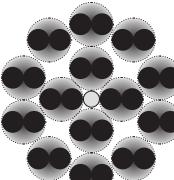
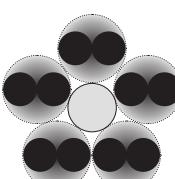
igus® chainflex® CF211.PUR

# Data sheet chainflex® CF211.PUR

igus®

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## Design table

Part No.	Number of cores	Core design	Part No.	Number of cores	Core design
CF211.PUR.XX.01.02	2		CF211.PUR.XX.06.02	6x2	
CF211.PUR.XX.02.02	4		CF211.PUR.XX.08.02	8x2	
CF211.PUR.XX.03.02	3x2		CF211.PUR.XX.10.02	10x2	
CF211.PUR.XX.04.02	4x2		CF211.PUR.XX.14.02	14x2	
CF211.PUR.XX.05.02	5x2				



igus® chainflex® CF211.PUR

Example image



igus 36-month  
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## Colour code in accordance with DIN 47100

Conductor no.	Colours according to DIN ISO 47100	Conductor no.	Colours according to DIN ISO 47100	Conductor no.	Colours according to DIN ISO 47100
1	white	22	brown-blue	43	blue-black
2	brown	23	white-red	44	red-black
3	green	24	brown-red	45	white-brown-black
4	yellow	25	white-black	46	yellow-green-black
5	grey	26	brown-black	47	grey-pink-black
6	pink	27	grey-green	48	red-blue-black
7	blue	28	yellow-grey	49	white-green-black
8	red	29	pink-green	50	brown-green-black
9	black	30	yellow-pink	51	white-yellow-black
10	violet	31	green-blue	52	yellow-brown-black
11	grey-pink	32	yellow-blue	53	white-grey-black
12	red-blue	33	green-red	54	grey-brown-black
13	white-green	34	yellow-red	55	white-pink-black
14	brown-green	35	green-black	56	pink-brown-black
15	white-yellow	36	yellow-black	57	white-blue-black
16	brown-yellow	37	grey-blue	58	brown-blue-black
17	white-grey	38	pink-blue	59	white-red-black
18	brown-grey	39	grey-red	60	brown-red-black
19	white-pink	40	pink-red	61	black-white
20	white-brown	41	grey-black		
21	white-blue	42	pink-black		



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



**EAC**



**CE**

Example image

