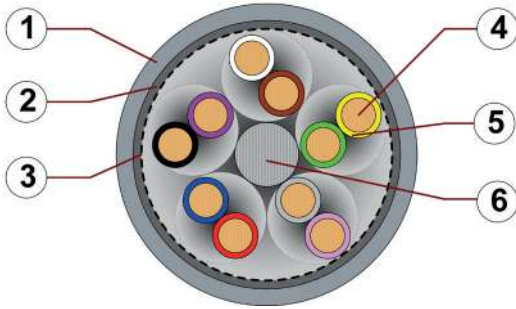


Data sheet

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: 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

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	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 cRUUs

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

EAC/CTP CE UKCA 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 **CF211.PUR.02.04.02 (4x(2x0.25))C E310776** ...



Example image

Data sheet

chainflex® CF211.PUR








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Example image

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 ²
	Travel distance		Unsupported travels and up to 100 m for gliding applications, Class 5



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)



Data sheet

chainflex® CF211.PUR



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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, 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“
-  **UL/CSA AWM** See table UL/CSA AWM 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
-  **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)

Properties and approvals

UL/CSA AWM Details

Conductor nominal cross section [mm ²]	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



Example image

Data sheet

chainflex® CF211.PUR



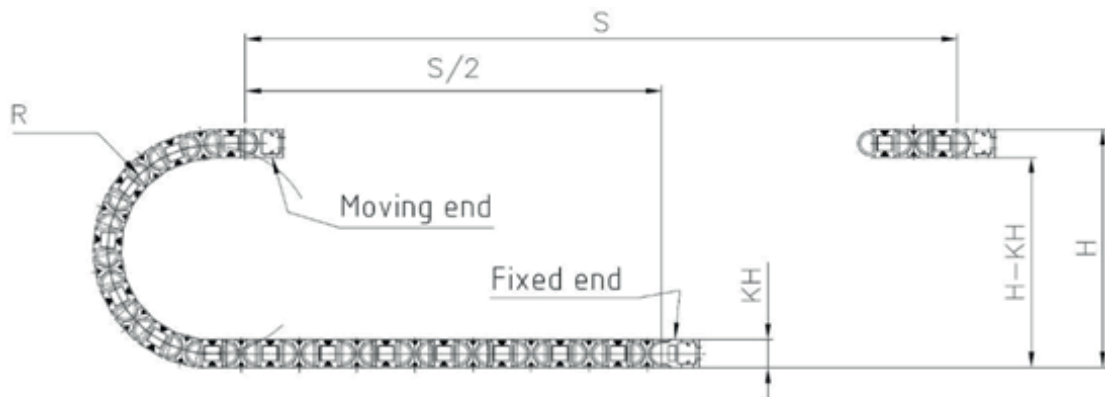
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Example image

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 ²



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



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Technical tables:

Mechanical information

Part No.	Number of cores and conductor nominal cross section [mm ²]	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 ²⁾	(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 ²⁾	(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

²⁾ 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 ²]	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



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



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Design table

Part No.	Number of Core design cores	Part No.	Number of Core design cores
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		



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Example image

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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
1	white	19	white-pink
2	brown	20	pink-brown
3	green	21	white-blue
4	yellow	22	brown-blue
5	grey	23	white-red
6	pink	24	brown-red
7	blue	25	white-black
8	red	26	brown-black
9	black	27	grey-green
10	violet	28	yellow-grey
11	grey-pink	29	pink-green
12	red-blue	30	yellow-pink
13	white-green	31	green-blue
14	brown-green	32	yellow-blue
15	white-yellow	33	green-red
16	yellow-brown	34	yellow-red
17	white-grey	35	green-black
18	grey-brown	36	yellow-black



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



Example image