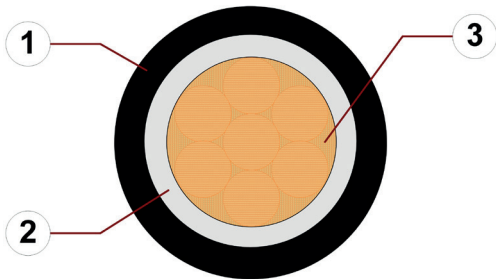


# Data sheet

## chainflex® CF330.D



Spindle cable/Single core (Class 7.6.4.2) ● For heaviest duty applications ● TPE outer jacket  
 ● Oil and bio-oil resistant ● PVC and halogen-free ● UV-resistant ● Hydrolysis and microbe-resistant



1. Outer jacket: Pressure extruded, halogen-free TPE mixture
2. Core insulation: Mechanically high-quality TPE mixture
3. Conductor: Conductor rope in especially bending-stable version consisting of bare copper wires

**Example image**  
 For detailed overview please see design table

### Cable structure

	<b>Conductor</b>	Conductor cable consisting of pre-leads (following DIN EN 60228).
	<b>Core insulation</b>	Mechanically high-quality TPE mixture.
	<b>Outer jacket</b>	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) Printing: white

„00000 m\*\* igus chainflex CF330.--.--.D① ----② 600/1000V EAC 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 ... CF330.60.01.D ... 1x6.0 ... 600/1000V ...



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



Example image







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### Dynamic information

	<b>Bend radius</b>	<b>e-chain® linear</b> <b>flexible</b> <b>fixed</b>	minimum 7.5 x d minimum 6 x d minimum 4 x d
	<b>Temperature</b>	<b>e-chain® linear</b> <b>flexible</b> <b>fixed</b>	-35 °C up to +90 °C -50 °C up to +90 °C (following DIN EN 60811-504) -55 °C up to +90 °C (following DIN EN 50305)
	<b>v max.</b>	<b>unsupported</b> <b>gliding</b>	10 m/s 6 m/s
	<b>a max.</b>		100 m/s <sup>2</sup>
	<b>Travel distance</b>		Unsupported travel distances and up to 400 m for gliding applications, Class 6
	<b>Torsion</b>		Torsion ± 90°, with 1 m cable length



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]
-35/-25	10	11	12
-25/+80	7.5	8.5	9.5
+80/+90	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

	<b>Nominal voltage</b>	600/1000 V (following DIN VDE 0298-3)
	<b>Testing voltage</b>	4000 V (following DIN EN 50395)



Example image

igus® chainflex® CF330.D












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### Properties and approvals

	<b>UV resistance</b>	High
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following DIN EN 60754
	<b>UL verified</b>	Certificate No. B129699: „igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year“
	<b>EAC</b>	Certificate No. RU C-DE.ME77.B.02324 (TR ZU)
	<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
	<b>Cleanroom</b>	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
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EU

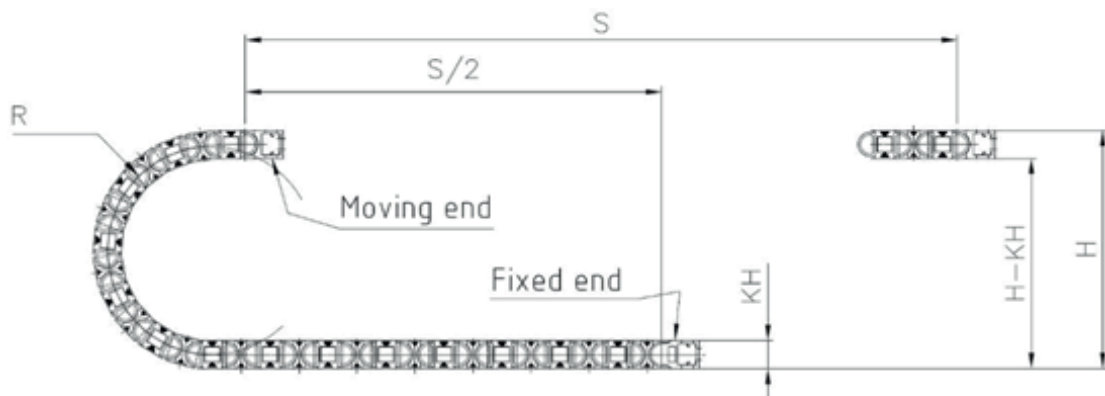


igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year



### Typical lab test setup for this cable series

<b>Test bend radius R</b>	approx. 44 - 175 mm
<b>Test travel S</b>	approx. 1 - 15 m
<b>Test duration</b>	minimum 2 - 4 million double strokes
<b>Test speed</b>	approx. 0.5 - 2 m / s
<b>Test acceleration</b>	approx. 0.5 - 1.5 m / s <sup>2</sup>



Example image  
igus chainflex® CF330.D

# Data sheet

## chainflex® CF330.D



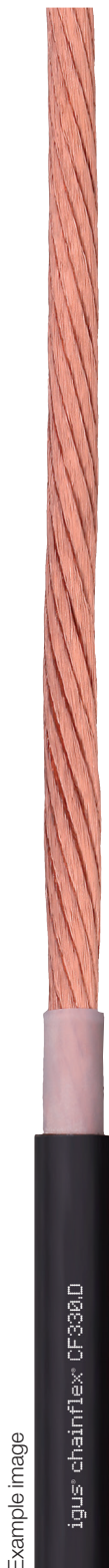
Spindle cable/Single core (Class 7.6.4.2) ● For heaviest duty applications ● TPE outer jacket  
● Oil and bio-oil resistant ● PVC and halogen-free ● UV-resistant ● Hydrolysis and microbe-resistant

### Typical application areas

- For extremely heavy duty applications, Class 7
- Unsupported travel distances and up to 400 m and more for gliding applications, Class 6
- Almost unlimited resistance to oil, also with bio-oils, Class 4
- Torsion  $\pm 90^\circ$ , with 1 m cable length, Class 2
- Indoor and outdoor applications, UV-resistant
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, outdoor cranes, low temperature applications



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



Example image

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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]
CF330.60.01.D	1x6.0	7.0	61	77
CF330.100.01.D	1x10	7.5	100	119
CF330.160.01.D	1x16	9.5	159	181
CF330.250.01.D	1x25	11.5	248	284
CF330.350.01.D	1x35	12.5	347	385
CF330.500.01.D	1x50	14.5	495	534
CF330.700.01.D	1x70	16.5	710	754
CF330.950.01.D	1x95	20.0	936	1015
CF330.1200.01.D	1x120	21.5	1184	1265
CF330.1500.01.D	1x150	23.5	1469	1548
CF330.1850.01.D	1x185	26.5	1928	2016

**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]
6	3.3	58
10	1.91	81
16	1.21	110
25	0.78	144
35	0.56	179
50	0.39	228
70	0.28	285
95	0.21	348
120	0.16	394
150	0.13	466
185	0.11	532

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



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



Example image

igus® chainflex® CF330.D

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### Technical tables:

Short circuit capacity ( $I_{thz}$ ) according to DIN VDE 0298-4 (at  $T_{Leiter} = 80\text{ °C}$  and  $T_{Kurzschluss} = 250\text{ °C}$ )

Leiternennquerschnitt ( $S_n$ ) mm <sup>2</sup>	Short circuit capacity ( $I_{thz}$ ) [kA]	
	$t_k = 1\text{ s}$	$t_k = 0,5\text{ s}$
6	0.89	1.26
10	1.49	2.10
16	2.38	3.37
25	3.72	5.26
35	5.21	7.37
50	7.45	10.53
70	10.43	14.75
95	14.15	20.01
120	17.88	25.28
150	22.35	31.60
185	27.56	38.98

$J_{thr}$ : Short-time current density = 149 A/mm<sup>2</sup>  
 $S_n$ : Nominal cross section  
 $t_{kr}$ : Rated short-circuit duration = 1 s  
 $t_k$ : Short-circuit duration  
 $T_{Leiter}$ : Conductor temperature  
 $T_{Kurzschluss}$ : Short-circuit temperature

$$I_{thz} = J_{thr} \cdot S_n \cdot \sqrt{\frac{t_{kr}}{t_k}}$$



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



Example image

igus® chainflex® CF330.D