

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	≥ 400 m
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Hybrid servo cable | PVC | chainflex® CF220.UL.H

- For medium duty applications
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame retardant

### Dynamic information

	<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 10 x d
		<b>flexible</b>	minimum 8 x d
		<b>fixed</b>	minimum 5 x d
	<b>Temperature</b>	<b>e-chain® linear</b>	+5 °C to +70 °C
		<b>flexible</b>	-5 °C to +70 °C (following DIN EN 60811-504)
		<b>fixed</b>	-15 °C to +70 °C (following DIN EN 50305)
	<b>v max.</b>	<b>unsupported</b>	10 m/s
		<b>gliding</b>	2 m/s
	<b>a max.</b>		50 m/s <sup>2</sup>
	<b>Travel distance</b>	Unsupported travel distances and up to 10 m for gliding applications, Class 2	

### Cable structure

	<b>Conductor</b>	Stranded conductor in bending-resistant design consisting of bare copper wires (following DIN EN 60228).
	<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Core structure</b>	Power cores and control pair elements wound with a short pitch length around a high tensile strength centre element.
	<b>Core identification</b>	According to Servo Hybrid specifications. Latest datasheet: <a href="http://www.igus.eu/CF220ULH">www.igus.eu/CF220ULH</a>
	<b>Element shield</b>	Bending-resistant braiding made of tinned copper wires.
	<b>Intermediate layer</b>	Foil taping over the outer layer.
	<b>Overall shield</b>	Bending-resistant braiding made of tinned copper wires. Coverage approx. 55 % linear, approx. 80 % optical
	<b>Outer jacket</b>	Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: Pastel orange (similar to RAL 2003)

### Electrical information

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

## Class 4.2.2.1

### Properties and approvals

	<b>UV resistance</b>	Medium.
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2.
	<b>Flame retardant</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	<b>UL/CSA</b>	Style 10989 and 2570, 1000 V, 80 °C
	<b>NFFPA</b>	Following NFFPA 79-2012 chapter 12.9.
	<b>EAC</b>	Certificate no. RU C-DE.ME77.B.02324 (TR ZU)
	<b>CTP</b>	Certificate no. C-DE.PB49.B.00420 (Fire safety)
	<b>CEI</b>	Following CEI 20-35.
	<b>Lead-free</b>	Following 2011/65/EU (RoHS-II).
	<b>Cleanroom</b>	According to ISO Class 2. Outer jacket material complies with CF5.10.07, tested by IPA according to standard 14644-1.
	<b>CE</b>	Following 2014/35/EU.

### Guaranteed lifetime according to guarantee conditions (Page 22-23)

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]
+5/+15	12.5	13.5	14.5
+15/+60	10	11	12
+60/+70	12.5	13.5	14.5

\* Higher number of double strokes? Online lifetime calculation: [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical mechanical application areas

- For medium duty applications
- Light oil influence
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Unsupported travel distances and up to 10 m for gliding applications
- Wood/stone processing, Packaging industry, supply systems, Handling, adjusting equipment



igus® chainflex® CF220.UL.H

Example image



igus® chainflex® CF220.UL.H


Example image

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	Part No.	Hybrid technology	Manufacturer
CF220.UL.H100.07.04	(4G0.75+(2x0.34)C +(2xAWG22)C)C	12.0	117	221	CF220.UL.H100.07.04	Sick (Hiperface DSL)	please see selection table on page 249
CF220.UL.H101.10.04	(4G1.0+(2x0.75)C +(2xAWG22)C)C	12.5	139	257	CF220.UL.H101.10.04	Sick (Hiperface DSL)	please see selection table on page 249
CF220.UL.H101.15.04	(4G1.5+(2x0.75)C +(2xAWG22)C)C	13.5	159	294	CF220.UL.H101.15.04	Sick (Hiperface DSL)	please see selection table on page 249
CF220.UL.H102.25.04	(4G2.5+(2x1.0)C +(2xAWG22)C)C	15.0	217	362	CF220.UL.H102.25.04	Sick (Hiperface DSL)	please see selection table on page 249

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

 Order example: **CF220.UL.H101.10.04** – to your desired length (0.5 m steps)  
**CF220.UL.H** chainflex® series **.101.10.04** Code Hybrid system type

 Online order ► [www.chainflex.eu/CF220.UL.H](http://www.chainflex.eu/CF220.UL.H)

 Delivery time 24h or today.  
Delivery time means time until shipping of goods.



Drilling machine for wooden plates equipped with latest Hybrid Cable Technology with Hiperface DSL

Guarantee  
igus chainflex  
**36**  
month guarantee

UL US

NFPA

EAC

TP

RoHS-II

Clean-Room

CE