

# TPE Fiber optic cable, torsional | CFROBOT5

- For torsion applications
- TPE outer jacket
- Oil-resistant
- Bio-oil-resistant
- UV-resistant
- Low-temperature-flexible
- Hydrolysis/microbe-resistant
- PVC-free/halogen-free

### Dynamic Information

	<b>Bend radius</b>	<b>twisted</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>twisted</b>	-31 °F to +176 °F (-35 °C to +80 °C)
		<b>flexible</b>	-58 °F to +176 °F (-50 °C to +80 °C)
		<b>fixed</b>	-67 °F to +176 °F (-55 °C to +80 °C)
	<b>v max. twisted</b>		180 %/s
	<b>a max. twisted</b>		60 °/s <sup>2</sup>
	<b>Travel distance</b>		Especially for robots and movements in the 3D range, Class 7
	<b>Torsion</b>		± 180°, with 3.28 ft (1 m) cable length

### Cable structure

	<b>Conductors</b>	50/125 µm, 62.5/125 µm special fixed wire elements with aramide strain relief.
	<b>Core construction</b>	Optical Fibers cabled with high-tensile aramid dampers around a central reinforced filler element.
	<b>Color code</b>	See Table
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to to RAL 9005)

### 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)

**Configurators** ▶ [www.igus.com/CFROBOT](http://www.igus.com/CFROBOT)

## Class 6.1.4.3

	<b>Halogen-free</b>	Following EN 50267-2-1
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

### Guaranteed lifetime according to guarantee conditions (Page 22-25)

Cycles*	5 million		7,5 million		10 million	
Temperature, from/to [°F]	v max. [°/s] twisted	a max. [°/s] twisted	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]	
-31 / -13			±150	±90	±30	
-13 / +158	180	60	±180	±120	±60	
+158 / +176			±150	±90	±30	

\* Higher number of cycles possible - please ask for your individual calculation.

### Typical application areas

- For heaviest duty applications with torsion movements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Especially for robots and movements in the 3D area
- Robots, Handling

Part No.	Fiber Count	Fiber Diameter approx. [µm]	Outer diameter max.		Weight	
			in.	mm	lbs/mft	kg/km
<b>CFROBOT5-500</b>	2	62,5/125	0.33	8.5	58.5	87
<b>CFROBOT5-501</b>	2	50/125	0.33	8.5	58.5	87

Note: The mentioned outer diameters are maximum values.

Part No.	Bandwidth [MHz x km] @ 850 nm	Bandwidth [MHz x km] @ 1300 nm	Attenuation [dB/km] @ 850 nm	Attenuation [dB/km] @ 1300 nm	Fiber identification
	<b>CFROBOT5-500</b>	≥ 200	≥ 500	≤ 3.0	≤ 0.7
<b>CFROBOT5-501</b>	≥ 500	≥ 500	≤ 2.5	≤ 0.7	blue with white numbers

**Order example: CFROBOT5-501 – In your desired length**  
CFROBOT5 Chainflex® series -501 Code Fiber type

Online order ▶ [www.chainflex.com/CFROBOT](http://www.chainflex.com/CFROBOT)

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