

# / FIBER OPTIC SENSORS

## HOW TO BEND LIGHT AROUND A CORNER

With the use of fiber optics and appropriate amplifiers, the area of application of optoelectronic sensors is considerably expanded. The flexible fiber optics with various head shapes can be integrated in nearly any system design. The detection range is dependent on the fiber optics and amplifiers used.

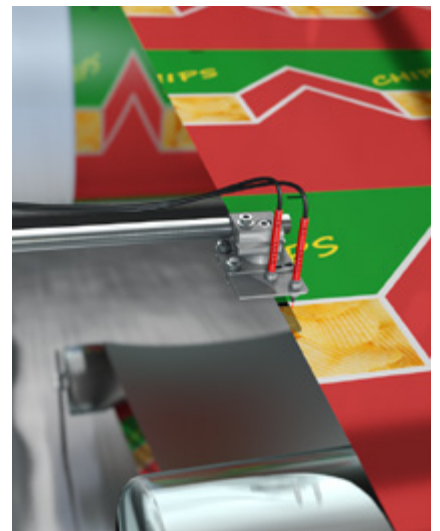


**Amplifiers**

**Page 163**

**Fiber optics**

**Page 168**



# //AMPLIFIERS

## SIMPLE SETUP AND CONTROL

The optical fibers are plugged into the amplifier. Depending on the model, the ranges of the fibers and the available functions vary.

### /// LV461



The series satisfies all basic requirements: 20-turn potentiometer for high-resolution sensitivity adjustments, 2 switches for light/dark switching and for selecting between larger range or higher switching frequency.



**Benefits:**

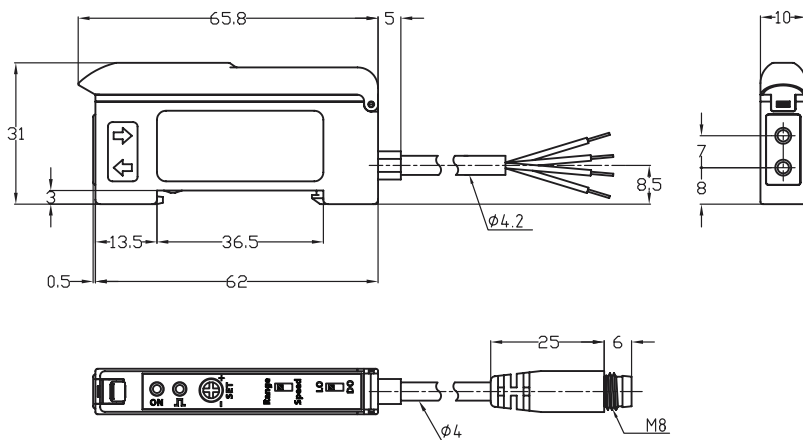
- Mode changeover: range / response time
- Light/dark switching
- 20-turn potentiometer for sensitivity adjustment



Direct access to the online product selector at [www.leuze.com/en/lv461](http://www.leuze.com/en/lv461)

Part no.	Part description	Light source	Switching output	Input/output	Switching frequency	Connection	Operational controls
50118399	LV461.1/P2-150-M8	LED, red	Transistor, PNP	Transistor, NPN	500 Hz	Connector, 150 mm, M8, 4-pin	Multiturn potentiometer, control buttons
50118398	LV461.1/P2	LED, red	Transistor, PNP	Transistor, NPN	500 Hz	Cable, 2,000 mm, 4-wire	Multiturn potentiometer, control buttons

### Dimensioned drawings: LV461



LV 461 fiber optic amplifier

Switching sensors

Measuring sensors

Products for safety at work

Identification

Data transmission / Control components

Industrial image processing

Accessories



## /// LV462



The series has a 4-digit display for displaying the switching threshold. The setting is made with the AutoSet function or manually with the  $\pm$  button. A switch for light/dark switching and simple menu functions for setting the range and various timing functions complement the device features.

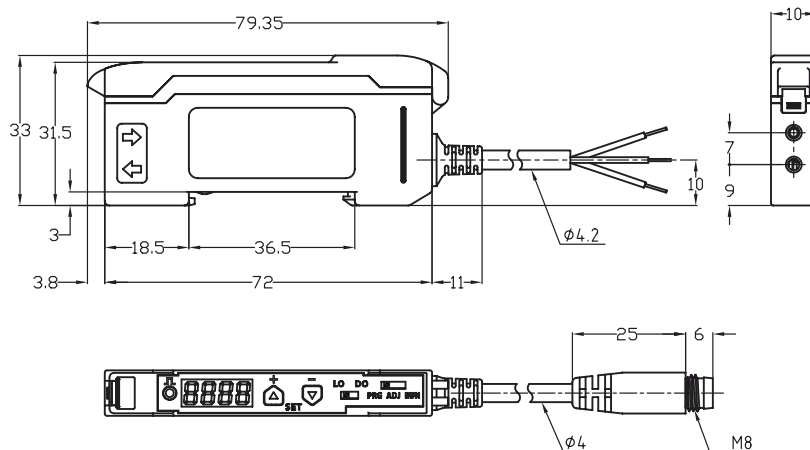
**Benefits:**

- 4-digit display
- High dynamics
- Time functions configurable on the device
- Sensitivity levels configurable on the device
- Light/dark switching
- Easy sensitivity adjustment via AutoSet function



Direct access to the online product selector at [www.leuze.com/en/lv462](http://www.leuze.com/en/lv462)

Part no.	Part description	Light source	Switching output	Switching frequency	Connection	Operational controls
50118401	LV462.4/4X-150-M8	LED, red	Transistor, PNP	500 Hz	Cable with connector, 150 mm, M8, 4-pin	Control buttons, slide switch
50118400	LV462.4/4	LED, red	Transistor, PNP	500 Hz	Cable, 2,000 mm, 4-wire	Control buttons, slide switch
50118403	LV462.4/2X-150-M8	LED, red	Transistor, NPN	500 Hz	Cable with connector, 1,500 mm, M8, 4-pin	Control buttons, slide switch
50118402	LV462.4/2	LED, red	Transistor, NPN	500 Hz	Cable, 2,000 mm, 4-wire	Control buttons, slide switch

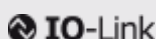
**Dimensioned drawings: LV462**

LV 462 fiber optic amplifier

## /// LV463



The high-performance LV463 fiber optic amplifier convinces with its extensive setting options for operating ranges, sensitivities and time functions. The signal value, and at the same time the switching threshold, are shown on 2 easy-to-read displays. 3 different teach modes considerably simplify configuration. Also available as IO-Link variant.

**Benefits:**

- Double display to show signals and switching thresholds in parallel
- 3 different teach modes for fast sensor setting
- Extensive configuration options, e. g. for operating range, sensitivity or time functions
- Internal multiplex operation of up to 6 units for preventing mutual interference
- Also available as IO-Link variant



Direct access to the online product selector at [www.leuze.com/en/lv463](http://www.leuze.com/en/lv463)

Part no.	Part description	Light source	Switching output	Analog outputs	Input/output	Switching frequency	Connection	Operational controls
50118405	LV463.7/4T-M8	LED, red	Transistor, PNP		Teach input, activation input, multiplex operation	2,500 Hz	Connector, M8, 4-pin	Slide switch, rocker pressure switch
50133974	LV463.XR7/4T-M8	LED, red	Transistor, PNP		Activation input, teach input, multiplex operation	21 Hz	Connector, M8, 4-pin	Rocker pressure switch, slide switch
50133962	LV463.XV7/4T-M8	LED, red	Transistor, PNP		Multiplex operation, activation input, teach input	50,000 Hz	Connector, M8, 4-pin	Rocker pressure switch, slide switch
50133981	LV463.XR7/4T4-150-M12	LED, red	Transistor, PNP		Transistor, PNP, multiplex operation, activation input, teach input	21 Hz	Cable with connector, 150 mm, M12, 5-pin	Slide switch, rocker pressure switch
50133991	LV463.XR7/4TC-150-M12	LED, red	Transistor, PNP	Current	Teach input, activation input, multiplex operation	21 Hz	Cable with connector, 150 mm, M12, 5-pin	Rocker pressure switch, slide switch
50133986	LV463.XR7/4TV-150-M12	LED, red	Transistor, PNP	Voltage	Teach input, multiplex operation, activation input	21 Hz	Cable with connector, 150 mm, M12, 5-pin	Slide switch, rocker pressure switch
50133999	LV463I.XR7/4T4-150-M12	LED, infrared	Transistor, PNP		Transistor, PNP, multiplex operation, activation input, teach input	21 Hz	Cable with connector, 150 mm, M12, 5-pin	Slide switch, rocker pressure switch
50134005	LV463I.XR7/4TC-150-M12	LED, infrared	Transistor, PNP	Current	Multiplex operation, activation input, teach input	21 Hz	Cable with connector, 150 mm, M12, 5-pin	Rocker pressure switch, slide switch
50134002	LV463I.XR7/4TV-150-M12	LED, infrared	Transistor, PNP	Voltage	Teach input, activation input, multiplex operation	21 Hz	Cable with connector, 150 mm, M12, 5-pin	Slide switch, rocker pressure switch
50118407	LV463.7/4T-150-M12	LED, red	Transistor, PNP		Teach input, activation input, multiplex operation	2,500 Hz	Cable with connector, 150 mm, M12, 4-pin	Slide switch, rocker pressure switch
50133975	LV463.XR7/4T-150-M12	LED, red	Transistor, PNP		Activation input, teach input, multiplex operation	21 Hz	Cable with connector, 150 mm, M12, 4-pin	Rocker pressure switch, slide switch
50133964	LV463.XV7/4T-150-M12	LED, red	Transistor, PNP		Activation input, teach input, multiplex operation	50,000 Hz	Cable with connector, 150 mm, M12, 4-pin	Slide switch, rocker pressure switch
50133996	LV463I.XR7/4T-150-M12	LED, infrared	Transistor, PNP		Activation input, teach input, multiplex operation	21 Hz	Cable with connector, 150 mm, M12, 4-pin	Slide switch, rocker pressure switch
50118406	LV463.7/4T-150-M8	LED, red	Transistor, PNP		Teach input, activation input, multiplex operation	2,500 Hz	Cable with connector, 150 mm, M8, 4-pin	Slide switch, rocker pressure switch
50119070	LV463.7/4-150-M8.3	LED, red	Transistor, PNP			2,500 Hz	Cable with connector, 150 mm, M8, 3-pin	Slide switch, rocker pressure switch
50133980	LV463.XR7/4T4	LED, red	Transistor, PNP		Transistor, PNP, multiplex operation, activation input, teach input	21 Hz	Cable, 2,000 mm, 5-wire	Slide switch, rocker pressure switch
50133990	LV463.XR7/4TC	LED, red	Transistor, PNP	Current	Teach input, multiplex operation, activation input	21 Hz	Cable, 2,000 mm, 5-wire	Slide switch, rocker pressure switch
50133985	LV463.XR7/4TV	LED, red	Transistor, PNP	Voltage	Teach input, activation input, multiplex operation	21 Hz	Cable, 2,000 mm, 5-wire	Rocker pressure switch, slide switch
50133998	LV463I.XR7/4T4	LED, infrared	Transistor, PNP		Transistor, PNP, multiplex operation, activation input, teach input	21 Hz	Cable, 2,000 mm, 5-wire	Slide switch, rocker pressure switch
50134004	LV463I.XR7/4TC	LED, infrared	Transistor, PNP	Current	Activation input, teach input, multiplex operation	21 Hz	Cable, 2,000 mm, 5-wire	Rocker pressure switch, slide switch
50134001	LV463I.XR7/4TV	LED, infrared	Transistor, PNP	Voltage	Teach input, activation input, multiplex operation	21 Hz	Cable, 2,000 mm, 5-wire	Rocker pressure switch, slide switch
50118404	LV463.7/4T	LED, red	Transistor, PNP		Teach input, activation input, multiplex operation	2,500 Hz	Cable, 2,000 mm, 4-wire	Slide switch, rocker pressure switch
50133973	LV463.XR7/4T	LED, red	Transistor, PNP		Teach input, activation input, multiplex operation	21 Hz	Cable, 2,000 mm, 4-wire	Slide switch, rocker pressure switch
50133963	LV463.XV7/4T	LED, red	Transistor, PNP		Activation input, multiplex operation, teach input	50,000 Hz	Cable, 2,000 mm, 4-wire	Rocker pressure switch, slide switch
50133995	LV463I.XR7/4T	LED, infrared	Transistor, PNP		Multiplex operation, activation input, teach input	21 Hz	Cable, 2,000 mm, 4-wire	Slide switch, rocker pressure switch
50118409	LV463.7/2T-M8	LED, red	Transistor, NPN		Teach input, activation input, multiplex operation	2,500 Hz	Connector, M8, 4-pin	Slide switch, rocker pressure switch
50133976	LV463.XR7/2T-M8	LED, red	Transistor, NPN		Activation input, teach input, multiplex operation	21 Hz	Connector, M8, 4-pin	Slide switch, rocker pressure switch
50133965	LV463.XV7/2T-M8	LED, red	Transistor, NPN		Activation input, multiplex operation, teach input	50,000 Hz	Connector, M8, 4-pin	Slide switch, rocker pressure switch
50133983	LV463.XR7/2T2-150-M12	LED, red	Transistor, NPN		Transistor, NPN, multiplex operation, activation input, teach input	21 Hz	Cable with connector, 150 mm, M12, 5-pin	Slide switch, rocker pressure switch
50133993	LV463.XR7/2TC-150-M12	LED, red	Transistor, NPN	Current	Teach input, multiplex operation, activation input	21 Hz	Cable with connector, 150 mm, M12, 5-pin	Rocker pressure switch, slide switch
50133988	LV463.XR7/2TV-150-M12	LED, red	Transistor, NPN	Voltage	Activation input, teach input, multiplex operation	21 Hz	Cable with connector, 150 mm, M12, 5-pin	Rocker pressure switch, slide switch
50118411	LV463.7/2T-150-M12	LED, red	Transistor, NPN		Teach input, activation input, multiplex operation	2,500 Hz	Cable with connector, 150 mm, M12, 4-pin	Slide switch, rocker pressure switch
50133978	LV463.XR7/2T-150-M12	LED, red	Transistor, NPN		Activation input, multiplex operation, teach input	21 Hz	Cable with connector, 150 mm, M12, 4-pin	Rocker pressure switch, slide switch
50133967	LV463.XV7/2T-150-M12	LED, red	Transistor, NPN		Multiplex operation, activation input, teach input	50,000 Hz	Cable with connector, 150 mm, M12, 4-pin	Slide switch, rocker pressure switch
50118410	LV463.7/2T-150-M8	LED, red	Transistor, NPN		Teach input, activation input, multiplex operation	2,500 Hz	Cable with connector, 150 mm, M8, 4-pin	Slide switch, rocker pressure switch
50119071	LV463.7/2-150-M8.3	LED, red	Transistor, NPN			2,500 Hz	Cable with connector, 150 mm, M8, 3-pin	Slide switch, rocker pressure switch
50133982	LV463.XR7/2T2	LED, red	Transistor, NPN		Transistor, NPN, teach input, activation input, multiplex operation	21 Hz	Cable, 2,000 mm, 5-wire	Slide switch, rocker pressure switch
50133992	LV463.XR7/2TC	LED, red	Transistor, NPN	Current	Multiplex operation, activation input, teach input	21 Hz	Cable, 2,000 mm, 5-wire	Rocker pressure switch, slide switch
50133987	LV463.XR7/2TV	LED, red	Transistor, NPN	Voltage	Activation input, multiplex operation, teach input	21 Hz	Cable, 2,000 mm, 5-wire	Slide switch, rocker pressure switch
50118408	LV463.7/2T	LED, red	Transistor, NPN		Teach input, activation input, multiplex operation	2,500 Hz	Cable, 2,000 mm, 4-wire	Slide switch, rocker pressure switch
50133977	LV463.XR7/2T	LED, red	Transistor, NPN		Activation input, multiplex operation, teach input	21 Hz	Cable, 2,000 mm, 4-wire	Rocker pressure switch, slide switch

Switching sensors

Measuring sensors

Products for safety at work

Identification

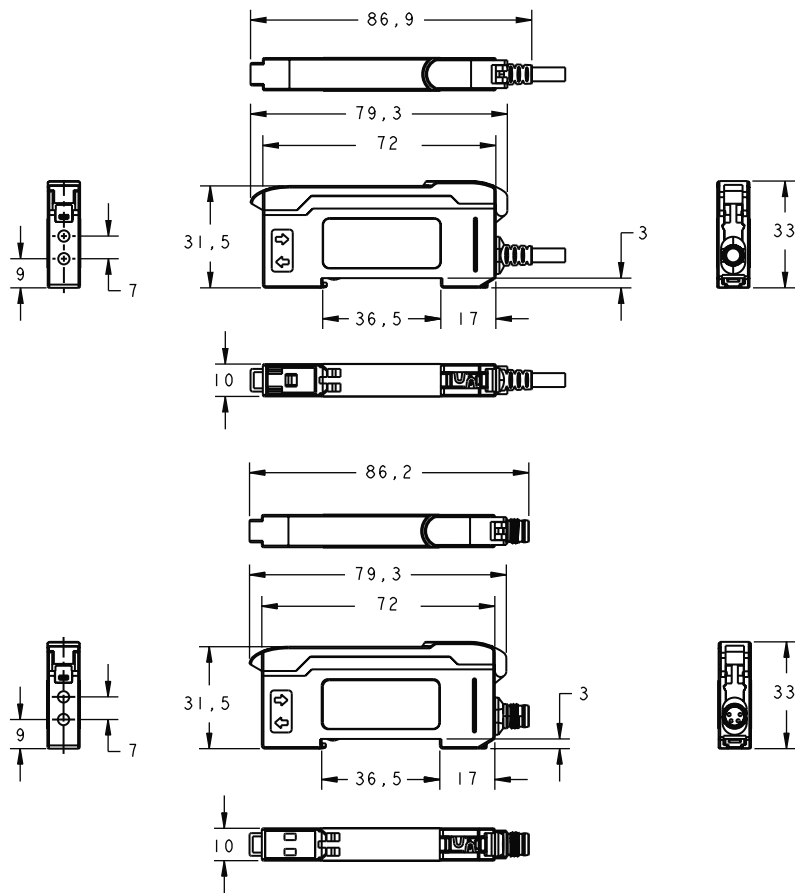
Data transmission / Control components

Industrial image processing

Accessories

Part no.	Part description	Light source	Switching output	Analog outputs	Input/output	Switching frequency	Connection	Operational controls
50133966	LV463.XV7/2T	LED, red	Transistor, NPN		Activation input, multiplex operation, teach input	50,000 Hz	Cable, 2,000 mm, 4-wire	Rocker pressure switch, slide switch
50122456	LV463.7/L4-M8	LED, red	Transistor, push-pull, IO-Link		Transistor, PNP	2,500 Hz	Connector, M8, 4-pin	Slide switch, rocker pressure switch
50134007	LV463.XR7/L4-M8	LED, red	Transistor, push-pull, IO-Link		Transistor, PNP	21 Hz	Connector, M8, 4-pin	Slide switch, rocker pressure switch
50133969	LV463.XV7/L4-M8	LED, red	Transistor, push-pull, IO-Link		Transistor, PNP	50,000 Hz	Connector, M8, 4-pin	Rocker pressure switch, slide switch
50134008	LV463.XR7/L4	LED, red	Transistor, push-pull, IO-Link		Transistor, PNP	21 Hz	Connector, 2,000 mm, 4-wire	Slide switch, rocker pressure switch
50133970	LV463.XV7/L4	LED, red	Transistor, push-pull, IO-Link		Transistor, PNP	50,000 Hz	Connector, 2,000 mm, 4-wire	Slide switch, rocker pressure switch
50122457	LV463.7/L4-150-M12	LED, red	Transistor, push-pull, IO-Link		Transistor, PNP	2,500 Hz	Cable with connector, 150 mm, M12, 4-pin	Slide switch, rocker pressure switch
50134009	LV463.XR7/L4-150-M12	LED, red	Transistor, push-pull, IO-Link		Transistor, PNP	21 Hz	Cable with connector, 150 mm, M12, 4-pin	Rocker pressure switch, slide switch
50133971	LV463.XV7/L4-150-M12	LED, red	Transistor, push-pull, IO-Link		Transistor, PNP	50,000 Hz	Cable with connector, 150 mm, M12, 4-pin	Rocker pressure switch, slide switch
50122459	LV463.7/L4-150-M8	LED, red	Transistor, push-pull, IO-Link		Transistor, PNP	2,500 Hz	Cable with connector, 150 mm, M8, 4-pin	Slide switch, rocker pressure switch
50122460	LV463.7/L4	LED, red	Transistor, push-pull, IO-Link		Transistor, PNP	2,500 Hz	Cable, 2,000 mm, 4-wire	Slide switch, rocker pressure switch

### Dimensioned drawings: LV463



LV 463 and LV 463B fiber optic amplifiers

## ACCESSORIES: AMPLIFIERS

## Connection technology

## Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130688	KD U-M12-4W-V1-020	Connector, M12, angled, female	4-pin	2,000 mm	PVC
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50132536	KD U-M12-5W-P1-020	Connector, M12, angled, female	5-pin	2,000 mm	PUR
50132537	KD U-M12-5W-P1-050	Connector, M12, angled, female	5-pin	5,000 mm	PUR
50133842	KD U-M12-5W-V1-020	Connector, M12, angled, female	5-pin	2,000 mm	PVC
50133802	KD U-M12-5W-V1-050	Connector, M12, angled, female	5-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC
50133839	KD U-M12-5A-P1-020	Connector, M12, axial, female	5-pin	2,000 mm	PUR
50133841	KD U-M12-5A-P1-050	Connector, M12, axial, female	5-pin	5,000 mm	PUR
50132077	KD U-M12-5A-V1-020	Connector, M12, axial, female	5-pin	2,000 mm	PVC
50132079	KD U-M12-5A-V1-050	Connector, M12, axial, female	5-pin	5,000 mm	PVC
50130865	KD U-M8-3W-P1-020	Connector, M8, angled, female	3-pin	2,000 mm	PUR
50130867	KD U-M8-3W-P1-050	Connector, M8, angled, female	3-pin	5,000 mm	PUR
50130860	KD U-M8-3W-V1-020	Connector, M8, angled, female	3-pin	2,000 mm	PVC
50130862	KD U-M8-3W-V1-050	Connector, M8, angled, female	3-pin	5,000 mm	PVC
50130873	KD U-M8-4W-P1-020	Connector, M8, angled, female	4-pin	2,000 mm	PUR
50130875	KD U-M8-4W-P1-050	Connector, M8, angled, female	4-pin	5,000 mm	PUR
50130869	KD U-M8-4W-V1-020	Connector, M8, angled, female	4-pin	2,000 mm	PVC
50130871	KD U-M8-4W-V1-050	Connector, M8, angled, female	4-pin	5,000 mm	PVC
50130842	KD U-M8-3A-P1-020	Connector, M8, axial, female	3-pin	2,000 mm	PUR
50130844	KD U-M8-3A-P1-050	Connector, M8, axial, female	3-pin	5,000 mm	PUR
50130837	KD U-M8-3A-V1-020	Connector, M8, axial, female	3-pin	2,000 mm	PVC
50130832	KD U-M8-3A-V1-050	Connector, M8, axial, female	3-pin	5,000 mm	PVC
50130854	KD U-M8-4A-P1-020	Connector, M8, axial, female	4-pin	2,000 mm	PUR
50130856	KD U-M8-4A-P1-050	Connector, M8, axial, female	4-pin	5,000 mm	PUR
50130848	KD U-M8-4A-V1-020	Connector, M8, axial, female	4-pin	2,000 mm	PVC
50130850	KD U-M8-4A-V1-050	Connector, M8, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

Switching  
sensorsMeasuring  
sensorsProducts for  
safety at work

Identification

Data transmission/  
Control componentsIndustrial image  
processing

Accessories

# //FIBER OPTICS

## PLASTIC OR GLASS – DEPENDING ON THE AREA OF APPLICATION

For simple integration, each is available in a range of different designs and fiber optics cross sections.

### /// Plastic fiber optics



Plastic fiber optic cables are available for reflective operation or for the throughbeam principle. The selection is made depending on the design of the fiber head and the functional characteristics of the fibers. A very wide selection of different fiber optics are available, including with bend protection.

#### Benefits:

- Large selection of fiber optics
- Fiber optics with injection-molded bending protection
- Fiber optics with lateral optics
- Cross-section converter
- Fiber optics with V-optics
- Attachment lens for greater ranges or higher precision



Direct access to the online product selector at [www.leuze.com/en/plastic-fo](http://www.leuze.com/en/plastic-fo)

Part no.	Part description	Operating principle	Design	Fiber length Outer diameter	Light beam exit	Minimum object diameter	Fiber sheathing material	Description
50132746	KF-L-320	Throughbeam principle	Cylindrical	2,000 mm 2.8 mm	Front	0.5 mm	PE	Single fiber core
50117739	KF-L-320-D-T14L	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Lateral	0.1 mm	PE	Single fiber core
50137383	KF-L-420	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Front	0.5 mm	PE	Single fiber core
50117741	KF-LD-210-32	Throughbeam principle	Cylindrical	2,000 mm 1.25 mm	Lateral	0.05 mm	PE	Single fiber core
50117738	KF-LE-220	Throughbeam principle	Cylindrical	2,000 mm 1 mm	Front	0.03 mm	PE	Single fiber core
50126967	KF-LH-320-D	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Lateral	0.1 mm	PE	Heat resistant, single fiber core
50122328	KF-LP-FU92-520-Q	Throughbeam principle	Cylindrical	2,000 mm 4 mm	Front	0.5 mm	PTFE	Single fiber core
50122327	KF-LP-FU96-520-Q	Throughbeam principle	Cylindrical	2,000 mm 4 mm	Lateral	0.5 mm	PTFE	Single fiber core
50117750	KF-LY-77TZ-20	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Lateral	0.5 mm	PE	Single fiber core
50117770	KFX-L-320	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Front	0.5 mm	PE	Single fiber core
50117774	KFX-L-320-Q	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Front	0.5 mm	PE	Single fiber core
50117766	KFX-L-420	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Front	0.5 mm	PE	Single fiber core
50117776	KFX-LA-220	Throughbeam principle	Cylindrical	2,000 mm 1.25 mm	Front	0.03 mm	PE	Single fiber core
50117777	KFX-LD-120	Throughbeam principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Single fiber core
50117771	KFX-LD-320	Throughbeam principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Single fiber core
50117775	KFX-LD-320-Q	Throughbeam principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Single fiber core
50117767	KFX-LD-420	Throughbeam principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Single fiber core
50117772	KFX-LH-320	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Front	0.5 mm	PE	Heat resistant, single fiber core
50117768	KFX-LH-420	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Front	0.5 mm	PE	Heat resistant, single fiber core
50117773	KFX-LY-320	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Front	0.5 mm	PE	Single fiber core
50117769	KFX-LY-420	Throughbeam principle	Cylindrical	2,000 mm 2.2 mm	Front	0.5 mm	PE	Single fiber core
50117749	KF-LC32-12	Throughbeam principle	Cylindrical	900 mm 2.8 mm	bent 90 °	0.1 mm	PE	Multiple fiber core, mixed fiber configuration
50117740	KF-LH-305-D	Throughbeam principle	Cylindrical	500 mm 2.2 mm	Lateral	0.1 mm	PE	Heat resistant, single fiber core
50137382	KF-ET-620	Diffuse reflection principle	Cylindrical	2,000 mm 2.2 mm	Front	0.2 mm	PE	50 % / 50 % fiber configuration
50132149	KF-ETC-420	Diffuse reflection principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Coaxial fiber configuration, multiple fiber core

A LV4xx series amplifier is required for operation!

Part no.	Part description	Operating principle	Design	Fiber length Outer diameter	Light beam exit	Minimum object diameter	Fiber sheathing material	Description
50117737	KF-ETE-220	Diffuse reflection principle	Cylindrical	2,000 mm 1 mm	Front	0.05 mm	PE	Single fiber core
50132817	KF-ETW-FU31-20	Diffuse reflection principle	Cylindrical	2,000 mm 1.47 mm	Lateral	0.1 mm	PE	Multiple fiber core
50117752	KFX-ET-620	Diffuse reflection principle	Cylindrical	2,000 mm 2.2 mm	Front	0.2 mm	PE	Single fiber core
50117758	KFX-ETA-320	Diffuse reflection principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Single fiber core
50117755	KFX-ETA-420	Diffuse reflection principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Single fiber core
50117759	KFX-ETC-320	Diffuse reflection principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Multiple fiber core, coaxial fiber configuration
50117761	KFX-ETC-320-Q	Diffuse reflection principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Multiple fiber core, coaxial fiber configuration
50117756	KFX-ETC-420	Diffuse reflection principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Multiple fiber core, coaxial fiber configuration
50117753	KFX-ETC-620	Diffuse reflection principle	Cylindrical	2,000 mm 2.2 mm	Front	0.1 mm	PE	Multiple fiber core, coaxial fiber configuration
50117763	KFX-ETC7-120	Diffuse reflection principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Multiple fiber core, coaxial fiber configuration
50117760	KFX-ETD-320	Diffuse reflection principle	Cylindrical	2,000 mm 1.25 mm	Front	0.1 mm	PE	Single fiber core
50117762	KFX-ETD-320-Q	Diffuse reflection principle	Cylindrical	2,000 mm 1.25 mm	Front	0.05 mm	PE	Single fiber core
50117757	KFX-ETD-420	Diffuse reflection principle	Cylindrical	2,000 mm 1.25 mm	Front	0.1 mm	PE	Single fiber core
50117754	KFX-ETH-620	Diffuse reflection principle	Cylindrical	2,000 mm 2.2 mm	Front	0.2 mm	PE	Heat resistant, single fiber core
50117764	KFX-ETY-67TZ-20	Diffuse reflection principle	Cylindrical	2,000 mm 2.2 mm	Lateral	0.2 mm	PE	Single fiber core
50121079	KFX-ET-605	Diffuse reflection principle	Cylindrical	500 mm 2.2 mm	Front	0.2 mm	PE	Single fiber core
50117743	KF-L-10MLD-20	Throughbeam principle	Cubic	2,000 mm 2.2 mm	Lateral	1 mm	PE	Multiple fiber core, mixed fiber configuration
50117744	KF-L-15MLD-10	Throughbeam principle	Cubic	2,000 mm 2.2 mm	Lateral	1 mm	PE	Multiple fiber core, mixed fiber configuration
50117746	KF-L-30ML-20	Throughbeam principle	Cubic	2,000 mm 2.8 mm	Lateral	1 mm	PE	Multiple fiber core, mixed fiber configuration
50117747	KF-L-50ML-20	Throughbeam principle	Cubic	2,000 mm 2.2 mm	Lateral	2 mm	PE	Multiple fiber core, mixed fiber configuration
50117748	KF-LW-FU53-20	Throughbeam principle	Cubic	2,000 mm 1 mm	Lateral	0.1 mm	PE	Single fiber core
50117745	KF-LW-FU57-20	Throughbeam principle	Cubic	2,000 mm 1 mm	Lateral	0.1 mm	PE	Single fiber core
50117751	KF-LY-U09-20	Throughbeam principle	Cubic	2,000 mm 2.2 mm	Lateral		PE	Single fiber core
50117778	KFX-L-20ML-20	Throughbeam principle	Cubic	2,000 mm 2.8 mm	Front	1 mm	PE	Multiple fiber core, mixed fiber configuration
50117742	KF-L-10ML-10	Throughbeam principle	Cubic	1,000 mm 2.2 mm	Front	1 mm	PE	Multiple fiber core, mixed fiber configuration
50117727	KF-ET-10ML-20	Diffuse reflection principle	Cubic	2,000 mm 1.25 mm	Front	1 mm	PE	Multiple fiber core, mixed fiber configuration
50117729	KF-ET-20MLS-20	Diffuse reflection principle	Cubic	2,000 mm 2.2 mm	Front	1 mm	PE	Multiple fiber core, mixed fiber configuration
50117730	KF-ET-30ML-20	Diffuse reflection principle	Cubic	2,000 mm 2.2 mm	Lateral	1 mm	PE	Multiple fiber core, mixed fiber configuration
50117731	KF-ET-50ML-20	Diffuse reflection principle	Cubic	2,000 mm 2.2 mm	Lateral	2 mm	PE	Multiple fiber core, mixed fiber configuration
50117735	KF-ETB-38V-20	Diffuse reflection principle	Cubic	2,000 mm 1.3 mm	Lateral		PE	Single fiber core
50117736	KF-ETH-38H-20	Diffuse reflection principle	Cubic	2,000 mm 2.2 mm	Lateral		PE	Heat resistant, single fiber core
50117733	KF-ETW-FU47-20	Diffuse reflection principle	Cubic	2,000 mm 1 mm	Lateral	0.1 mm	PE	Single fiber core
50117734	KF-ETW-K10-20	Diffuse reflection principle	Cubic	2,000 mm 1 mm	Lateral	0.1 mm	PE	Single fiber core
50117732	KF-ETY-20MLSD-20	Diffuse reflection principle	Cubic	2,000 mm 2.2 mm	Lateral	0.5 mm	PE	Single fiber core
50117765	KFX-ET-20ML-20	Diffuse reflection principle	Cubic	2,000 mm 2.2 mm	Front	1 mm	PE	Multiple fiber core
50117728	KF-ET-15MLD-20	Diffuse reflection principle	Cubic	1,000 mm 1.25 mm	Lateral	1 mm	PE	Multiple fiber core, mixed fiber configuration

A LV4xx series amplifier is required for operation!

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**/// Glass fiber optics**

For applications with high temperature resistance, glass fiber optics are often used. The selection is made depending on the design of the fiber head and the sheathing material.

**Benefits:**

- Wide variety of types of glass fiber optics
- Mechanically robust metal sheathing designs, partially from corrosion-proof stainless steel
- Use also possible at high temperatures
- Special solutions for vacuum-sealed light feed-throughs



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Part no.	Part description	Operating principle	Design	Fiber length Outer diameter	Light beam exit	Fiber sheathing material	Description
50126470	GF-LB-BR-450-IQ	Throughbeam principle	Cylindrical	5,000 mm 4 mm	On face	Nickel-plated brass	Heat resistant, multiple fiber core, mixed fiber configuration
50126462	GF-LB-SI-450-IQ	Throughbeam principle	Cylindrical	5,000 mm 4 mm	On face	Silicone	Heat resistant, multiple fiber core, mixed fiber configuration
50126466	GF-LB-SS-450-IQ	Throughbeam principle	Cylindrical	5,000 mm 4 mm	On face	Stainless steel	Heat resistant, multiple fiber core, mixed fiber configuration
50126469	GF-LB-BR-430-IQ	Throughbeam principle	Cylindrical	3,000 mm 4 mm	On face	Nickel-plated brass	Heat resistant, multiple fiber core, mixed fiber configuration
50126500	GF-LB-BR-630-SD	Throughbeam principle	Cylindrical	3,000 mm 4.5 mm	Lateral without lens	Nickel-plated brass	Heat resistant, multiple fiber core, mixed fiber configuration
50126461	GF-LB-SI-430-IQ	Throughbeam principle	Cylindrical	3,000 mm 4 mm	On face	Silicone	Heat resistant, multiple fiber core, mixed fiber configuration
50126498	GF-LB-SI-630-SD	Throughbeam principle	Cylindrical	3,000 mm 4.5 mm	Lateral without lens	Silicone	Heat resistant, multiple fiber core
50126465	GF-LB-SS-430-IQ	Throughbeam principle	Cylindrical	3,000 mm 4 mm	On face	Stainless steel	Heat resistant, multiple fiber core, mixed fiber configuration
50126499	GF-LB-SS-630-SD	Throughbeam principle	Cylindrical	3,000 mm 4.5 mm	Lateral without lens	Stainless steel	Heat resistant, multiple fiber core, mixed fiber configuration
50127341	GF-LB-SS-830-SM	Throughbeam principle	Cylindrical	3,000 mm 4.5 mm	Front	Stainless steel	Heat resistant, multiple fiber core, mixed fiber configuration
50126468	GF-LB-BR-410-IQ	Throughbeam principle	Cylindrical	1,000 mm 4 mm	On face	Nickel-plated brass	Heat resistant, multiple fiber core, mixed fiber configuration
50126497	GF-LB-BR-610-SD	Throughbeam principle	Cylindrical	1,000 mm 4.5 mm	Lateral without lens	Nickel-plated brass	Heat resistant, multiple fiber core, mixed fiber configuration
50126491	GF-LB-BR-610-SU	Throughbeam principle	Cylindrical	1,000 mm 4.5 mm	bent 90 °	Nickel-plated brass	Heat resistant, multiple fiber core, mixed fiber configuration
50127340	GF-LB-BR-810-SF	Throughbeam principle	Cylindrical	1,000 mm 4.5 mm	Lateral with lens	Nickel-plated brass	Heat resistant, multiple fiber core, mixed fiber configuration
50126460	GF-LB-SI-410-IQ	Throughbeam principle	Cylindrical	1,000 mm 4 mm	On face	Silicone	Heat resistant, multiple fiber core, mixed fiber configuration
50126495	GF-LB-SI-610-SD	Throughbeam principle	Cylindrical	1,000 mm 4.5 mm	Lateral without lens	Silicone	Heat resistant, multiple fiber core
50126489	GF-LB-SI-610-SU	Throughbeam principle	Cylindrical	1,000 mm 4.5 mm	bent 90 °	Silicone	Heat resistant, multiple fiber core, mixed fiber configuration
50127338	GF-LB-SI-810-SF	Throughbeam principle	Cylindrical	1,000 mm 4.5 mm	Lateral with lens	Silicone	Heat resistant, multiple fiber core, mixed fiber configuration
50126464	GF-LB-SS-410-IQ	Throughbeam principle	Cylindrical	1,000 mm 4 mm	On face	Stainless steel	Heat resistant, multiple fiber core, mixed fiber configuration
50126496	GF-LB-SS-610-SD	Throughbeam principle	Cylindrical	1,000 mm 4.5 mm	Lateral without lens	Stainless steel	Heat resistant, multiple fiber core, mixed fiber configuration
50126490	GF-LB-SS-610-SU	Throughbeam principle	Cylindrical	1,000 mm 4.5 mm	bent 90 °	Stainless steel	Heat resistant, multiple fiber core, mixed fiber configuration
50127339	GF-LB-SS-810-SF	Throughbeam principle	Cylindrical	1,000 mm 4.5 mm	Lateral with lens	Stainless steel	Heat resistant, multiple fiber core, mixed fiber configuration
50126467	GF-LB-BR-405-IQ	Throughbeam principle	Cylindrical	500 mm 4 mm	On face	Nickel-plated brass	Heat resistant, multiple fiber core, mixed fiber configuration
50126459	GF-LB-SI-405-IQ	Throughbeam principle	Cylindrical	500 mm 4 mm	On face	Silicone	Heat resistant, multiple fiber core, mixed fiber configuration
50126463	GF-LB-SS-405-IQ	Throughbeam principle	Cylindrical	500 mm 4 mm	On face	Stainless steel	Heat resistant, multiple fiber core, mixed fiber configuration
50126488	GF-ETG-BR-650-IQ	Diffuse reflection principle	Cylindrical	5,000 mm 6 mm	On face	Nickel-plated brass	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126476	GF-ETG-SI-650-IQ	Diffuse reflection principle	Cylindrical	5,000 mm 6 mm	On face	Silicone	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126482	GF-ETG-SS-650-IQ	Diffuse reflection principle	Cylindrical	5,000 mm 6 mm	On face	Stainless steel	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126487	GF-ETG-BR-630-IQ	Diffuse reflection principle	Cylindrical	3,000 mm 6 mm	On face	Nickel-plated brass	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126475	GF-ETG-SI-630-IQ	Diffuse reflection principle	Cylindrical	3,000 mm 6 mm	On face	Silicone	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126481	GF-ETG-SS-630-IQ	Diffuse reflection principle	Cylindrical	3,000 mm 6 mm	On face	Stainless steel	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126485	GF-ETG-BR-310-IQ	Diffuse reflection principle	Cylindrical	1,000 mm 3 mm	On face	Nickel-plated brass	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core

A LVSR 325 series amplifier is required for operation!

Part no.	Part description	Operating principle	Design	Fiber length Outer diameter	Light beam exit	Fiber sheathing material	Description
50126486	GF-ETG-BR-610-IQ	Diffuse reflection principle	Cylindrical	1,000 mm 6 mm	On face	Nickel-plated brass	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126494	GF-ETG-BR-710-SU	Diffuse reflection principle	Cylindrical	1,000 mm 6 mm	bent 90 °	Nickel-plated brass	Heat resistant, multiple fiber core, mixed fiber configuration
50126473	GF-ETG-SI-310-IQ	Diffuse reflection principle	Cylindrical	1,000 mm 3 mm	On face	Silicone	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126474	GF-ETG-SI-610-IQ	Diffuse reflection principle	Cylindrical	1,000 mm 6 mm	On face	Silicone	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126492	GF-ETG-SI-710-SU	Diffuse reflection principle	Cylindrical	1,000 mm 6 mm	bent 90 °	Silicone	Heat resistant, multiple fiber core
50126479	GF-ETG-SS-310-IQ	Diffuse reflection principle	Cylindrical	1,000 mm 3 mm	On face	Stainless steel	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126480	GF-ETG-SS-610-IQ	Diffuse reflection principle	Cylindrical	1,000 mm 6 mm	On face	Stainless steel	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126493	GF-ETG-SS-710-SU	Diffuse reflection principle	Cylindrical	1,000 mm 6 mm	bent 90 °	Stainless steel	Heat resistant, multiple fiber core
50134919	GF-ETB-SS-305-SM	Diffuse reflection principle	Cylindrical	500 mm 3.8 mm	On face	Stainless steel	Heat resistant, multiple fiber core
50126483	GF-ETG-BR-305-IQ	Diffuse reflection principle	Cylindrical	500 mm 3 mm	On face	Nickel-plated brass	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126484	GF-ETG-BR-605-IQ	Diffuse reflection principle	Cylindrical	500 mm 6 mm	On face	Nickel-plated brass	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126471	GF-ETG-SI-305-IQ	Diffuse reflection principle	Cylindrical	500 mm 3 mm	On face	Silicone	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126472	GF-ETG-SI-605-IQ	Diffuse reflection principle	Cylindrical	500 mm 6 mm	On face	Silicone	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126477	GF-ETG-SS-305-IQ	Diffuse reflection principle	Cylindrical	500 mm 3 mm	On face	Stainless steel	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50126478	GF-ETG-SS-605-IQ	Diffuse reflection principle	Cylindrical	500 mm 6 mm	On face	Stainless steel	Heat resistant, 50 % / 50 % fiber configuration, multiple fiber core
50127342	GF-ETM-BR-402-IM	Diffuse reflection principle	Cylindrical	200 mm 4 mm	Front	Nickel-plated brass	Heat resistant, multiple fiber core, mixed fiber configuration

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