

GLASS OPTICAL FIBERS

- ✓ For high ambient temperatures (models with chrome-plated brass and silicone sleeves)
- ✓ Executions for extreme environmental conditions
- ✓ Small dimensions
- ✓ Long sensing ranges
- ✓ Suitable for the detection of smallest objects
- ✓ Large selection of types

TECHNICAL DATA

Ambient temperature range	PVC sleeve	0 ... +70°C 32 ... +158°F
	Wound brass sleeve	-25 ... +160°C -13 ... +320°F
	Silicone sleeve	-25 ... +150°C -13 ... +302°F
Protection degree of sensing head	IP 65 (optional up to IP 68)	
Protection degree of optical fiber	PVC sleeve	IP 67
	Wound brass sleeve	IP 54
	Silicone sleeve	IP 67
Standard lengths	250 mm, 500 mm, 1000 mm	
Sensing head material	Aluminum	
Sensing head light-outlet tube material	Stainless steel	
Optical attenuation	0.01 dB / m max. at 880 nm	
Angle of incidence	See data sheets	

Depending on the type involved, glass optical fibers consist of 200 to 5000 individual fibers with diameters of 30 to 50 μm . The fiber bundle is surrounded by a sleeve, which can be selected according to the application:

- PVC sleeve: the economical solution if no special stresses are to be expected.
- Wound sleeve of chrome-plated brass: for permanent operating temperatures of up to +160°C (+320°F), and maximum protection against crushing.
- Silicone sleeve with stainless-steel braiding for strain relief: for use in corrosive media, at temperatures of up to +150°C (+302°F), and where mechanical strain relief is required.

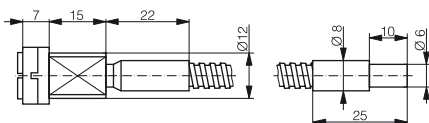
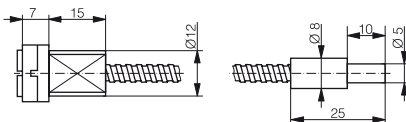
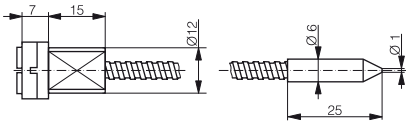
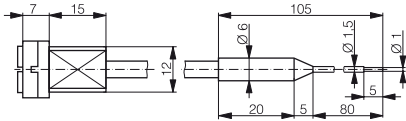
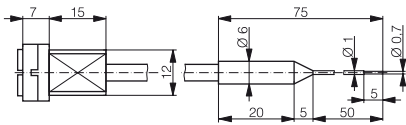
The sensing heads are available with straight or right-angle light outlets. The range comprises models for use as diffuse sensors (emitting and receiving fiber bundles in the same sleeve) and as through-beam sensors (the fiber bundles are in separate sleeves). In order to cover various application needs, a number of different bundle cross-sections are available: large cross-sections for long sensing ranges, small cross-sections for short ranges, high resolutions, and detection of small objects.

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AXIAL DIFFUSE SENSING

length of glass fiber in cm, standard lengths -025 (250 mm) / -050 (500 mm) / -100 (1000 mm)
 (-### only 500 mm length)

Dimensions: light emission on the right



Housing size: Ø 6 mm

Part reference	LFG-1005-###
Sensing range	with series 4040 5 mm
Special characteristics	With bendable light-outlet tube For the detection of smallest objects
Sleeve	Silicone, Ø 4.7 mm
Min. bending radius	20 mm / light-outlet tube: 5 mm (do not bend the inner and outer 10 mm)
Max. tensile load	10 N

Housing size: Ø 6 mm

Part reference	LFG-1015-###
Sensing range	with series 4040 15 mm
Special characteristics	With bendable light-outlet tube For places difficult to access
Sleeve	Silicone, Ø 4.7 mm
Min. bending radius	20 mm / light-outlet tube: 5 mm (do not bend the inner and outer 10 mm)
Max. tensile load	10 N

Housing size: Ø 6 mm

Part reference	LFG-1010-###
Sensing range	with series 4040 15 mm
Special characteristics	For the detection of smallest objects in places difficult to access
Sleeve	Wound sleeve of chrome-plated brass, Ø 4.7 mm
Min. bending radius	23 mm
Max. tensile load	20 N

Housing size: Ø 8 mm

Part reference	LFG-1020-###
Sensing range	with series 4040 50 mm
Special characteristics	Multi-purpose medium sensing range model
Sleeve	Wound sleeve of chrome-plated brass, Ø 4.7 mm
Min. bending radius	25 mm
Max. tensile load	50 N

Housing size: Ø 8 mm

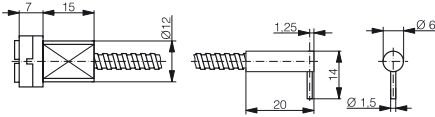
Part reference	LFG-1030-###
Sensing range	with series 4040 150 mm
Special characteristics	For long sensing range
Sleeve	Wound sleeve of chrome-plated brass, Ø 6.7 mm
Min. bending radius	25 mm
Max. tensile load	50 N

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RADIAL DIFFUSE SENSING

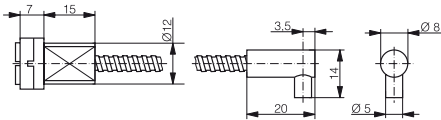
length of glass fiber in cm, standard lengths -025 (250 mm) / -050 (500 mm) / -100 (1000 mm)
 (-### **only 500 mm length**)

Dimensions: light emission on the right



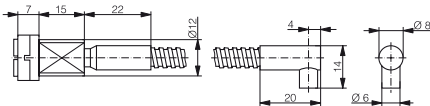
Housing size: \varnothing 6 mm

Part reference	LFG-2010-###	
Sensing range	with series 4040	15 mm
Special characteristics	For the detection of smallest objects in places difficult to access	
Leg length	14 mm	
Sleeve	Wound sleeve of chrome-plated brass, \varnothing 4.7 mm	
Min. bending radius	23 mm	
Max. tensile load	20 N	



Housing size: \varnothing 8 mm

Part reference	LFG-2020-###	
Sensing range	with series 4040	30 mm
Special characteristics	Multi-purpose medium sensing range model	
Leg length	14 mm	
Sleeve	Wound sleeve of chrome-plated brass, \varnothing 4.7 mm	
Min. bending radius	25 mm	
Max. tensile load	50 N	



Housing size: \varnothing 8 mm

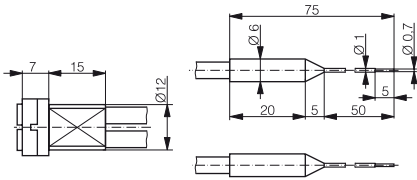
Part reference	LFG-2030-###	
Sensing range	with series 4040	150 mm
Special characteristics	For long sensing range	
Leg length	14 mm	
Sleeve	Wound sleeve of chrome-plated brass, \varnothing 6.7 mm	
Min. bending radius	25 mm	
Max. tensile load	50 N	

GLASS OPTICAL FIBERS

AXIAL THROUGH-BEAM SENSING

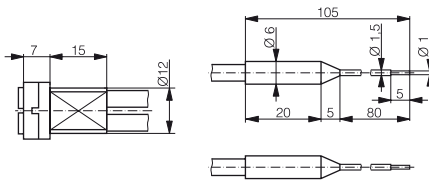
length of glass fiber in cm, standard lengths -025 (250 mm) / -050 (500 mm) / -100 (1000 mm)
 (-### **only 500 mm length**)

Dimensions: light emission on the right



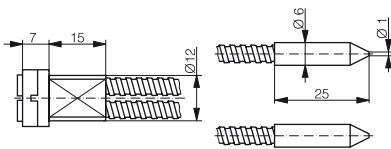
Housing size: Ø 6 mm

Part reference	LFG-3005-###
Sensing range	with series 4040 50 mm
Special characteristics	With bendable light-outlet tube For the detection of smallest objects
Sleeve	Silicone, Ø 4.7 mm
Min. bending radius	20 mm / light-outlet tube: 5 mm (do not bend the inner and outer 10 mm)
Max. tensile load	10 N



Housing size: Ø 6 mm

Part reference	LFG-3015-###
Sensing range	with series 4040 200 mm
Special characteristics	With bendable light-outlet tube For places difficult to access
Sleeve	Silicone, Ø 4.7 mm
Min. bending radius	20 mm / light-outlet tube: 5 mm (do not bend the inner and outer 10 mm)
Max. tensile load	10 N



Housing size: Ø 6 mm

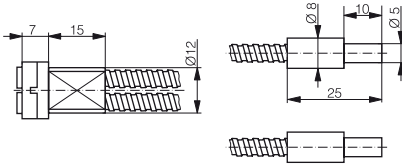
Part reference	LFG-3010-###
Sensing range	with series 4040 200 mm
Special characteristics	For the detection of smallest objects in places difficult to access
Sleeve	Wound sleeve of chrome-plated brass, Ø 4.7 mm
Min. bending radius	23 mm
Max. tensile load	20 N

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AXIAL THROUGH-BEAM SENSING

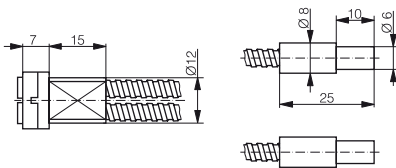
length of glass fiber in cm, standard lengths -025 (250 mm) / -050 (500 mm) / -100 (1000 mm)
 (-### **only 500 mm length**)

Dimensions: light emission on the right



Housing size: Ø 8 mm

Part reference	LFG-3020-###	
Sensing range	with series 4040	800 mm
Special characteristics	Multi-purpose medium sensing range model	
Sleeve	Wound sleeve of chrome-plated brass, Ø 4.7 mm	
Min. bending radius	25 mm	
Max. tensile load	50 N	



Housing size: Ø 8 mm

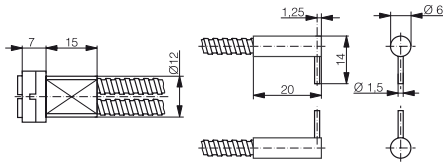
Part reference	LFG-3030-###	
Sensing range	with series 4040	1500 mm
Special characteristics	For long sensing range	
Sleeve	Wound sleeve of chrome-plated brass, Ø 4.7 mm	
Min. bending radius	25 mm	
Max. tensile load	50 N	

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RADIAL THROUGH-BEAM SENSING

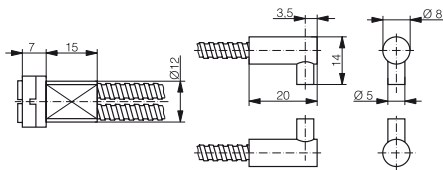
length of glass fiber in cm, standard lengths -025 (250 mm) / -050 (500 mm) / -100 (1000 mm)
 (-### **only 500 mm length**)

Dimensions: light emission on the right



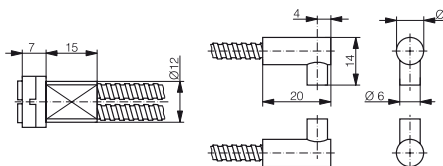
Housing size: Ø 6 mm

Part reference	LFG-4010-###
Sensing range	with series 4040 200 mm
Special characteristics	For the detection of smallest objects in places difficult to access
Leg length	14 mm
Sleeve	Wound sleeve of chrome-plated brass, Ø 4.7 mm
Min. bending radius	23 mm
Max. tensile load	20 N



Housing size: Ø 8 mm

Part reference	LFG-4020-###
Sensing range	with series 4040 800 mm
Special characteristics	Multi-purpose medium sensing range model
Leg length	14 mm
Sleeve	Wound sleeve of chrome-plated brass, Ø 4.7 mm
Min. bending radius	25 mm
Max. tensile load	50 N



Housing size: Ø 8 mm

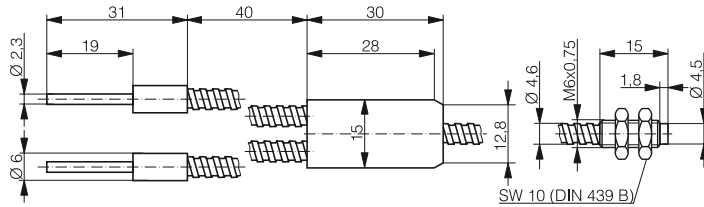
Part reference	LFG-4030-###
Sensing range	with series 4040 1500 mm
Special characteristics	For long sensing range
Leg length	14 mm
Sleeve	Wound sleeve of chrome-plated brass, Ø 4.7 mm
Min. bending radius	25 mm
Max. tensile load	50 N

GLASS OPTICAL FIBERS

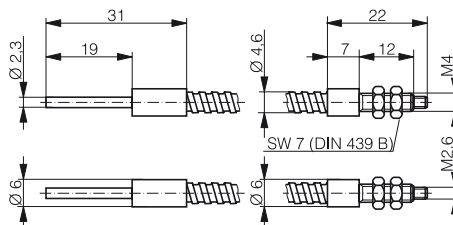
Dimensions: light emission on the right

FOR SERIES 3030 / 3031 SENSORS (CONNECTION AS WITH SYNTHETIC FIBERS)

Housing size: M6	Diffuse sensing
Part reference	LFG-1022-050
Sensing range	with series 3030 120 mm with series 3031 60 mm
Special characteristics	For difficult environmental conditions
Sleeve	Wound sleeve of chrome-plated brass, \varnothing 4.6 mm
Min. bending radius	25 mm
Max. tensile load	20 N

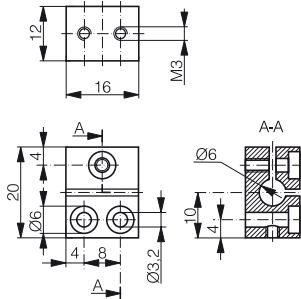


Housing size: M4	Through-beam sensing
Part reference	LFG-3022-050
Sensing range	with series 3030 500 mm with series 3031 250 mm
Special characteristics	For difficult environmental conditions
Sleeve	Wound sleeve of chrome-plated brass, \varnothing 4.6 mm
Min. bending radius	25 mm
Max. tensile load	20 N



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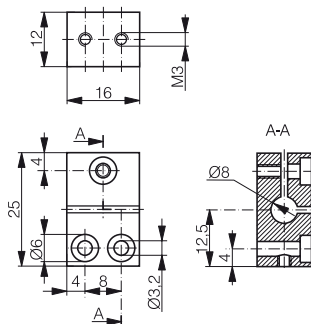
ACCESSORIES



For \varnothing 6 mm heads

Fiber mounting clamp

Part reference	LXG-0000-060
Characteristics	Mounting clamp for axial and radial light-outlet tubes
Material	Nickel-plated brass
Suitable for the following fibers	LFG-1005-### / LFG-1015-###
	LFG-1010-### / LFG-2010-###
	LFG-3005-### / LFG-3015-###
	LFG-3010-### / LFG-4010-###



For \varnothing 8 mm heads

Fiber mounting clamp

Part reference	LXG-0000-080
Characteristics	Mounting clamp for axial and radial light-outlet tubes
Material	Nickel-plated brass
Suitable for the following fibers	LFG-1020-### / LFG-1030-###
	LFG-2020-### / LFG-2030-###
	LFG-3020-### / LFG-3030-###
	LFG-4020-### / LFG-4030-###