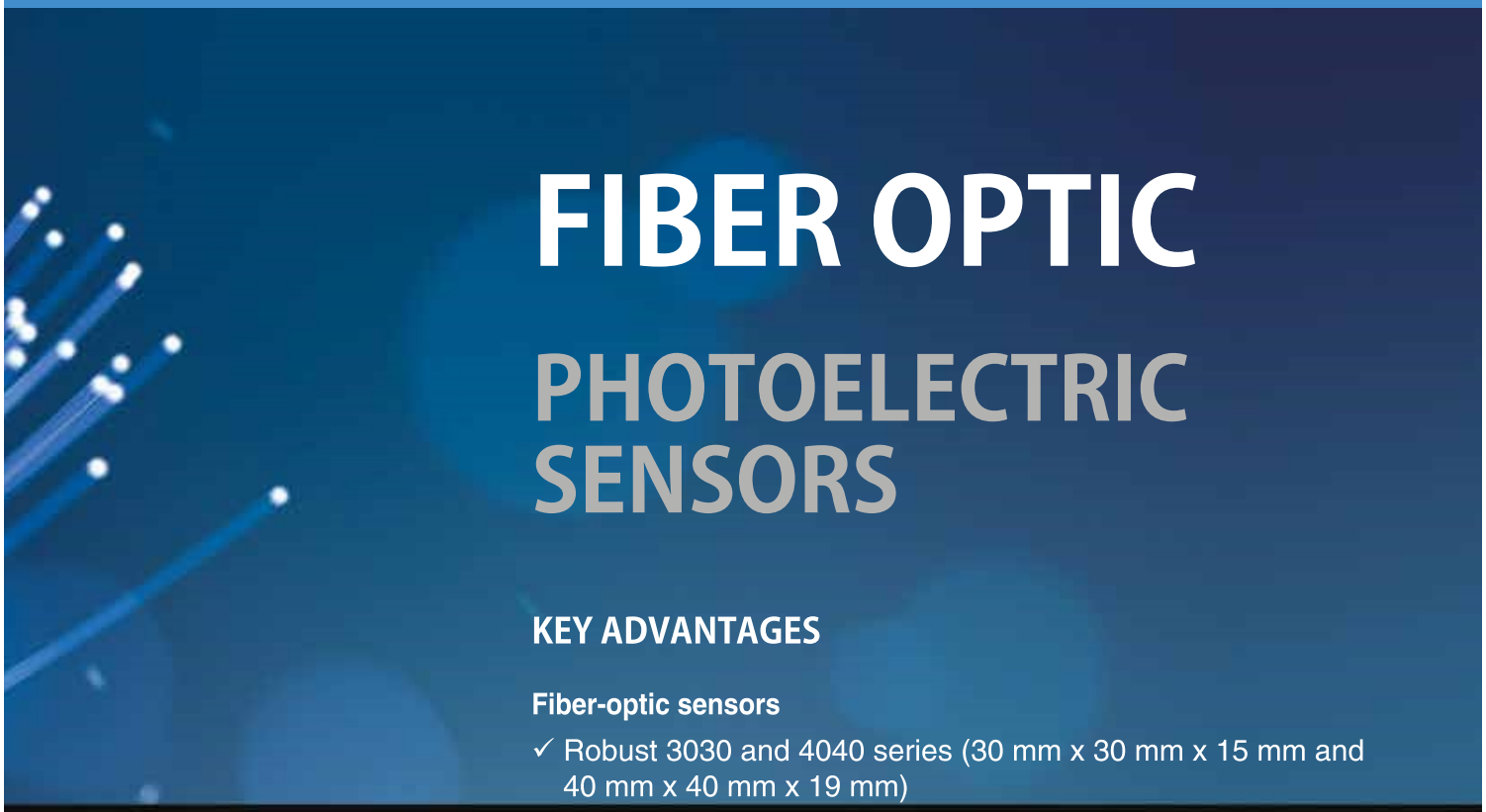

IO-Link
Set

RELIABLE SHORT AND LONG-RANGE SENSING



FIBER OPTIC

PHOTOELECTRIC SENSORS

KEY ADVANTAGES

Fiber-optic sensors

- ✓ Robust 3030 and 4040 series (30 mm x 30 mm x 15 mm and 40 mm x 40 mm x 19 mm)
- ✓ DIN-rail mounted 3060 series (31 mm x 60 mm x 10 mm) suitable for multiple-sensor applications
- ✓ Distance setting by potentiometer or teach-in
- ✓ IO-Link

Fibers

- ✓ Large selection of types, including cylindrical light beam, multi-beam, liquid level monitoring and low & high temperature
- ✓ Diffuse or through-beam sensing, axial or radial
- ✓ Synthetic fibers with bending radii from 2 mm, suitable for cutting on-site
- ✓ Glass fibers for high temperatures and aggressive environments

RANGE OVERVIEW	Series	Amplifer	Plastic fiber	Glass fiber
FIBER OPTIC	3030 (30x30x15)	p. 252-254	p. 262-270	p. 277
	3060 (31x60x10)	p. 256-259	p. 262-270	
	4040 (40x40x19)	p. 260-261		p. 272-276

AMPLIFIER 3060

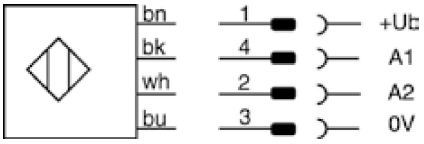
PHOTOELECTRIC SENSORS

ADVANTAGES

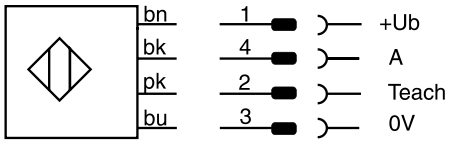
- ✓ Complete series of fiber-optic amplifiers for plastic fibers and DIN-rail mounting
- ✓ Small housings 31 x 60 x 10 mm
- ✓ Sensing ranges up to 200 mm
- ✓ IO-Link
- ✓ Blue light version for glass detection

WIRING DIAGRAMS

PNP or NPN, 2 outputs



PNP or NPN, 1output + teach-in

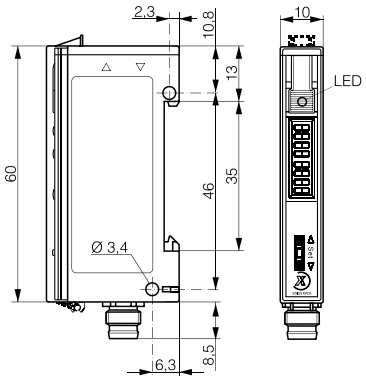


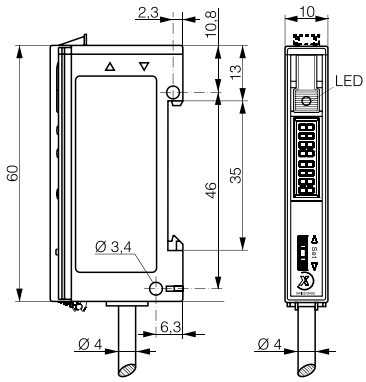
OVERVIEW	3060
Housing material	PBTP (Crastin)
Degree of protection	IP 64
Supply voltage range	10 ... 30 VDC
Ambient temperature range	-25 ... +55°C / -13 ... +131°F // -5 ... +55°C / +23 ... +131°F (3066)
Output current	≤ 200 mA
Compatible mounting bracket	See page 271

3060 SERIES

PHOTOELECTRIC

HOUSING SIZE MM	☐ 31 X 60 X 10	☐ 31 X 60 X 10
OPERATING PRINCIPLE	FIBER-OPTIC AMPLIFIER	FIBER-OPTIC AMPLIFIER
SENSING RANGE MM	200	200



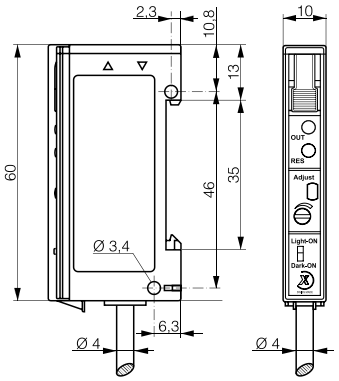


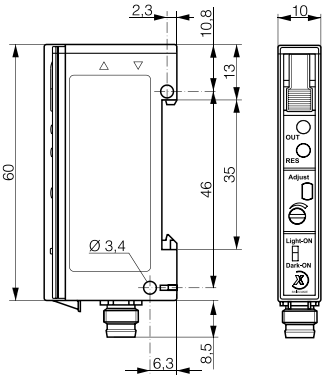
DATA	IO-Link	
Light source	LED red 680 nm	LED red 680 nm
Max. switching frequency	4000 Hz	4000 Hz
Setup	Teach-in	Teach-in
PNP Light-ON/Dark-ON switchable	**LFS-3066-403**	**LFK-3066-403**
NPN Light-ON/Dark-ON switchable	**LFS-3066-301**	**LFK-3066-301**
Other types available		

AMPLIFIER

PHOTOELECTRIC

HOUSING SIZE MM	☐ 31 X 60 X 10	☐ 31 X 60 X 10
OPERATING PRINCIPLE	FIBER-OPTIC AMPLIFIER	FIBER-OPTIC AMPLIFIER
SENSING RANGE MM	200	200



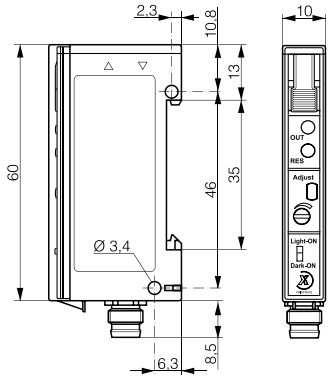


DATA		
Light source	LED red 680 nm	LED red 680 nm
Max. switching frequency	1500 Hz	1500 Hz
Setup	Potentiometer	Potentiometer
PNP Light-ON/Dark-ON switchable + Excess gain	**LFK-3060-103**	**LFS-3060-103**
NPN Light-ON/Dark-ON switchable + Excess gain	**LFK-3060-101**	**LFS-3060-101**
Other types available		

☐ 31 X 60 X 10

FIBER-OPTIC AMPLIFIER - BLUE LIGHT

100

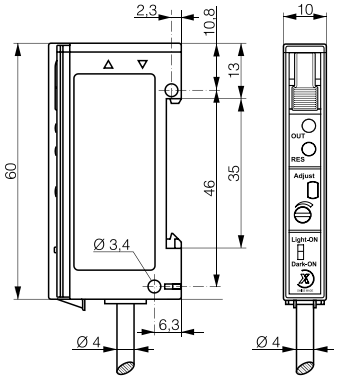


LED blue 465 nm
1500 Hz
Potentiometer
LFS-3360-103
LFS-3360-101

☐ 31 X 60 X 10

FIBER-OPTIC AMPLIFIER - BLUE LIGHT

100



LED blue 465 nm
1500 Hz
Potentiometer
LFK-3360-103
LFK-3360-101

SYNTHETIC OPTICAL FIBERS

- ✓ Very small dimensions
- ✓ Long sensing ranges
- ✓ Small bending radii
- ✓ Can be cut on site
- ✓ Large selection of types
- ✓ Mechanically rugged sensing head

TECHNICAL DATA

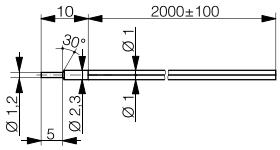
Ambient temperature range	-25 ... +70°C / -55 ... +105°C*
	(-13 ... +158°F / -67 ... +221°F*)
Standard length	2 m ± 0.1 m (other lengths on request)
Fiber bending radii:	
miniature / multi-beam	15 mm
standard / coaxial	25 mm
low & high temperature	25 mm
liquid level monitoring	25 mm
flexible	2 mm
luminous (enhanced brightness)	40 mm
Bending radius of light-outlet tube	25 mm
Tensile load	30 N max.
Fiber material	PMMA
Sleeve material	Polyethylene
Sensing head material	Stainless steel V2A / PBTP**
Sensing head light-outlet tube material	Stainless steel V2A
Optical attenuation:	
standard / luminous (enhanced brightness)	0.2 dB / m max. at 660 nm
miniature / low & high temperature	0.2 dB / m max. at 660 nm
flexible / coaxial / multi-beam	0.3 dB / m max. at 660 nm
Angle of incidence	See data sheets
Tightening torque:	
M3	1 Nm
M4	2 Nm
M5	3 Nm
M6	4 Nm
M8	10 Nm

* LFP-1002-020-002 / LFP-2002-020-002

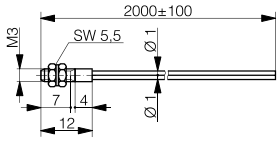
** LFP-1011-020

DIFFUSE SENSING

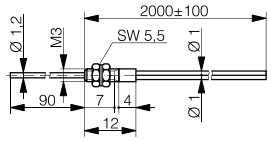
Dimensions: *light emission on the left*



Housing size: ∅ 2.3 mm	Miniature	
Part reference	LFP-1012-020	
Sensing range	with series 3030	40 mm (with 2 m fiber length)
	with series 3031	20 mm (with 2 m fiber length)
	with series 3#6#	70 mm (with 2 m fiber length)
Outside fiber	1 separable double fiber, ∅ 1 mm*	
Inner fiber	∅ 0.5 mm	
Special characteristics	Highest resolution	
* Adaptor included in delivery package		



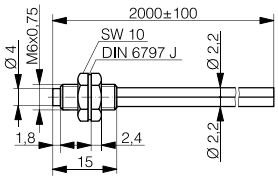
Housing size: M3	Miniature	
Part reference	LFP-1001-020	
Sensing range	with series 3030	40 mm (with 2 m fiber length)
	with series 3031	20 mm (with 2 m fiber length)
	with series 3#6#	70 mm (with 2 m fiber length)
Outside fiber	1 separable double fiber, ∅ 1 mm*	
Inner fiber	∅ 0.5 mm	
Special characteristics	Highest resolution	
* Adaptor included in delivery package		



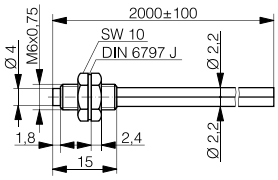
Housing size: M3	Miniature	
Part reference	LFP-1004-020	
Sensing range	with series 3030	40 mm (with 2 m fiber length)
	with series 3031	20 mm (with 2 m fiber length)
	with series 3#6#	70 mm (with 2 m fiber length)
Outside fiber	1 separable double fiber, ∅ 1 mm*	
Inner fiber	∅ 0.5 mm	
Special characteristics	Sensing head with bendable light-outlet tube for ease of positioning; highest resolution	
* Adaptor included in delivery package		

DIFFUSE SENSING

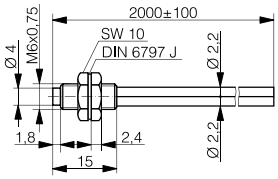
Dimensions: *light emission on the left*



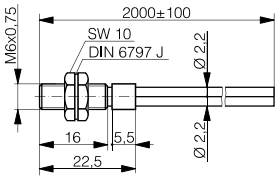
Housing size: M6	Standard	
Part reference	LFP-1002-020	
Sensing range	with series 3030	120 mm (with 2 m fiber length)
	with series 3031	60 mm (with 2 m fiber length)
	with series 3#6#	200 mm (with 2 m fiber length)
Outside fiber	1 separable double fiber, ∅ 2.2 mm	
Inner fiber	∅ 1.0 mm	
Special characteristics	Long sensing range	



Housing size: M6	Flexible	
Part reference	LFP-1102-020	
Sensing range	with series 3030	90 mm (with 2 m fiber length)
	with series 3031	45 mm (with 2 m fiber length)
	with series 3#6#	150 mm (with 2 m fiber length)
Outside fiber	1 separable double fiber, ∅ 2.2 mm	
Inner fiber	151 x ∅ 75 µm	
Special characteristics	Very small bending radius	



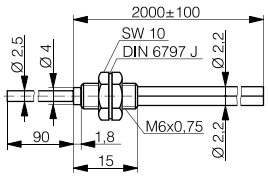
Housing size: M6	Luminous (enhanced brightness)	
Part reference	LFP-1202-020	
Sensing range	with series 3030	160 mm (with 2 m fiber length)
	with series 3031	80 mm (with 2 m fiber length)
	with series 3#6#	260 mm (with 2 m fiber length)
Outside fiber	1 separable double fiber, ∅ 2.2 mm	
Inner fiber	∅ 1.5 mm	
Special characteristics	Longest sensing range	



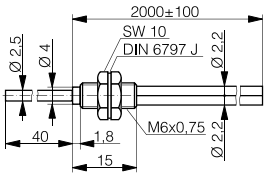
Housing size: M6	Coaxial	
Part reference	LFP-1003-020	
Sensing range	with series 3030	120 mm (with 2 m fiber length)
	with series 3031	60 mm (with 2 m fiber length)
	with series 3#6#	200 mm (with 2 m fiber length)
Outside fiber	1 separable double fiber, ∅ 2.2 mm	
Inner fiber	∅ 1.0 mm	
Special characteristics	Coaxial arrangement of fibers,	
	thus axially symmetric beam	

DIFFUSE SENSING

Dimensions: *light emission on the left*



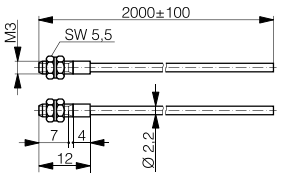
Housing size: M6	Standard	
Part reference	LFP-1005-020	
Sensing range	with series 3030	120 mm (with 2 m fiber length)
	with series 3031	60 mm (with 2 m fiber length)
	with series 3#6#	200 mm (with 2 m fiber length)
Outside fiber	1 separable double fiber, ∅ 2.2 mm	
Inner fiber	∅ 1.0 mm	
Special characteristics	Sensing head with bendable light-outlet tube for ease	
	of positioning	
	Long sensing range	



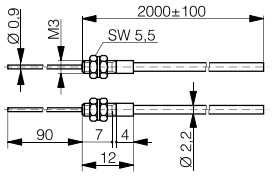
Housing size: M6	Standard	
Part reference	LFP-1013-020	
Sensing range	with series 3030	120 mm (with 2 m fiber length)
	with series 3031	60 mm (with 2 m fiber length)
	with series 3#6#	200 mm (with 2 m fiber length)
Outside fiber	1 separable double fiber, ∅ 2.2 mm	
Inner fiber	∅ 1.0 mm	
Special characteristics	Sensing head with bendable light-outlet tube for ease	
	of positioning	
	Long sensing range	

THROUGH-BEAM SENSING

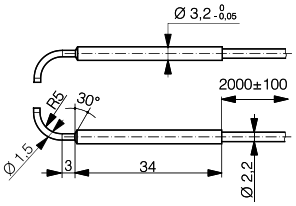
Dimensions: *light emission on the left*



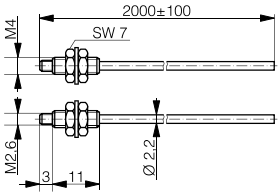
Housing size: M3	Miniature	
Part reference	LFP-2001-020	
Sensing range	with series 3030	120 mm (with 2 m fiber length)
	with series 3031	60 mm (with 2 m fiber length)
	with series 3#6#	200 mm (with 2 m fiber length)
Outside fiber	2 individual fibers, ∅ 2.2 mm	
Inner fiber	∅ 0.5 mm	
Special characteristics	Highest resolution	



Housing size: M3	Miniature	
Part reference	LFP-2003-020	
Sensing range	with series 3030	120 mm (with 2 m fiber length)
	with series 3031	60 mm (with 2 m fiber length)
	with series 3#6#	200 mm (with 2 m fiber length)
Outside fiber	2 individual fibers, ∅ 2.2 mm	
Inner fiber	∅ 0.5 mm	
Special characteristics	Sensing head with bendable light-outlet tube for ease	
	of positioning	
	Highest resolution	



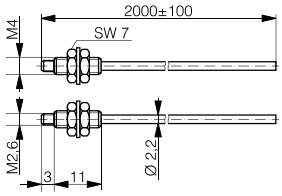
Housing size: ∅ 3.2 mm	Standard 90°	
Part reference	LFP-2006-020	
Sensing range	with series 3030	120 mm (with 2 m fiber length)
	with series 3031	60 mm (with 2 m fiber length)
	with series 3#6#	200 mm (with 2 m fiber length)
Outside fiber	2 individual fibers, ∅ 2.2 mm	
Inner fiber	∅ 1.0 mm	
Special characteristics	Lateral sensing	



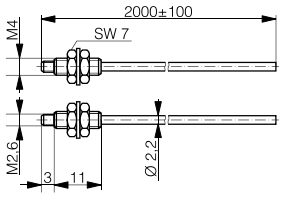
Housing size: M4	Standard	
Part reference	LFP-2002-020	
Sensing range	with series 3030	400 mm (with 2 m fiber length)
	with series 3031	200 mm (with 2 m fiber length)
	with series 3#6#	700 mm (with 2 m fiber length)
Outside fiber	2 individual fibers, ∅ 2.2 mm	
Inner fiber	∅ 1.0 mm	
Special characteristics	Long sensing range	

THROUGH-BEAM SENSING

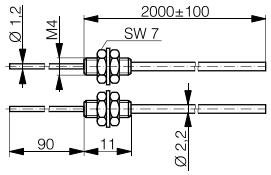
Dimensions: *light emission on the left*



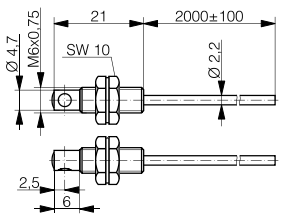
Housing size: M4	Flexible	
Part reference	LFP-2102-020	
Sensing range	with series 3030	300 mm (with 2 m fiber length)
	with series 3031	150 mm (with 2 m fiber length)
	with series 3#6#	550 mm (with 2 m fiber length)
Outside fiber	2 individual fibers, ∅ 2.2 mm	
Inner fiber	151 x ∅ 75 µm	
Special characteristics	Very small bending radius	



Housing size: M4	Luminous (enhanced brightness)	
Part reference	LFP-2202-020	
Sensing range	with series 3030	500 mm (with 2 m fiber length)
	with series 3031	250 mm (with 2 m fiber length)
	with series 3#6#	900 mm (with 2 m fiber length)
Outside fiber	2 individual fibers, ∅ 2.2 mm	
Inner fiber	∅ 1.5 mm	
Special characteristics	Longest sensing range	



Housing size: M4	Standard	
Part reference	LFP-2004-020	
Sensing range	with series 3030	400 mm (with 2 m fiber length)
	with series 3031	200 mm (with 2 m fiber length)
	with series 3#6#	700 mm (with 2 m fiber length)
Outside fiber	2 individual fibers, ∅ 2.2 mm	
Inner fiber	∅ 1.0 mm	
Special characteristics	Sensing head with bendable light-outlet tube for ease	
	of positioning	
	Long sensing range	

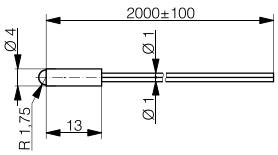


Housing size: M6	Standard 90°	
Part reference	LFP-2005-020	
Sensing range	with series 3030	1100 mm (with 2 m fiber length)
	with series 3031	550 mm (with 2 m fiber length)
	with series 3#6#	1800 mm (with 2 m fiber length)
Outside fiber	2 individual fibers, ∅ 2.2 mm	
Inner fiber	∅ 1.0 mm	
Special characteristics	Lateral sensing	
	Long sensing range	

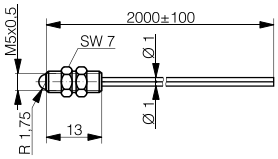
APPLICATION-SPECIFIC CYLINDRICAL LIGHT BEAM

Dimensions: *light emission on the left*

- ✓ Diffuse fibers particularly suitable for the detection of objects in recesses and behind covers (through holes and gaps)
- ✓ Extremely small sensing heads
- ✓ Quasi-cylindrical light beam
- ✓ Recessed mounting possible
- ✓ Sapphire glass optical parts, thus easy to clean

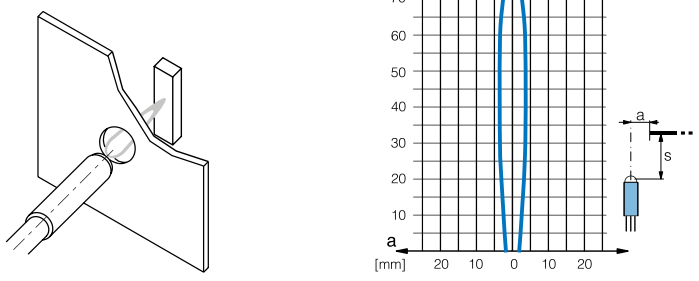


Housing size: ∅ 4 mm	Miniature / spherical optics	
Part reference	LFP-1006-020	
Sensing range	with series 3030	100 mm (with 2 m fiber length)
	with series 3031	60 mm (with 2 m fiber length)
	with series 3#6#	140 mm (with 2 m fiber length)
Outside fiber	1 separable double fiber, ∅ 1 mm*	
Inner fiber	∅ 0.5 mm	
Special characteristics	Spherical optics for cylindrical light beam	
* Adaptor included in delivery package		



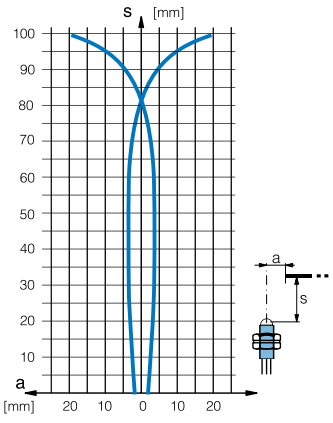
Housing size: M5	Miniature / spherical optics	
Part reference	LFP-1007-020	
Sensing range	with series 3030	100 mm (with 2 m fiber length)
	with series 3031	60 mm (with 2 m fiber length)
	with series 3#6#	140 mm (with 2 m fiber length)
Outside fiber	1 separable double fiber, ∅ 1 mm*	
Inner fiber	∅ 0.5 mm	
Special characteristics	Spherical optics for cylindrical light beam	
* Adaptor included in delivery package		

Response curves (with series 3030):



Detection through holes and gaps

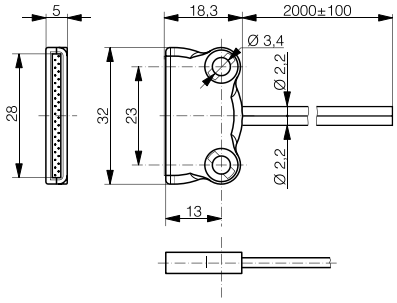
LFP-1006-020



LFP-1007-020

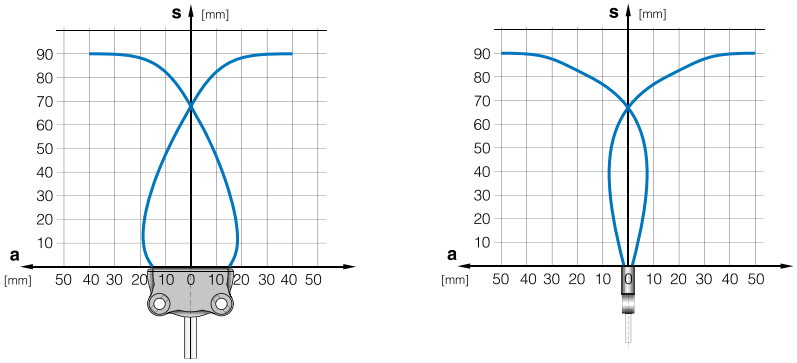
APPLICATION-SPECIFIC MULTI-BEAM

- ✓ Multi-beam diffuse fiber
- ✓ Detection of objects across the whole width of the sensing head (28 mm)
- ✓ Suitable for rough environments, thanks to PBTP housing
- ✓ Lateral mounting



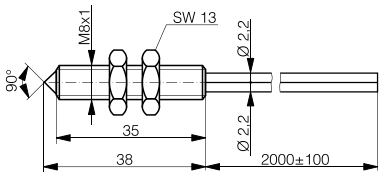
Housing size: ☐ 18 x 32	Multi-beam	
Part reference	LFP-1011-020	
Sensing range	with series 3030	90 mm (with 2 m fiber length)
	with series 3031	45 mm (with 2 m fiber length)
	with series 3#6#	150 mm (with 2 m fiber length)
Outside fiber	2 separate fibers, ∅ 2.2 mm	
Inner fiber	16 x ∅ 0.265 mm	
Special characteristics	Wide detection range (28 mm)	

Response curves (with series 3030):



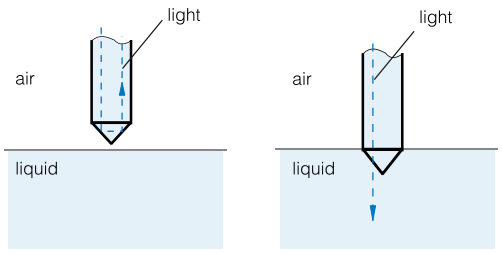
APPLICATION-SPECIFIC LIQUID LEVEL MONITORING

- ✓ Contact liquid detection (with the exception of white milky liquids)
- ✓ Fully potted optical parts
- ✓ Scratch-resistant, easy-to-clean glass prism
- ✓ Impervious (degree of protection: IP 68)



Housing size: M8	Liquid level monitoring
Part reference	LFP-1010-020
Outside fiber	2 separate fibers, ∅ 2.2 mm
Inner fiber	∅ 0.5 mm
Special characteristics	Contact liquid detection

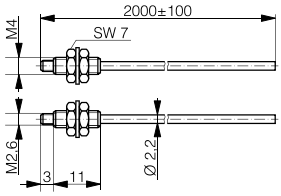
Operating principle:



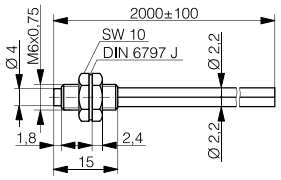
APPLICATION-SPECIFIC LOW & HIGH TEMPERATURES

Dimensions: *light emission on the left*

- ✓ Diffuse (LFP-1002-020-002) and through-beam (LFP-2002-020-002) fibers
- ✓ Extended temperature range : -55 ... +105°C / -67 ... +221°F
- ✓ Very small dimensions
- ✓ Long sensing ranges
- ✓ Small bending radii
- ✓ Can be cut on site

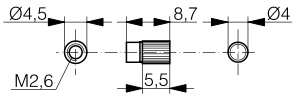


Housing size: M4	Low & high temperature resistant	
Part reference	LFP-2002-020-002	
Sensing range	with series 3030	300 mm (with 2 m fiber length)
	with series 3031	150 mm (with 2 m fiber length)
	with series 3#6#	550 mm (with 2 m fiber length)
Outside fiber	2 individual fibers, ∅ 2.2 mm	
Inner fiber	∅ 1.0 mm	
Special characteristics	Extended temperature range of -55...+105°C / -67...+221°F	

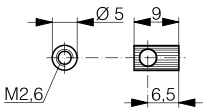


Housing size: M6	Low & high temperature resistant	
Part reference	LFP-1002-020-002	
Sensing range	with series 3030	90 mm (with 2 m fiber length)
	with series 3031	45 mm (with 2 m fiber length)
	with series 3#6#	150 mm (with 2 m fiber length)
Outside fiber	1 separable double fiber, ∅ 2.2 mm	
Inner fiber	∅ 1.0 mm	
Special characteristics	Extended temperature range of -55...+105°C / -67...+221°F	

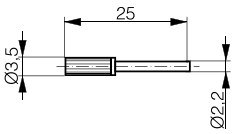
ACCESSORIES



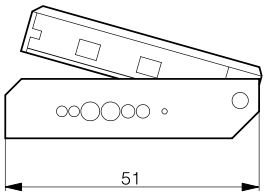
Axial front lens for increased sensing ranges		
Part reference	LFP-0001-000	
Sensing range	with series 3030	3000 mm (2 m fibers)
	with series 3031	1500 mm (2 m fibers)
	with series 3#6#	5000 mm (5 m fibers)
Can be used with	LFP-2#02-020	
Delivery package	1 pair	



90° front lens for increased sensing ranges		
Part reference	LFP-0002-000	
Sensing range	with series 3030	1000 mm (2 m fibers)
	with series 3031	500 mm (2 m fibers)
	with series 3#6#	1700 mm (2 m fibers)
Can be used with	LFP-2#02-020	
Delivery package	1 pair	



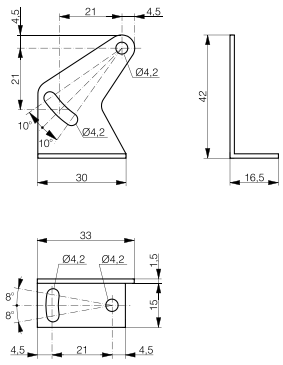
Adaptor	
Part reference	LFP-0003-000
Suitable for	fine synthetic optical fibers



Cutting tool	
Part reference	LXF-0000-000
Suitable for	all synthetic optical fibers

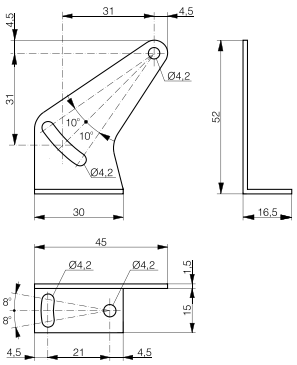
UNIVERSAL MOUNTING BRACKET

For 3030 / 3031 series
Material: stainless steel V2A
Part reference: ***LXW-3030-000***



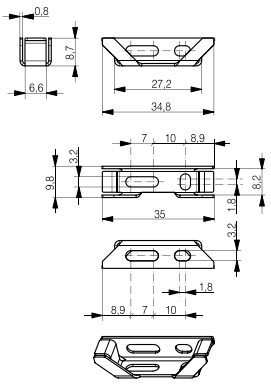
UNIVERSAL MOUNTING BRACKET

For 4040 series
Material: stainless steel V2A
Part reference: ***LXW-4040-000***



UNIVERSAL MOUNTING BRACKET

For 3#6# series
Material: stainless steel V2A
Part reference: ***LXW-3060-000***



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:

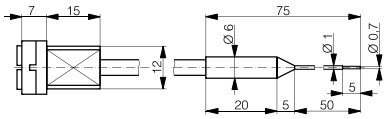
- PVC sleeve: the economical solution if no special stresses are to be expected.
- Wound sleeve of chrome-plated brass: for permanent operating temperatures of up to +160°C (+320°F), and maximum protection against crushing.
- Silicone sleeve with stainless-steel braiding for strain relief: for use in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

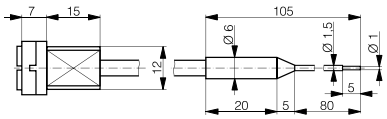
AXIAL DIFFUSE SENSING

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

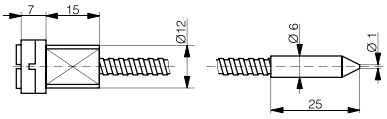
Dimensions: *light emission on the right*



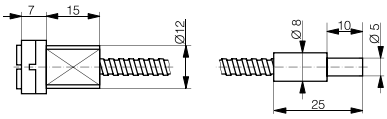
Housing size: ∅ 6 mm	
Part reference	LFG-1005-###
Sensing range	with series 4040 5 mm
Special characteristics	With bendable light-outlet tube
	For the detection of smallest objects
Sleeve	Silicone, ∅ 4.7 mm
Min. bending radius	20 mm / light-outlet tube: 5 mm
	(do not bend the inner and outer 10 mm)
Max. tensile load	10 N



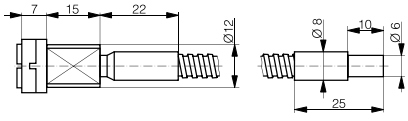
Housing size: ∅ 6 mm	
Part reference	LFG-1015-###
Sensing range	with series 4040 15 mm
Special characteristics	With bendable light-outlet tube
	For places difficult to access
Sleeve	Silicone, ∅ 4.7 mm
Min. bending radius	20 mm / light-outlet tube: 5 mm
	(do not bend the inner and outer 10 mm)
Max. tensile load	10 N



Housing size: ∅ 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, ∅ 4.7 mm
Min. bending radius	23 mm
Max. tensile load	20 N



Housing size: ∅ 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, ∅ 4.7 mm
Min. bending radius	25 mm
Max. tensile load	50 N

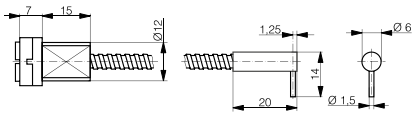


Housing size: ∅ 8 mm	
Part reference	LFG-1030-###
Sensing range	with series 4040 150 mm
Special characteristics	For long sensing range
Sleeve	Wound sleeve of chrome-plated brass, ∅ 6.7 mm
Min. bending radius	25 mm
Max. tensile load	50 N

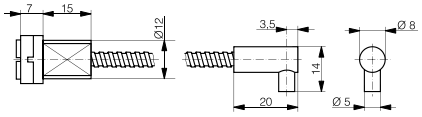
RADIAL DIFFUSE SENSING

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

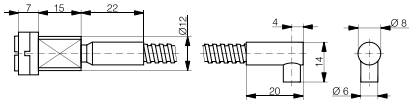
Dimensions: *light emission on the right*



Housing size: ∅ 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, ∅ 4.7 mm	
Min. bending radius	23 mm	
Max. tensile load	20 N	



Housing size: ∅ 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, ∅ 4.7 mm	
Min. bending radius	25 mm	
Max. tensile load	50 N	

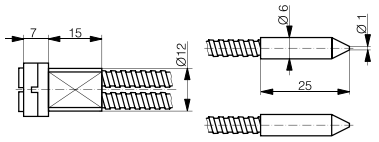


Housing size: ∅ 8 mm		
Part reference	LFG-2030-###	
Sensing range	with series 4040	150 mm
Special characteristics	For long sensing range	
Leg length	14 mm	
Sleeve	Wound sleeve of chrome-plated brass, ∅ 6.7 mm	
Min. bending radius	25 mm	
Max. tensile load	50 N	

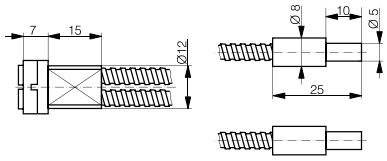
AXIAL THROUGH-BEAM SENSING

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

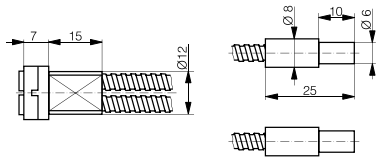
Dimensions: *light emission on the right*



Housing size: ∅ 6 mm		
Part reference	LFG-3010-050	
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, ∅ 4.7 mm	
Min. bending radius	23 mm	
Max. tensile load	20 N	



Housing size: ∅ 8 mm		
Part reference	LFG-3020-050	
Sensing range	with series 4040	800 mm
Special characteristics	Multi-purpose medium sensing range model	
Sleeve	Wound sleeve of chrome-plated brass, ∅ 4.7 mm	
Min. bending radius	25 mm	
Max. tensile load	50 N	

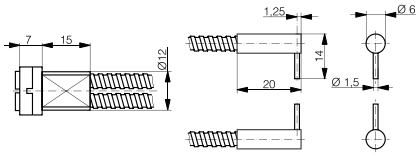


Housing size: ∅ 8 mm		
Part reference	LFG-3030-###	
Sensing range	with series 4040	1500 mm
Special characteristics	For long sensing range	
Sleeve	Wound sleeve of chrome-plated brass, ∅ 4.7 mm	
Min. bending radius	25 mm	
Max. tensile load	50 N	

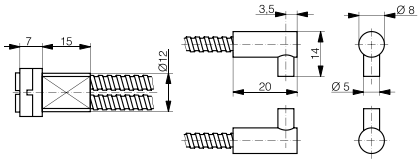
RADIAL THROUGH-BEAM SENSING

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

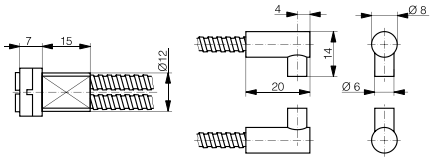
Dimensions: *light emission on the right*



Housing size: ∅ 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, ∅ 4.7 mm	
Min. bending radius	23 mm	
Max. tensile load	20 N	



Housing size: ∅ 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, ∅ 4.7 mm	
Min. bending radius	25 mm	
Max. tensile load	50 N	

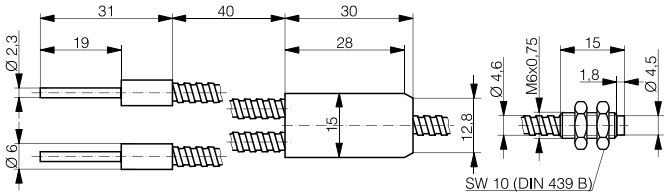


Housing size: ∅ 8 mm		
Part reference	LFG-4030-100	
Sensing range	with series 4040	1500 mm
Special characteristics	For long sensing range	
Leg length	14 mm	
Sleeve	Wound sleeve of chrome-plated brass, ∅ 4.7 mm	
Min. bending radius	25 mm	
Max. tensile load	50 N	

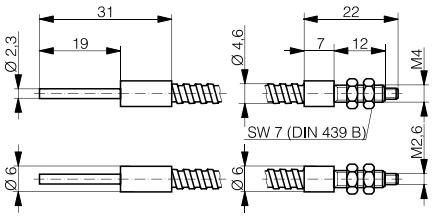
Dimensions: *light emission on the right*

for series 3030 / 3031 sensors (connection as with synthetic fibers)

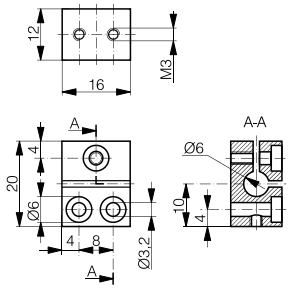
Housing size: M6	Diffuse sensing	
Part reference	LFG-1022-050	
Sensing range	with series 3030	120 mm
	with series 3031	60 mm
Special characteristics	For difficult environmental conditions	
Sleeve	Wound sleeve of chrome-plated brass, ∅ 4.6 mm	
Min. bending radius	25 mm	
Max. tensile load	20 N	



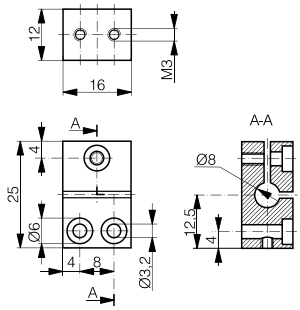
Housing size: M4	Through-beam sensing	
Part reference	LFG-3022-050	
Sensing range	with series 3030	500 mm
	with series 3031	250 mm
Special characteristics	For difficult environmental conditions	
Sleeve	Wound sleeve of chrome-plated brass, ∅ 4.6 mm	
Min. bending radius	25 mm	
Max. tensile load	20 N	



ACCESSORIES



For ∅ 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-3010-### / LFG-4010-###



For ∅ 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-###


DW-AD-703-C23
Sn 7 mm
PNP NO
IO-Link
DW-AS-612