

SSF Series Fiber Photoelectric Amplifiers



M18 (18mm) plastic with Teach function - DC

- Sensitivity adjustment using Teach button
- NPN or PNP, Light-on/Dark-on selectable outputs
- Red LED with visible spot
- IP67 rated



SSF Series Fiber Photoelectric Amplifier Selection Chart

Part Number	Price	Sensing Range	Output State	Logic	Connection	Wiring	Dimensions
SSF-0N-0A	\$53.00	Optical fiber dependent	N.O./N.C. selectable	NPN	2m [6.5 ft] axial cable	Diagram 1	Figure 1
SSF-0N-0E	\$53.00				M12 [12mm] connector		Figure 2
SSF-0P-0A	\$53.00			PNP	2m [6.5 ft] axial cable	Diagram 2	Figure 1
SSF-0P-0E	\$53.00				M12 [12mm] connector		Figure 2

Specifications

Type	SSF-0N-0*	SSF-0P-0*
Sensing Distance	See Optical Fibers Table	
Light Spot Diameter	N/A	
Emission	Red LED	
Sensitivity	Teach button	
Output Type	NPN Light-on or Dark-on Selectable	PNP Light-on or Dark-on Selectable
Operating Voltage	10-30VDC	
No-load Supply Current	≤20mA	
Load Current	≤100mA	
Leakage Current	≤10μA	
Voltage Drop	2V maximum	
Switching Frequency	800Hz	
Ripple	≤10%	
Time Delay Before Availability (tv)	150ms	
Short-Circuit Protection	Yes (switch auto-resets after overload is removed)	
Temperature	-25 to 70°C [-13 to 158°F]	
Protection Degree	IP67	
LED Output Indicator	Yellow (output energized)	
Housing Material	PBT	
Lens Materials	Acrylic	
Shock/Vibration	See terminology section	
Tightening Torque	40 Nm [29 lb-ft]	
Weight (cable/connector)	100g [3.53oz]	
Connectors	2m [6.5 ft] axial cable; M12 [12mm] connector	
Agency Approvals	CE	

To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

Dimensions

(mm)

Figure 1

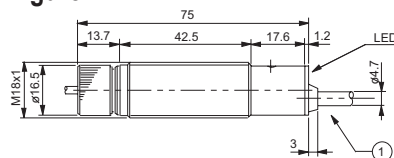
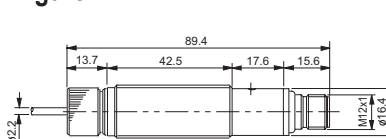


Figure 2



Wiring Diagrams

Diagram 1

NPN Output

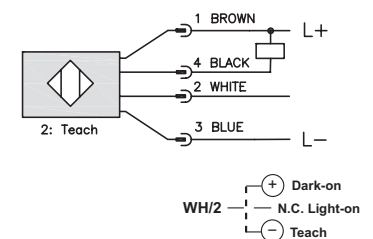
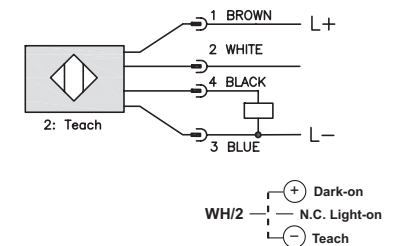


Diagram 2

PNP Output



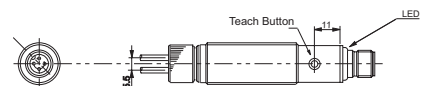
Connector

M12 Connector



Switching Element Function

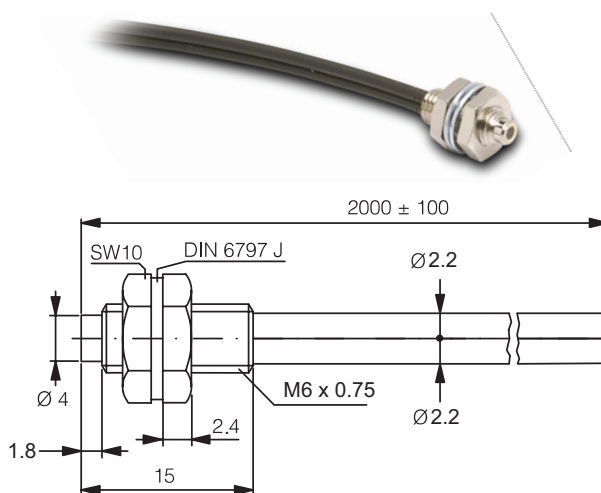
	Through-beam and Reflective Models	Diffuse Reflective Models
Light-on	N.C.	N.O.
Dark-on	N.O.	N.C.



Cuttable Optical Fibers (2.2 mm Diameter)

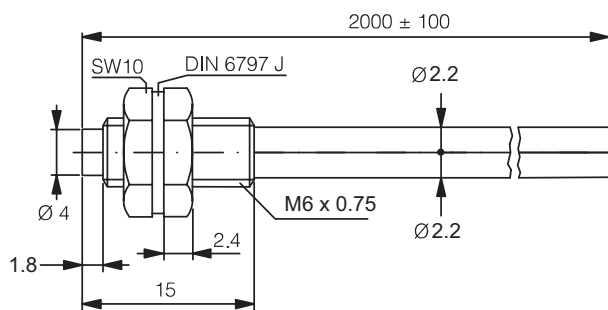
CF-DB1-20 diffuse reflection

CF-DB1-20 Specifications	
Part Number	CF-DB1-20
Price	\$39.50
Optical Fiber Core Ø	1 mm [0.039 in]
Sensing Distance with DFT and DFP series	200mm [7.87in]
Fiber Length (L)	2.0 m [78.74 in]
Fiber Bending Radius	25mm [0.98 in]
Free Cut	Yes
Head Size	M6
Thread Pitch	0.75 mm
Protection Degree	IEC IP67
Agency Approvals	UL file 328811
Temperature Range	-25 to 70°C [-13 to 158°F]
Fiber Materials	PMMA
Sleeve Materials	Polyethylene
Head Materials	Nickel-plated brass



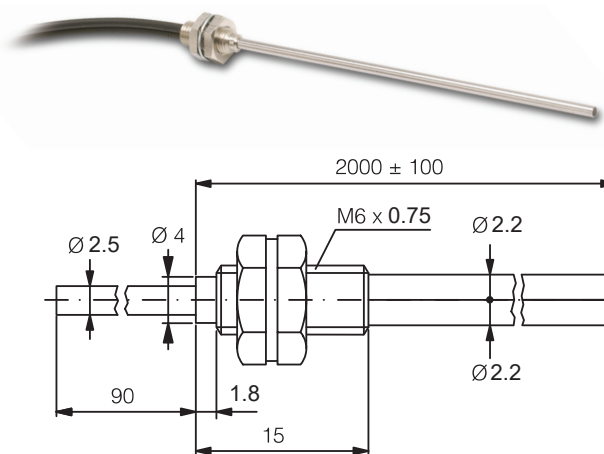
CF-DB2-20 diffuse reflection

CF-DB2-20 Specifications	
Part Number	CF-DB2-20
Price	\$58.00
Optical Fiber Core Ø	1.5 mm [0.06 in]
Sensing Distance with DFT and DFP Series	260mm [10.23 in]
Fiber Length (L)	2.0 m [78.74 in]
Fiber Bending Radius	40mm [1.57 in]
Free Cut	Yes
Head Size	M6
Thread Pitch	0.75 mm
Protection Degree	IEC IP67
Agency Approvals	UL file 328811
Temperature Range	-25 to 70°C [-13 to 158°F]
Fiber Materials	PMMA
Sleeve Materials	Polyethylene
Head Materials	Nickel-plated brass



CF-DB3-20 diffuse reflection

CF-DB3-20 Specifications	
Part Number	CF-DB3-20
Price	\$63.00
Optical Fiber Core Ø	1 mm [0.039 in]
Sensing Distance with DFT and DFP Series	200 mm [7.87 in]
Fiber Length (L)	2.0 m [78.74 in]
Fiber Bending Radius	25 mm [0.98 in]
Bendable light-outlet tube	Yes, 25mm [0.98 in] radius
Free Cut	Yes
Head Size	M6
Thread Pitch	0.75 mm
Protection Degree	IEC IP67
Agency Approvals	UL file 328811
Temperature Range	-25 to 70°C [-13 to 158°F]
Fiber Materials	PMMA
Sleeve Materials	Polyethylene
Head Materials	Nickel-plated brass

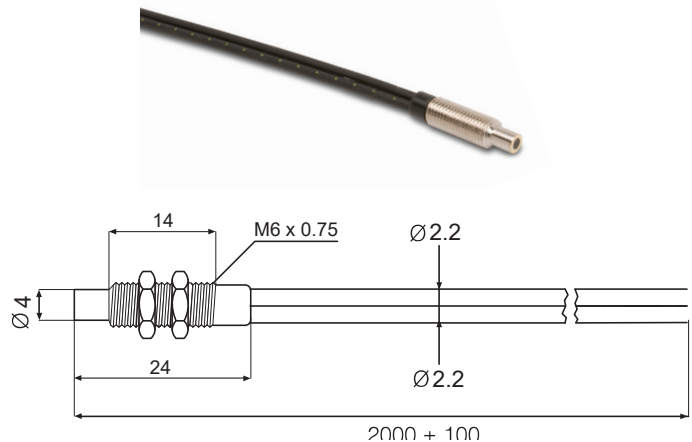


Cuttable Optical Fibers (2.2 mm Diameter)

CF-CB1-20 diffuse reflection

CF-CB1-20 Specifications

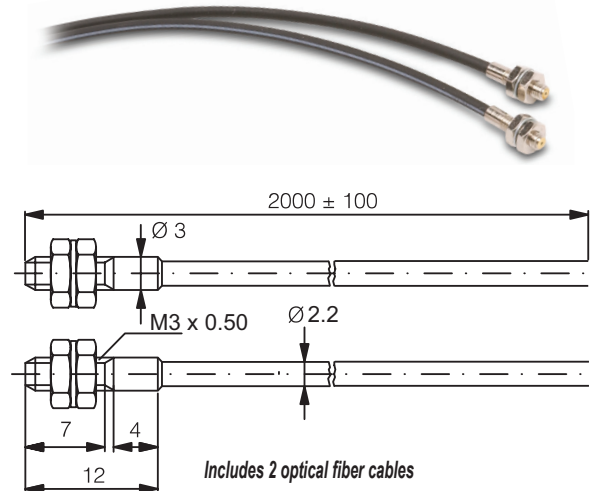
Part Number	CF-CB1-20
Price	\$29.00
Optical Fiber Core Ø	1mm [0.039 in]
Sensing Distance with SSF Series	50mm [1.97 in]
Fiber Length (L)	2.0 m [78.74 in]
Fiber Bending Radius	25mm [0.98 in]
Free Cut	Yes
Head Size	M6
Thread Pitch	0.75 mm
Protection Degree	IEC IP67
Temperature Range	-40 to 70°C [-40 to 158°F]
Fiber Materials	PMMA
Sleeve Materials	Polyethylene
Head Materials	Nickel-plated brass



CF-TB1-20 through-beam

CF-TB1-20 Specifications

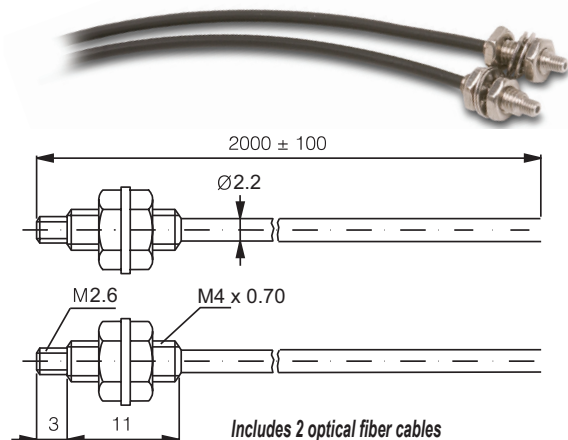
Part Number	CF-TB1-20
Price	\$39.50
Optical Fiber Core Ø	0.5 mm [0.02 in]
Sensing Distance with DFT and DFP Series	200mm [7.87 in]
Fiber Length (L)	2.0 m [78.74 in] ea. piece
Fiber Bending Radius	25mm [0.98 in]
Free Cut	Yes
Head Size	M3
Thread Pitch	0.5 mm
Protection Degree	IEC IP67
Agency Approvals	UL file 328811
Temperature Range	-25 to 70°C [-13 to 158°F]
Fiber Materials	PMMA
Sleeve Materials	Polyethylene
Head Materials	Nickel-plated brass



CF-TB2-20 through-beam

CF-TB2-20

Part Number	CF-TB2-20
Price	\$39.50
Optical Fiber Core Ø	1mm [0.039 in]
Sensing Distance with DFT and DFP Series	700mm [27.56 in]
Fiber Length (L)	2.0 m [78.74 in] ea. piece
Fiber Bending Radius	25mm [0.98 in]
Free Cut	Yes
Head Size	M4
Thread Pitch	0.7 mm
Protection Degree	IEC IP67
Agency Approvals	UL file E328811
Temperature Range	-25 to 70°C [-13 to 158°F]
Fiber Materials	PMMA
Sleeve Materials	Polyethylene
Head Materials	Nickel-plated brass

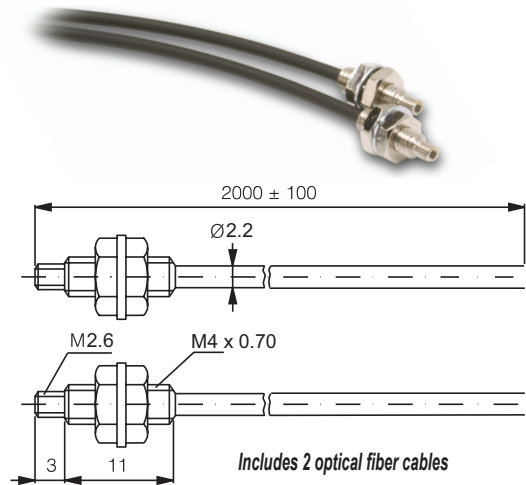


Cuttable Optical Fibers (2.2 mm Diameter)

CF-TB3-20 through-beam

CF-TB3-20 Specifications

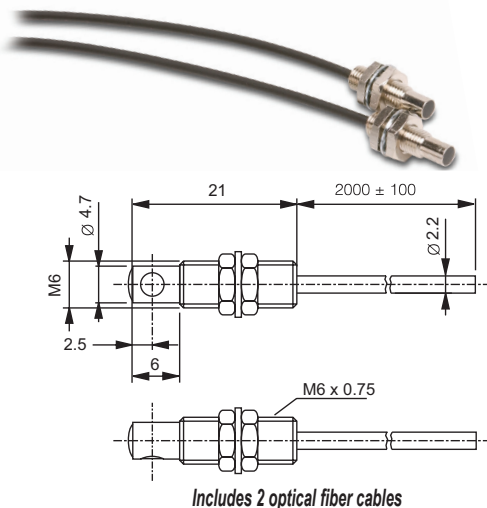
Part Number	CF-TB3-20
Price	\$63.00
Optical Fiber Core Ø	1.5 mm [0.06 in]
Sensing Distance with DFT and DFP Series	900mm [35.43 in]
Fiber Length (L)	2.0 m [78.74 in] ea. piece
Fiber Bending Radius	40mm [1.57 in]
Free Cut	Yes
Head Size	M4
Thread Pitch	0.7 mm
Protection Degree	IEC IP67
Agency Approvals	UL file E328811
Temperature Range	-25 to 70°C [-13 to 158°F]
Fiber Materials	PMMA
Sleeve Materials	Polyethylene
Head Materials	Nickel-plated brass



CF-TB4-20 90° through-beam

CF-TB4-20 Specifications

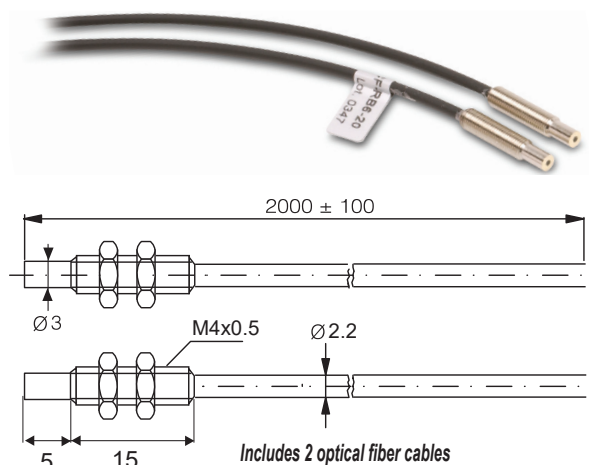
Part Number	CF-TB4-20
Price	\$79.00
Optical Fiber Core Ø	1.0 mm [0.039 in]
Sensing Distance with DFT and DFP Series	1800mm [70.87 in]
Fiber Length (L)	2.0 m [78.74 in] ea. piece
Fiber Bending Radius	25mm [0.98 in]
Free Cut	Yes
Head Size	M6
Thread Pitch	0.75 mm
Protection Degree	IEC IP67
Agency Approvals	UL file E328811
Temperature Range	-25 to 70°C [-13 to 158°F]
Fiber Materials	PMMA
Sleeve Materials	Polyethylene
Head Materials	Nickel-plated brass



CF-RB6-20 through beam

CF-RB6-20 Specifications

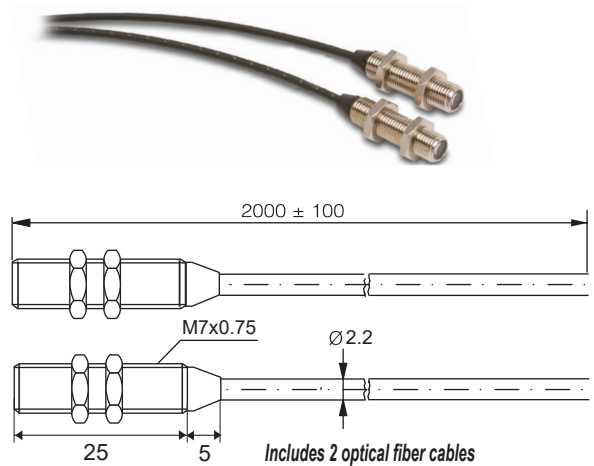
Part Number	CF-RB6-20
Price	\$29.00
Optical Fiber Core Ø	1.0 mm [0.039 in]
Sensing Distance with SSF Series	120mm [4.72 in]
Fiber Length (L)	2.0 m [78.74 in] ea. piece
Fiber Bending Radius	25mm [0.98 in]
Free Cut	Yes
Head Size	M4
Thread Pitch	0.50 mm
Protection Degree	IEC IP67
Temperature Range	-40 to 70°C [-40 to 158°F]
Fiber Materials	PMMA
Sleeve Materials	Polyethylene
Head Materials	Nickel-plated brass



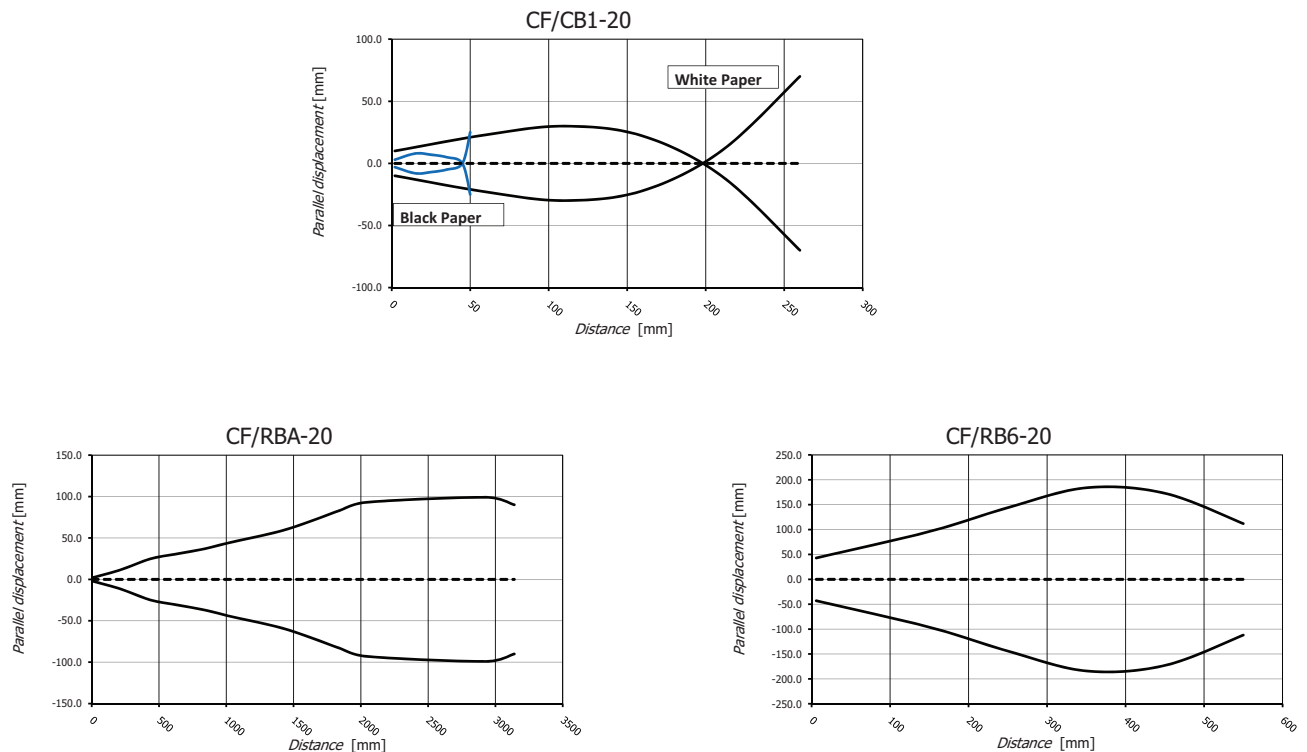
Cuttable Optical Fibers (2.2 mm Diameter)

CF-RBA-20 through-beam with lenses

CF-RBA-20 Specifications	
Part Number	CF-RBA-20
Price	\$50.00
Optical Fiber Core Ø	1.0 mm [0.039 in]
Sensing Distance with SSF series	1200mm [47.24 in]
Fiber Length (L)	2.0 m [78.74 in] ea. piece
Fiber Bending Radius	25mm [0.98 in]
Free Cut	Yes
Head Size	M7
Thread Pitch	0.75 mm
Protection Degree	IEC IP67
Temperature Range	-40 to 70°C [-40 to 158°F]
Fiber Materials	PMMA
Sleeve Materials	Polyethylene
Head Materials	Nickel-plated brass



Characteristic Curves



Accessories for 18mm Sensors

Right-angle Mounting Brackets

Mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors. Available with or without fixed insertion stop.

Accessories for 18mm Sensors				
Part Number	Price	Description	Drawing Link	Weight lb [g]
OPT2104	\$10.50	Wenglor mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors.	PDF	0.06 [27.2]
OPT2105	\$10.50	Wenglor mounting bracket, right-angle, plastic. For use with 18mm sensors.	PDF	0.06 [27.2]



[OPT2104](#), [OPT2105](#)

Right-angle Swivel Mounting Systems

Mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 12mm rod mount. For use with 18mm sensors. Available in all 304 stainless steel or with an aluminum head and a stainless steel mounting plate.

Accessories for 18mm Sensors						
Part Number	Price	Description	Mounting Head	Mounting Plate	Drawing Link	Weight lb [g]
OPT2116	\$11.50	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with 18mm sensors.	Aluminum	304 Stainless steel	PDF	0.15 [68.0]
OPT2117	\$21.00	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 304 stainless steel, 12mm rod mount. For use with 18mm sensors.	304 Stainless steel	304 Stainless steel	PDF	0.28 [127.0]



[OPT2116](#), [OPT2117](#)

Note: 304 Stainless steel mounting rods sold separately: [OPT2109](#) (200mm [7.87 in] length), [OPT2110](#) (300mm [11.81 in] length), and [OPT2111](#) (500mm [19.69 in] length).

Mounting Rods and Brackets

Mounting Rods

304 Stainless steel rods for mounting swivel brackets [OPT2112](#) - [OPT2127](#). Available in three lengths: 200mm, 300mm, and 500mm. 12mm diameter.

Mounting Rods for OPT2112-2127 Swivel Mounting Brackets				
Part Number	Price	Description	Drawing Link	Weight lb (g)
OPT2109	\$13.00	Wenglor mounting rod, 12mm diameter, 200mm length, 304 stainless steel.	PDF	0.41 [185.97]
OPT2110	\$16.00	Wenglor mounting rod, 12mm diameter, 300mm length, 304 stainless steel.	PDF	0.60 [272.16]
OPT2111	\$21.00	Wenglor mounting rod, 12mm diameter, 500mm length, 304 stainless steel.	PDF	0.98 [444.52]



Right-angle Mounting Bracket

Mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods [OPT2109](#), [OPT2110](#) & [OPT2111](#).

Right-angle Mounting Brackets for 12mm Sensors				
Part Number	Price	Description	Drawing Link	Weight lb [g]
OPT2108	\$16.00	Wenglor mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.	PDF	0.07 [31.8]

