

OPT Series Fiber Photoelectric Amplifiers

Features



- DIN-rail mounting
- Bargraph signal-strength indicator
- NPN or PNP, Push Pull, Light-on/Dark-on selectable outputs
- Red LED with visible spot
- IO-Link available on select units
- IP50/IP65 rated
- Key potentiometer, teach-in
- Large detection and working range
- Recognition of transparent objects
- Diffuse and Through-Beam operation mode are possible.



OPT Series Fiber Photoelectric Amplifier Selection Chart

Part Number	Price	Sensing Range	Output State	Logic	Connection	Fiber Channel	Wiring	Dimensions
OPT2040	\$101.00	Optical fiber dependent	N.O. / N.C. selectable	NPN / PNP Push-Pull	4-pin M8 [8mm] quick-disconnect	1	Diagram 1	Figure 1
OPT2041	\$186.00			PNP Push-Pull			Diagram 2	Figure 2
OPT2042	\$384.00			NPN / NP Push- Pull	4-pin M12 and [2] 8-pin M12 quick-disconnect	3 (Expandable to 13)	Diagram 3	Figure 3
OPT2043*	\$153.00				N/A			

* [OPT2043](#) is an add-on module to [OPT2042](#) (not standalone)

Specifications

Type	OPT2040	OPT2041	OPT2042	OPT2043 (add-on module)
Sensing Distance	See optical fibers table			
Light Spot Diameter	N/A			
Emission	Red (660nm)			
Sensitivity	Teach Functions			
Output Type	Configurable N.C./N.O. PNP/NPN Push -Pull	Configurable PNP/Push-Pull	Configurable N.C./N.O. PNP/NPN Push-Pull	Output handled through OPT2042 Master
Operating Voltage	10 to 30VDC	18 to 30VDC		N/A
No-Load Supply Current	< 40mA		<70mA	Add +10mA to OPT2042 per add on module to OPT2043
Operating (Load) Current	200mA	100mA	100mA	Refer to OPT2042
Off-state (Leakage) Current	> 0.1 ma			
Voltage Drop	< 2.5 VDC			
Switching Frequency	2kHz	4kHz	2kHz	
Ripple	< 15%			
Time Delay Before Availability (tv)	250μs	125μs	250μs	+70μs to 2042 per add on module to OPT2043
Short-Circuit Protection	Yes			
Operating Temperature	-25 to 60°C [-13 to 140°F]			
Protection Degree	IP65		IP50	
Led Indicators - Switching Status	Yellow LED	Via display window		
Housing Material	Plastic			
Lens Material	N/A			
IO-Link Version	N/A	1.0		
IO-Link Parameter	N/A	> 12		
Shock/Vibration	See Section			
Tightening Torque	N/A			
Weight	0.1 lbs	0.3 lbs	0.4 lbs	0.1 lbs
Connectors	M8 4-Pole		(1) M12 4-pole (2) M12 8-pole	This is an add-on unit that connects to master unit OPT2042
Agency Approvals	CE, cULus E189727			

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

OPT Series Fiber Photoelectric Amplifiers

Dimensions

mm [inches]

Figure 1

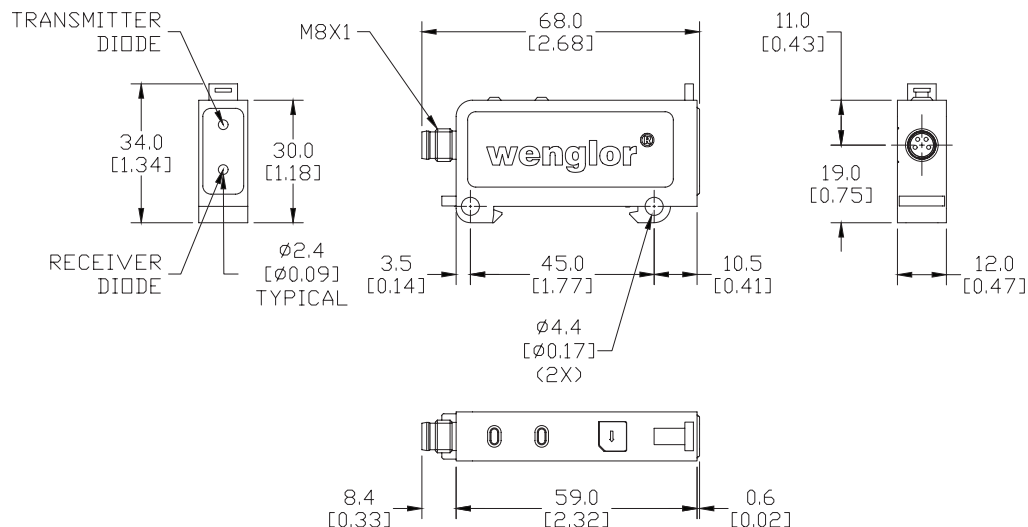
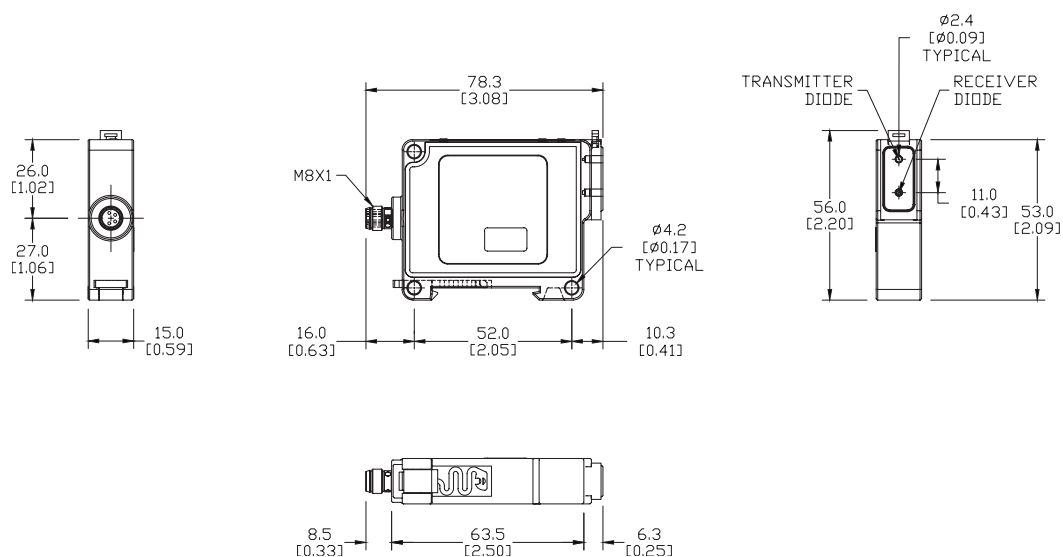


Figure 2



See our website: www.AutomationDirect.com for complete Engineering drawings.

mm [inches]

Technical drawings of the 2500 Series 100W Power Amplifier showing dimensions in mm and inches.

Top View Dimensions:

- Overall width: 25.0 [0.98]
- Overall height: 53.0 [2.09]
- Distance from top edge to top mounting hole center: 15.5 [0.61]
- Distance from bottom edge to bottom mounting hole center: 17.5 [0.69]
- Distance from left edge to left mounting hole center: 12.0 [0.47]
- Distance from right edge to right mounting hole center: 12.0 [0.47]

Side View Dimensions:

- Overall height: 4.0 [0.16]
- Distance from top edge to bottom mounting hole center: 52.0 [2.05]
- Distance from bottom edge to bottom mounting hole center: 4.0 [0.16]

Front View Dimensions:

- Overall width: 50.1 [1.97]
- Overall height: 80.6 [3.17]
- Distance from top edge to top mounting hole center: 6.3 [0.25]
- Distance from bottom edge to bottom mounting hole center: 14.3 [0.56]
- Distance from left edge to left mounting hole center: 6.0 [0.236]
- Distance from right edge to right mounting hole center: 6.0 [0.236]
- Mounting hole diameter: $\varnothing 4.2$ [$\varnothing 0.17$] (3X)

Internal Component Dimensions:

- Distance from top edge to top mounting hole center: 56.0 [2.20]
- Distance from bottom edge to bottom mounting hole center: 11.0 [0.43]
- Overall width: 51.0 [2.01]
- Labels: RECEIVER DIODE, TRANSMITTER DIODE

[illegible]

OPT Series Fiber Photoelectric Amplifiers

Wiring Diagrams

Diagram 1

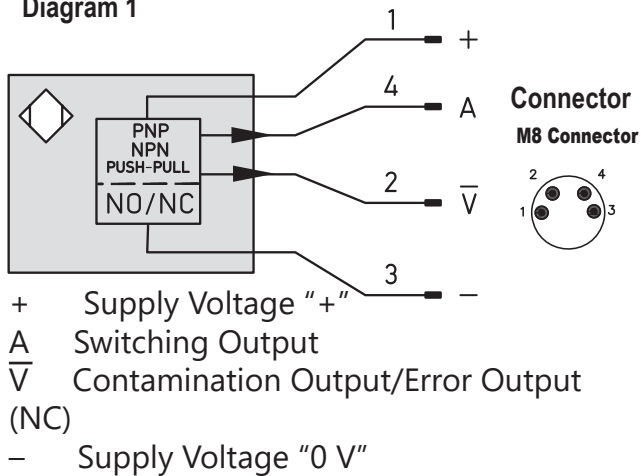


Diagram 2

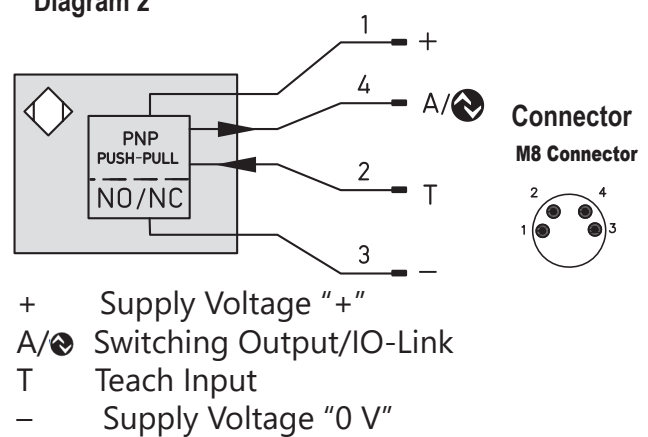
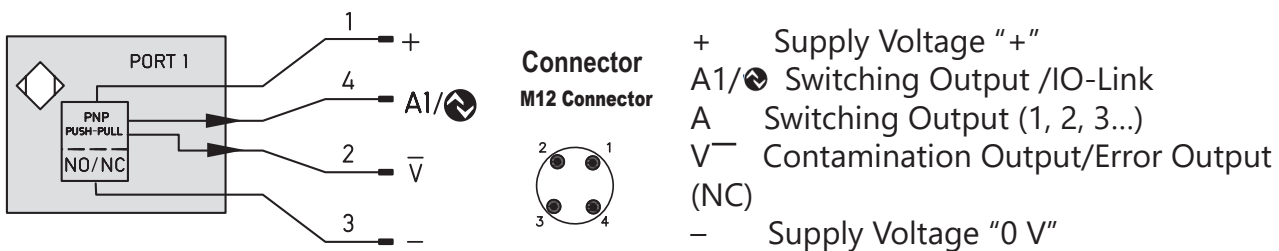
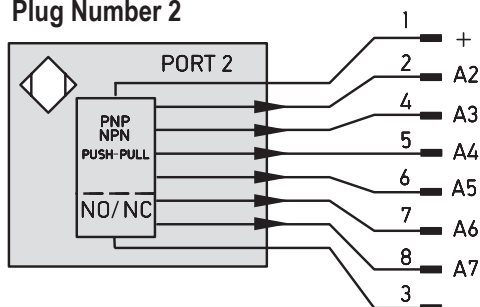


Diagram 3

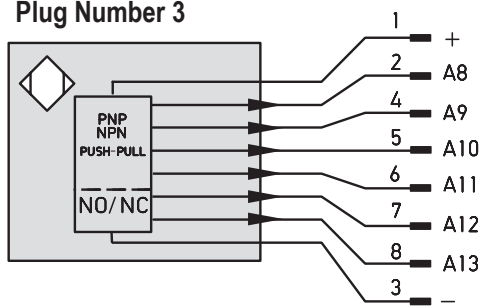
Plug Number 1



Plug Number 2



Plug Number 3



Cuttable Fiber Optic Cable

OPT2050 Diffuse Reflex Mode

OPT2050 Specifications

Part Number	OPT2050
Price	\$48.00
Drawing Link	PDF
Optical Fiber Core Ø	0.5 mm
Sensing Distance with OPT series	60mm
Fiber Length (L)	2m
Fiber Bending Radius	15mm
Free Cut	Yes
Head Size	M3
Thread Pitch	0.5
Temperature Range	-40 to 85°C [-40 to 185°F]
Fiber Materials	PMMA
Sleeve Materials	PE (black)
Head Materials	Stainless steel
Fiber Distribution	Parallel arrangement
Opening Angle	55 degrees
Diameter Jacket	1mm
Light Emission	Straight



Cuttable Fiber Optic Cable

[OPT2052 Diffuse \(Reflex\) Mode](#)

OPT2052 Specifications	
Part Number	OPT2052
Price	\$60.00
Drawing Link	PDF
Optical Fiber Core Ø	0.5 mm
Sensing Distance with OPT series	60mm
Fiber Length (L)	2m
Fiber Bending Radius	15mm
Free Cut	Yes
Head Size	3mm
Thread Pitch	NA
Temperature Range	-40 to 85°C [-40 to 185°F]
Fiber Materials	PMMA
Sleeve Materials	PE (black)
Head Materials	Stainless steel
Fiber Distribution	Coaxial arrangement
Opening Angle	55 degrees
Diameter Jacket	1.3 mm
Light Emission	Straight



[OPT2053 Diffuse \(Reflex\) Mode](#)

OPT2053 Specifications	
Part Number	OPT2053
Price	\$60.00
Drawing Link	PDF
Optical Fiber Core Ø	0.5 mm
Sensing Distance with OPT series	60mm
Fiber Length (L)	2m
Fiber Bending Radius	15mm
Free Cut	Yes
Head Size	M3
Thread Pitch	0.5
Temperature Range	-40 to 85°C [-40 to 185°F]
Fiber Materials	PMMA
Sleeve Materials	PE (black)
Head Materials	Stainless steel
Fiber Distribution	Coaxial arrangement
Opening Angle	55 degrees
Diameter Jacket	1.3 mm
Light Emission	Straight



Cuttable Fiber Optic Cable

OPT2054 Diffuse (Reflex) Mode

OPT2054 Specifications	
Part Number	OPT2054
Price	\$48.00
Drawing Link	PDF
Optical Fiber Core Ø	1mm
Sensing Distance with OPT series	160mm
Fiber Length (L)	2m
Fiber Bending Radius	30mm
Free Cut	Yes
Head Size	M6
Thread Pitch	0.75
Temperature Range	-40 to 85°C [-40 to 185°F]
Fiber Materials	PMMA
Sleeve Materials	PE (black)
Head Materials	Nickel-plated brass
Fiber Distribution	Parallel arrangement
Opening Angle	55 degrees
Diameter Jacket	2.2 mm
Light Emission	Straight



OPT2055 Diffuse (Reflex) Mode

OPT2055 Specifications	
Part Number	OPT2055
Price	\$98.00
Drawing Link	PDF
Optical Fiber Core Ø	1mm
Sensing Distance with OPT series	60mm
Fiber Length (L)	2m
Fiber Bending Radius	30mm
Free Cut	Yes
Head Size	M6
Thread Pitch	0.75
Temperature Range	-40 to 85°C [-40 to 185°F]
Fiber Materials	PMMA
Sleeve Materials	PE (black)
Head Materials	Nickel-plated brass
Fiber Distribution	Parallel arrangement
Opening Angle	55 degrees
Diameter Jacket	2.2 mm
Light Emission	Straight



* 2000.0 mm maximum extended coil length.

Cuttable Fiber Optic Cable

[OPT2056](#) Diffuse (Reflex) Mode

OPT2056 Specifications	
Part Number	OPT2056
Price	\$55.00
Drawing Link	PDF
Optical Fiber Core Ø	1mm
Sensing Distance with OPT series	160mm
Fiber Length (L)	2m
Fiber Bending Radius	30mm
Free Cut	Yes
Head Size	M6
Thread Pitch	0.75
Temperature Range	-40 to 85°C [-40 to 185°F]
Fiber Materials	PMMA
Sleeve Materials	PE (black)
Head Materials	Stainless steel
Fiber Distribution	Parallel arrangement
Opening Angle	55 degrees
Diameter Jacket	2.2 mm
Light Emission	Straight
Flexible Endpot	Yes



Flexible endpot is not for continuous flexing applications.

Cuttable Fiber Optic Cable

OPT2059 Diffuse (Reflex) Mode

OPT2059 Specifications	
Part Number	OPT2059
Price	\$122.00
Drawing Link	PDF
Optical Fiber Core Ø	1mm
Sensing Distance with OPT series	160mm
Fiber Length (L)	2m
Fiber Bending Radius	20mm
Free Cut	Yes
Head Size	12mm flat
Thread Pitch	NA
Temperature Range	-40 to 85°C [-40 to 185°F]
Fiber Materials	PMMA
Sleeve Materials	PE (black)
Head Materials	Aluminum
Fiber Distribution	Parallel arrangement
Opening Angle	55 degrees
Diameter Jacket	2.2 mm
Light Emission	Straight



Cuttable Fiber Optic Cable

OPT2060 Diffuse (Reflex) Mode

OPT2060 Specifications	
Part Number	OPT2060
Price	\$122.00
Drawing Link	PDF
Optical Fiber Core Ø	1mm
Sensing Distance with OPT series	50mm
Fiber Length (L)	2m
Fiber Bending Radius	20mm
Free Cut	Yes
Head Size	12mm flat
Thread Pitch	NA
Temperature Range	-40 to 85°C [-40 to 185°F]
Fiber Materials	PMMA
Sleeve Materials	PE (black)
Head Materials	Aluminum
Fiber Distribution	Parallel arrangement
Opening Angle	55 degrees
Diameter Jacket	2.2 mm
Light Emission	Sidewise



OPT2061 Diffuse (Reflex) Mode

OPT2061 Specifications	
Part Number	OPT2061
Price	\$122.00
Drawing Link	PDF
Optical Fiber Core Ø	1mm
Sensing Distance with OPT series	70mm
Fiber Length (L)	2m
Fiber Bending Radius	50mm
Free Cut	Yes
Head Size	M4
Thread Pitch	0.7
Temperature Range	-40 to 85°C [-40 to 185°F]
Fiber Materials	PMMA
Sleeve Materials	PE (black)
Head Materials	Stainless steel
Fiber Distribution	Parallel arrangement
Opening Angle	55 degrees
Diameter Jacket	2.2 mm
Light Emission	Sidewise



Cuttable Fiber Optic Cable

OPT2062 Diffuse (Reflex) Mode

OPT2062 Specifications

Part Number	OPT2062
Price	\$122.00
Drawing Link	PDF
Optical Fiber Core Ø	1mm
Sensing Distance with OPT series	50mm
Fiber Length (L)	2m
Fiber Bending Radius	20mm
Free Cut	Yes
Head Size	5mm
Thread Pitch	NA
Temperature Range	-40 to 85°C [-40 to 185°F]
Fiber Materials	PMMA
Sleeve Materials	PE (black)
Head Materials	Stainless steel
Fiber Distribution	Parallel arrangement
Opening Angle	55 degrees
Diameter Jacket	2.2 mm
Light Emission	Sidewise



OPT2063 Diffuse (Reflex) Mode

OPT2063 Specifications

Part Number	OPT2063
Price	\$122.00
Drawing Link	PDF
Optical Fiber Core Ø	1mm
Sensing Distance with OPT series	90mm
Fiber Length (L)	2m
Fiber Bending Radius	20mm
Free Cut	Yes
Head Size	M6
Thread Pitch	0.75
Temperature Range	-40 to 85°C [-40 to 185°F]
Fiber Materials	PMMA
Sleeve Materials	PE (black)
Head Materials	Nickel-plated brass
Fiber Distribution	Parallel arrangement
Opening Angle	55 degrees
Diameter Jacket	2.2 mm
Light Emission	Straight



Cuttable Fiber Optic Cable

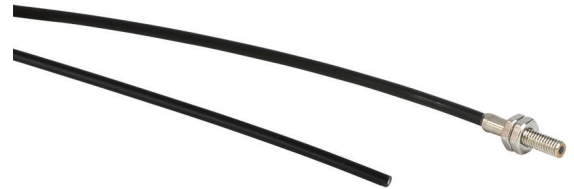
[OPT2064 Through-Beam Mode](#)

OPT2064 Specifications	
Part Number	OPT2064
Price	\$56.00
Drawing Link	PDF
Optical Fiber Core Ø	0.5 mm
Sensing Distance with OPT series	160mm
Fiber Length (L)	2m
Fiber Bending Radius	15mm
Free Cut	Yes
Head Size	M3
Thread Pitch	0.5
Temperature Range	-40 to 85°C [-40 to 185°F]
Fiber Materials	PMMA
Sleeve Materials	PE (black)
Head Materials	Stainless steel
Fiber Distribution	Parallel arrangement
Opening Angle	55 degrees
Diameter Jacket	1mm
Light Emission	Straight



[OPT2065 Through-Beam Mode](#)

OPT2065 Specifications	
Part Number	OPT2065
Price	\$48.00
Drawing Link	PDF
Optical Fiber Core Ø	1mm
Sensing Distance with OPT series	400mm
Fiber Length (L)	2m
Fiber Bending Radius	30mm
Free Cut	Yes
Head Size	M3
Thread Pitch	0.5
Temperature Range	-40 to 85°C [-40 to 185°F]
Fiber Materials	PMMA
Sleeve Materials	PE (black)
Head Materials	Nickel-plated brass
Fiber Distribution	Parallel arrangement
Opening Angle	55 degrees
Diameter Jacket	2.2 mm
Light Emission	Straight



* Packaging includes two of the above

Cuttable Fiber Optic Cable

OPT2070 Through-Beam Mode

OPT2070 Specifications	
Part Number	OPT2070
Price	\$122.00
Drawing Link	PDF
Optical Fiber Core Ø	1mm
Sensing Distance with OPT series	200mm
Fiber Length (L)	2m
Fiber Bending Radius	20mm
Free Cut	Yes
Head Size	NA
Thread Pitch	NA
Temperature Range	-40 to 85°C [-40 to 185°F]
Fiber Materials	PMMA
Sleeve Materials	PE (black)
Head Materials	Aluminum
Fiber Distribution	Parallel arrangement
Opening Angle	55 degrees
Diameter Jacket	2.2 mm
Light Emission	Sidewise



* Packaging includes two of the above.

OPT2071 Through-Beam Mode

OPT2071 Specifications	
Part Number	OPT2071
Price	\$122.00
Drawing Link	PDF
Optical Fiber Core Ø	1mm
Sensing Distance with OPT series	250mm
Fiber Length (L)	2m
Fiber Bending Radius	2mm
Free Cut	Yes
Head Size	M4
Thread Pitch	0.7
Temperature Range	-40 to 85°C [-40 to 185°F]
Fiber Materials	PMMA
Sleeve Materials	PE (black)
Head Materials	Stainless steel
Fiber Distribution	Parallel arrangement
Opening Angle	55 degrees
Diameter Jacket	2.2 mm
Light Emission	Sidewise



* Packaging includes two of the above.

Cuttable Fiber Optic Cable

OPT2074 Through-Beam Mode

OPT2074 Specifications	
Part Number	OPT2074
Price	\$41.00
Drawing Link	PDF
Optical Fiber Core Ø	1mm
Sensing Distance with OPT series	350mm
Fiber Length (L)	2m
Fiber Bending Radius	20mm
Free Cut	Yes
Head Size	M4
Thread Pitch	0.7
Temperature Range	-40 to 85°C [-40 to 185°F]
Fiber Materials	PMMA
Sleeve Materials	PE (black)
Head Materials	Stainless steel
Fiber Distribution	Parallel arrangement
Opening Angle	55 degrees
Diameter Jacket	2.2 mm
Light Emission	Straight

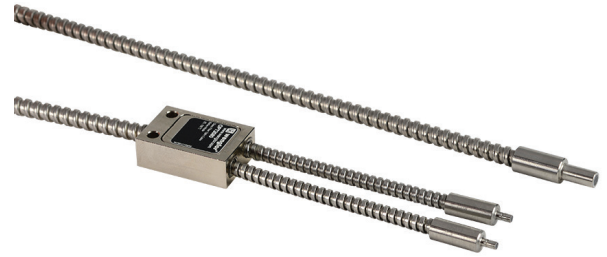


* Packaging includes two of the above.

Glass Fiber Optic Cable

[OPT2080 Diffuse \(Reflex\) Mode](#)

OPT2080 Specifications	
Part Number	OPT2080
Price	\$161.00
Drawing Link	PDF
Optical Fiber Core Ø	1.6 mm
Sensing Distance with OPT series	160mm
Fiber Length (L)	1m
Fiber Bending Radius	60mm
Free Cut	No
Head Size	5mm
Thread Pitch	NA
Temperature Range	-25 to 180°C [-13 to 365°F]
Fiber Materials	Glass
Sleeve Materials	Stainless steel
Head Materials	Stainless steel
Fiber Diameter	50µm
Fiber Distribution	Statistic mixture
Opening Angle	68 degrees
Light Emission	Straight



Glass Fiber Optic Cable

OPT2082 Diffuse (Reflex) Mode

OPT2082 Specifications	
Part Number	OPT2082
Price	\$149.00
Drawing Link	PDF
Optical Fiber Core Ø	1.6 mm
Sensing Distance with OPT series	160mm
Fiber Length (L)	1m
Fiber Bending Radius	50mm
Free Cut	No
Head Size	M6
Thread Pitch	1.0
Temperature Range	-25 to 180°C [-13 to 356°F]
Fiber Materials	Glass
Sleeve Materials	Nickel-plated brass
Head Materials	Aluminum
Fiber Diameter	50µm
Fiber Distribution	Separated bundles
Opening Angle	68 degrees
Light Emission	Straight



Glass Fiber Optic Cable

OPT2086 Through-Beam Mode

OPT2086 Specifications

Part Number	OPT2086
Price	\$142.00
Drawing Link	PDF
Optical Fiber Core Ø	1.6 mm
Sensing Distance with OPT series	480mm
Fiber Length (L)	1m
Fiber Bending Radius	45mm
Free Cut	No
Head Size	M5
Thread Pitch	0.8
Temperature Range	-25 to 180°C [-13 to 365°F]
Fiber Materials	Glass
Sleeve Materials	Nickel-plated brass
Head Materials	Aluminum
Fiber Diameter	50µm
Fiber Distribution	Parallel arrangement
Opening Angle	68 degrees
Light Emission	Straight



* Packaging includes two of the above.