

# OPT Series Fiber Photoelectric Amplifiers

## Description



- 4 models available
- 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 Thru 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	\$86.00	Optical fiber dependent	N.O. / N.C. selectable	NPN / PNP / Push Pull	4-pin M8 (8 mm) quick-disconnect	1	Diagram 1	Figure 1
OPT2041	\$157.00			PNP / Push Pull			Diagram 2	Figure 2
OPT2042	\$325.00			4-pin M12 and (2) 8-pin M12 quick-disconnect	3 (Expandable to 13)	Diagram 3	Figure 3	
OPT2043*	\$129.00			N/A		1	–	Figure 4



\* OPT2043 is an add-on module to OPT2042 (not standalone)

## Specifications

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

# OPT Series Fiber Photoelectric Amplifiers

## Dimensions

mm [inch]

Figure 1

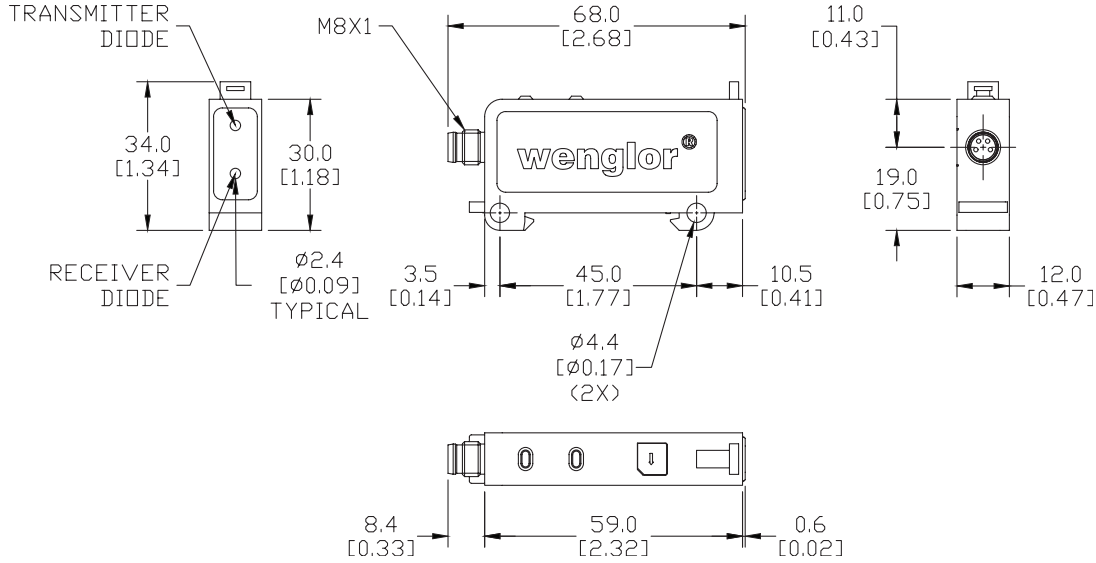
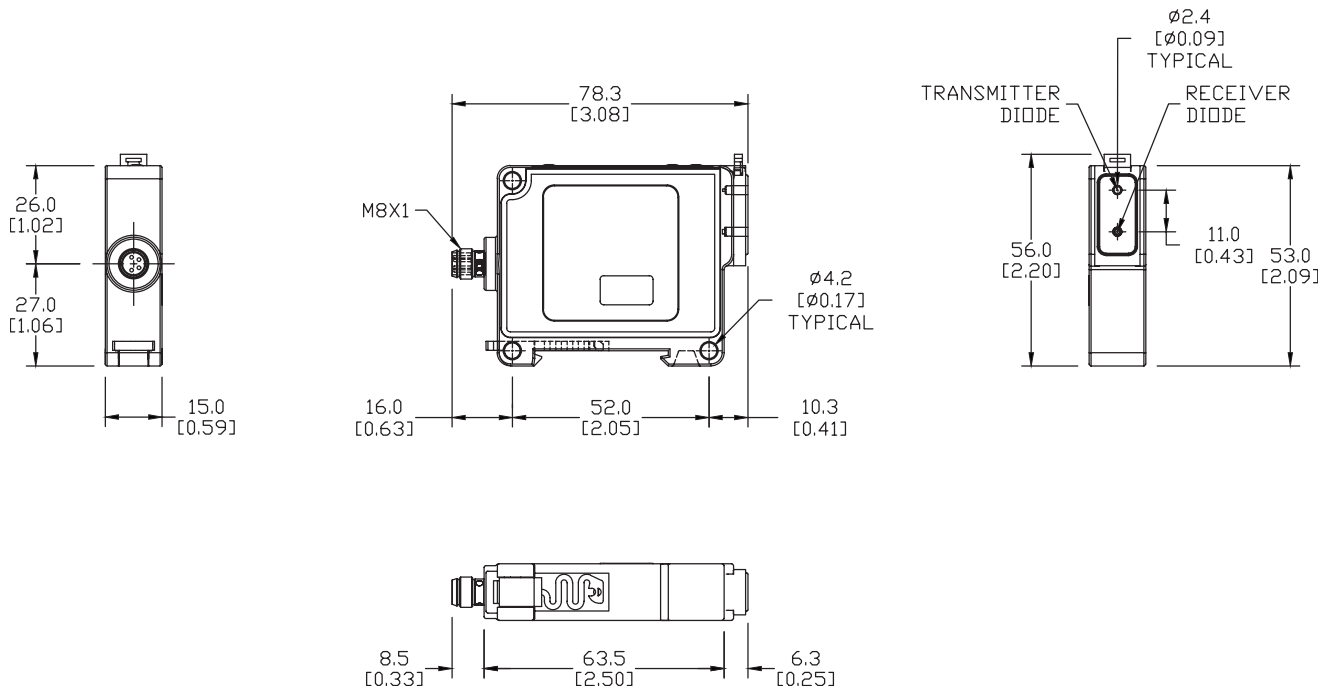


Figure 2



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# OPT Series Fiber Photoelectric Amplifiers

## Dimensions

mm [inch]

Figure 3

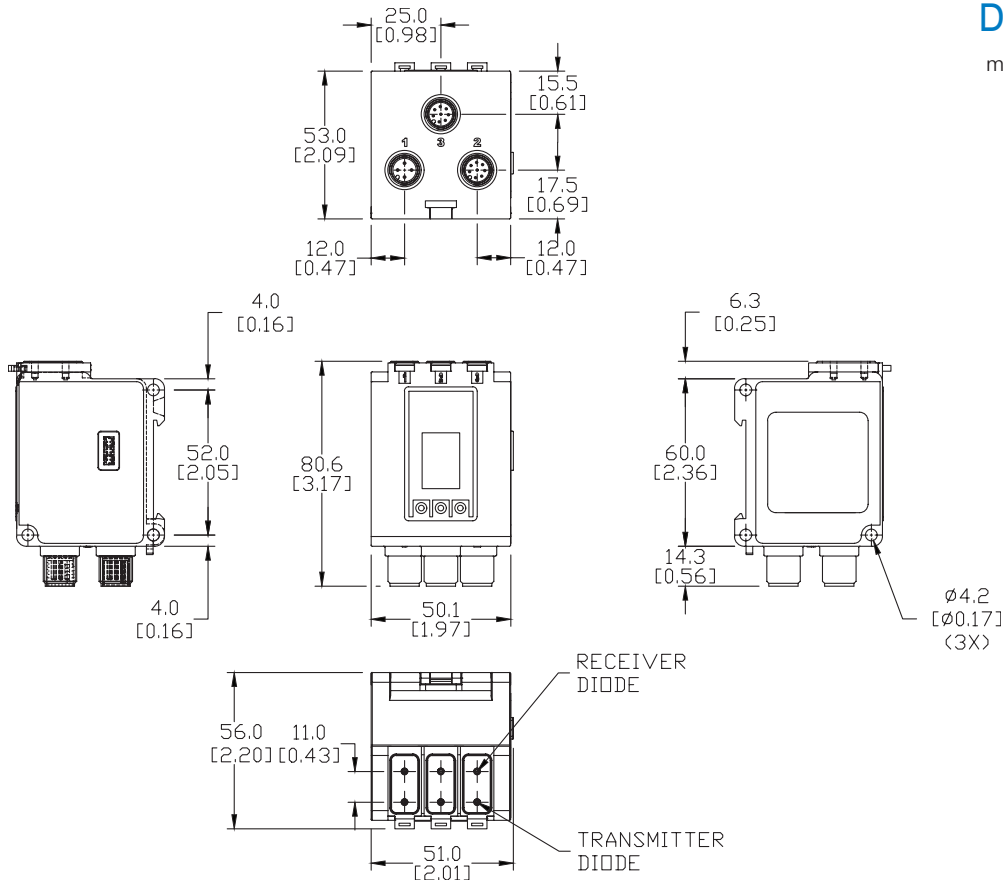
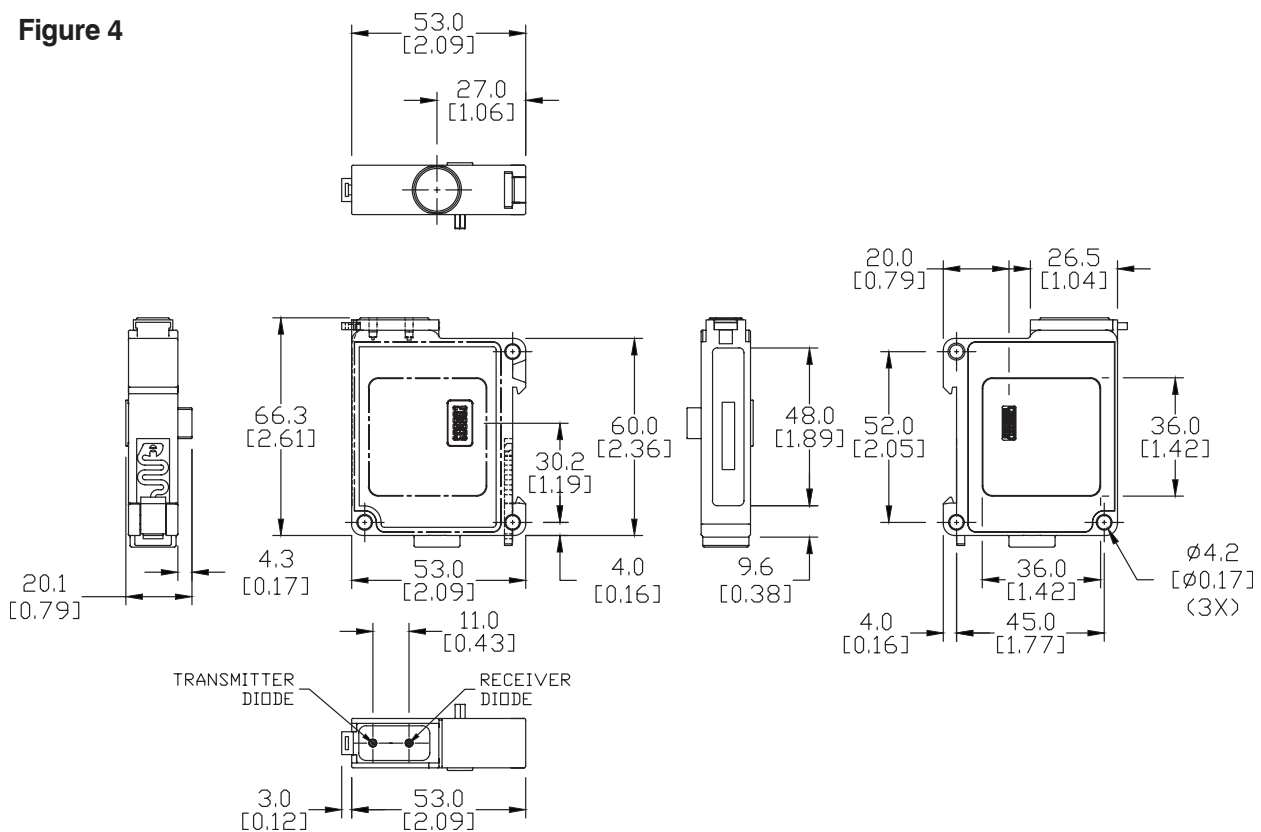


Figure 4

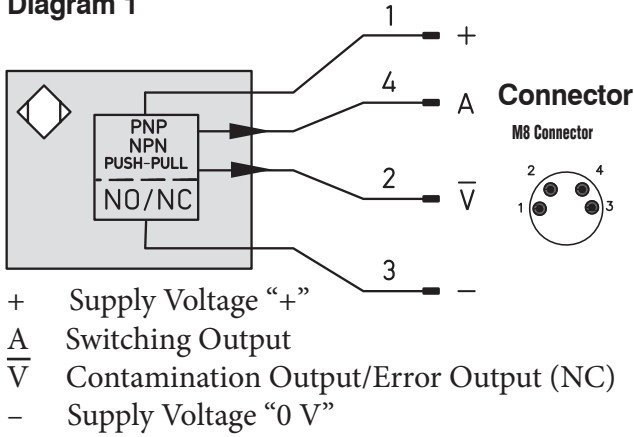


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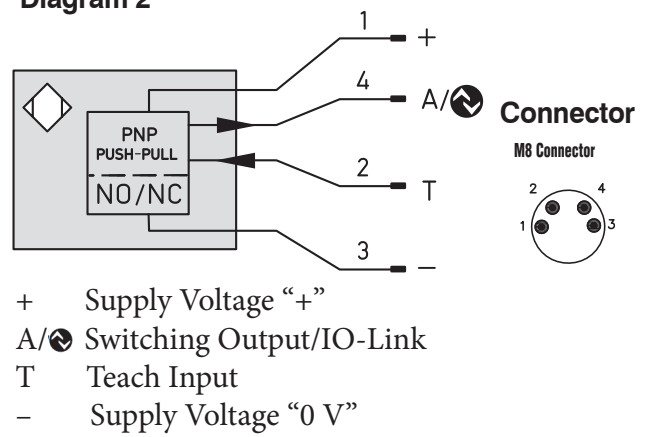
# OPT Series Fiber Photoelectric Amplifiers

## Wiring diagrams

**Diagram 1**

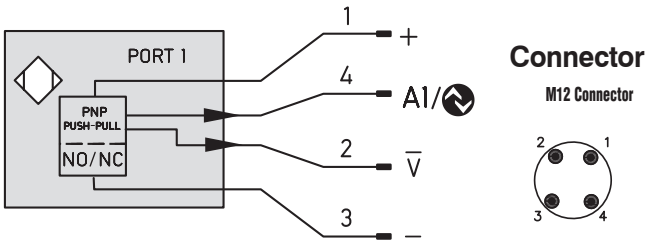


**Diagram 2**

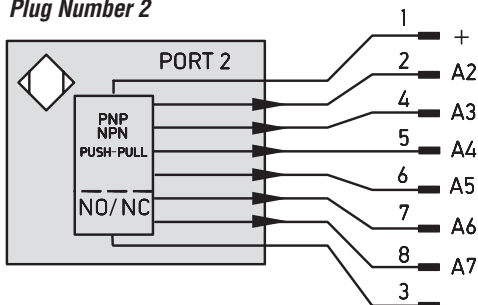


**Diagram 3**

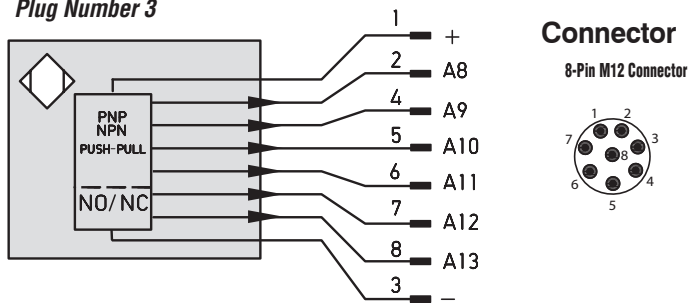
*Plug Number 1*



*Plug Number 2*



*Plug Number 3*



# Cuttable Fiber Optic Cable

OPT2050 Diffuse (Reflex) Mode

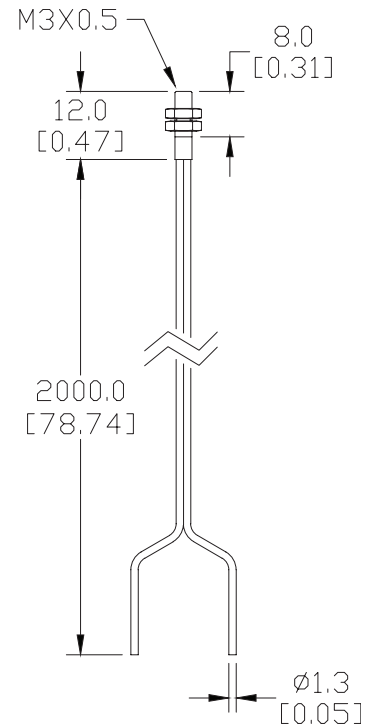
\$40.50

## Dimensions

mm [inch]



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



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# Cuttable Fiber Optic Cable

OPT2052 Diffuse (Reflex) Mode

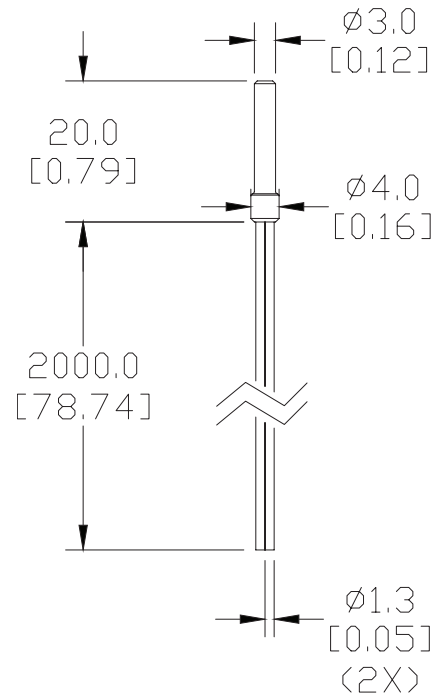
\$51.00



Specifications	
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

## Dimensions

mm [inch]



OPT2053 Diffuse (Reflex) Mode

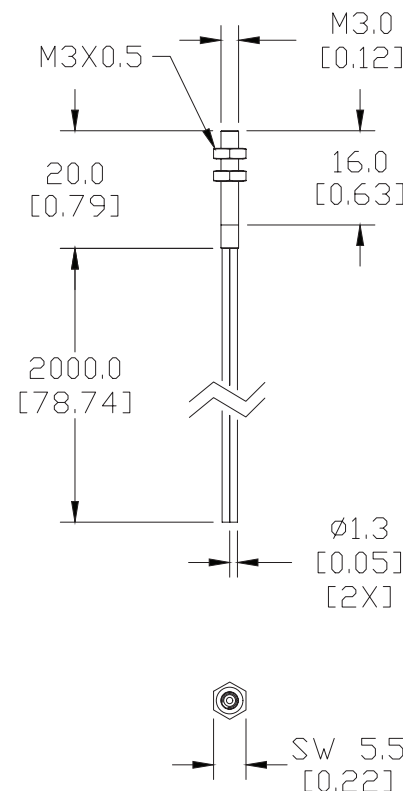
\$51.00



Specifications	
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

## Dimensions

mm [inch]



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# Cuttable Fiber Optic Cable

OPT2054 Diffuse (Reflex) Mode

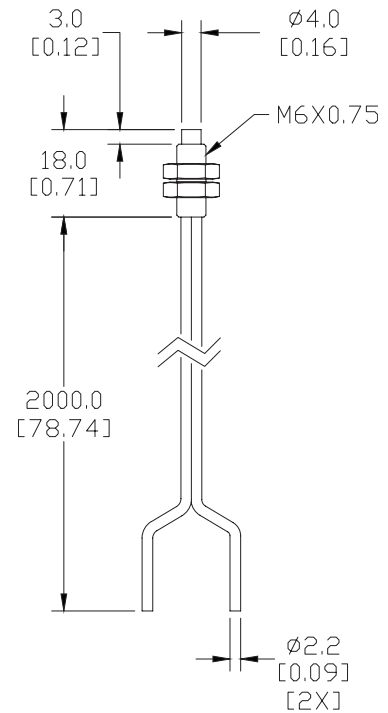
\$40.50



Specifications	
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

## Dimensions

mm [inch]



OPT2055 Diffuse (Reflex) Mode

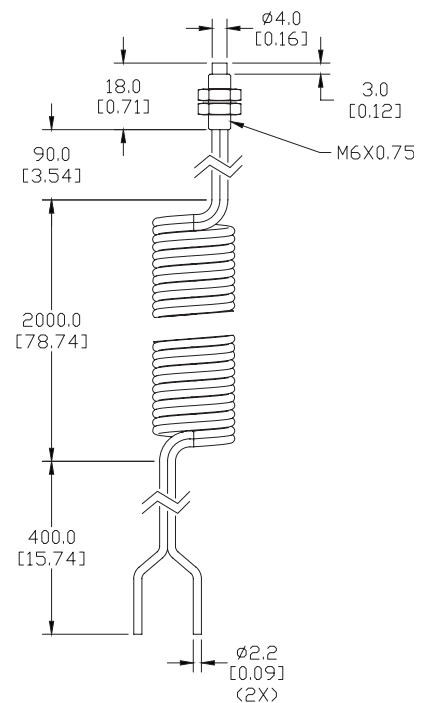
\$83.00



Specifications	
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

## Dimensions

mm [inch]



\* 2000.0 mm maximum extended coil length.

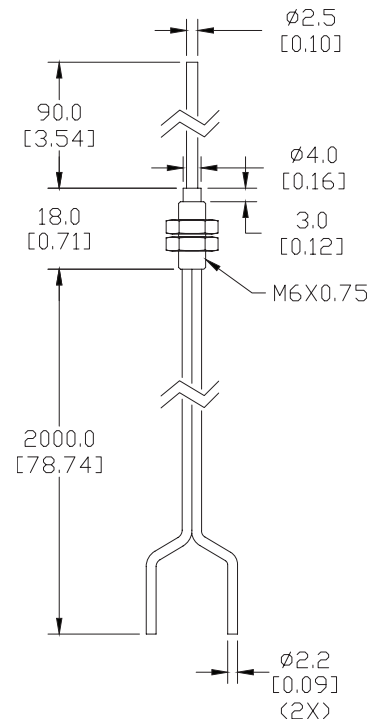
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# Cuttable Fiber Optic Cable

OPT2056 Diffuse (Reflex) Mode **\$46.50**



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



*Flexible endpot is not for continuous flexing applications.*



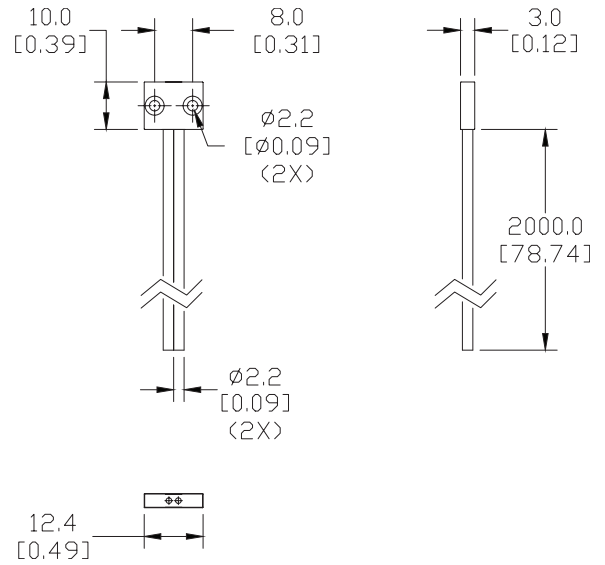
# Cuttable Fiber Optic Cable

OPT2059 Diffuse (Reflex) Mode

\$103.00

Dimensions

mm [inch]



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

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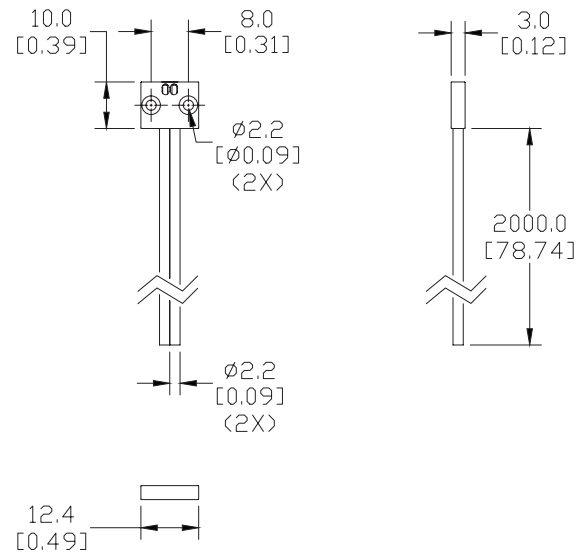
# Cuttable Fiber Optic Cable

**OPT2060 Diffuse (Reflex) Mode**      **\$103.00**



## Dimensions

mm [inch]



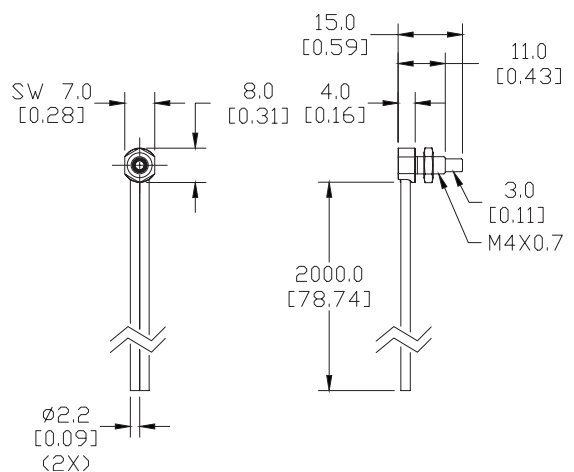
Specifications	
<b>Optical Fiber Core Ø</b>	1mm
<b>Sensing Distance with OPT series</b>	50mm
<b>Fiber Length (L)</b>	2m
<b>Fiber Bending Radius</b>	20mm
<b>Free Cut</b>	Yes
<b>Head Size</b>	12mm flat
<b>Thread Pitch</b>	NA
<b>Temperature Range</b>	-40 to 85°C [-40 to 185°F]
<b>Fiber Materials</b>	PMMA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

**OPT2061 Diffuse (Reflex) Mode**      **\$103.00**



## Dimensions

mm [inch]



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

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# Cuttable Fiber Optic Cable

OPT2062 Diffuse (Reflex) Mode

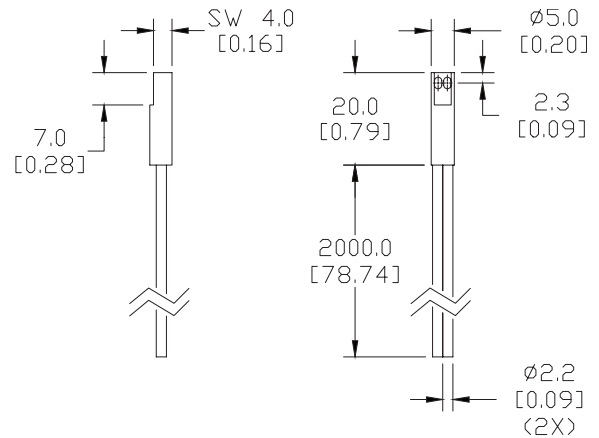
\$103.00

## Dimensions

mm [inch]



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



OPT2063 Diffuse (Reflex) Mode

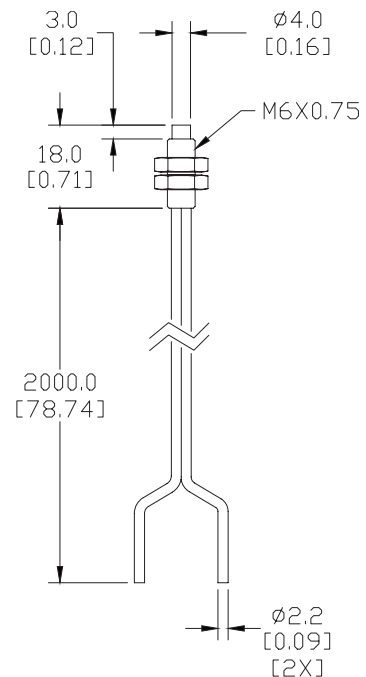
\$103.00

## Dimensions

mm [inch]



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



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# Cuttable Fiber Optic Cable

## OPT2064 Through-Beam Mode

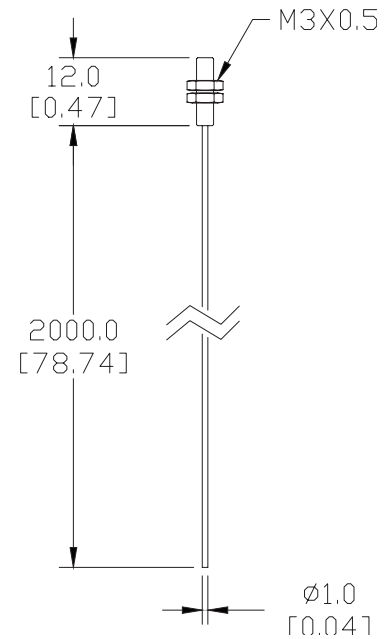
\$43.50



Specifications	
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

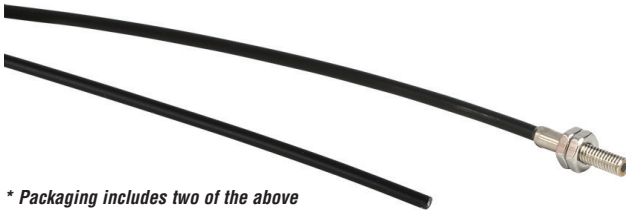
## Dimensions

mm [inch]



## OPT2065 Through-Beam Mode

\$40.50

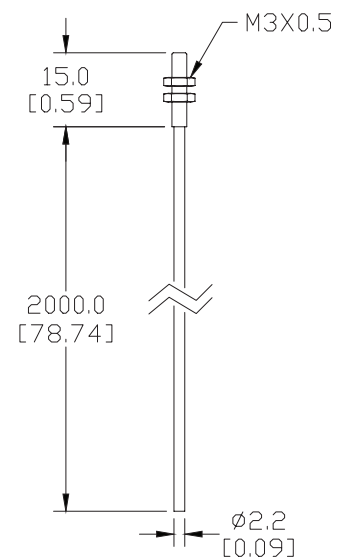


\* Packaging includes two of the above

Specifications	
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

## Dimensions

mm [inch]



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# Cuttable Fiber Optic Cable

**OPT2070 Through-Beam Mode**      **\$103.00**

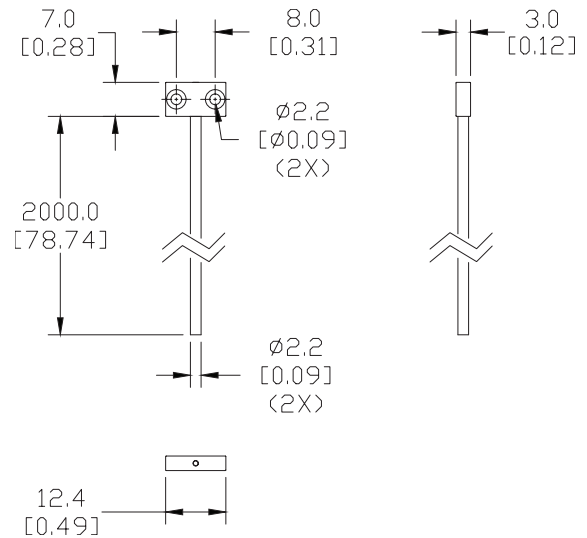


\* Packaging includes two of the above.

Specifications	
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

## Dimensions

mm [inch]



**OPT2071 Through-Beam Mode**      **\$103.00**

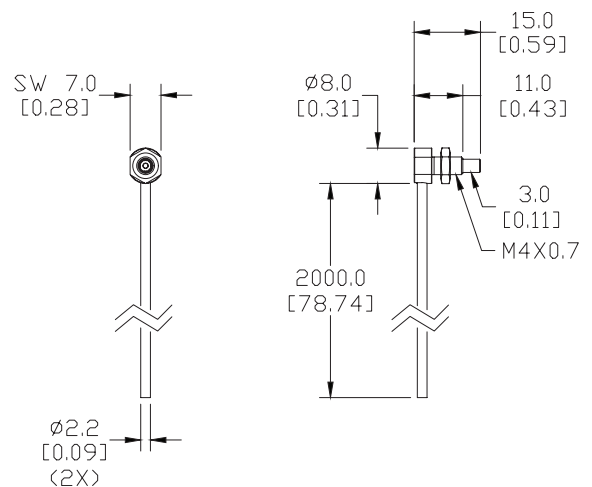


\* Packaging includes two of the above.

Specifications	
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

## Dimensions

mm [inch]



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# Cuttable Fiber Optic Cable

## OPT2074 Through-Beam Mode

**\$35.00**

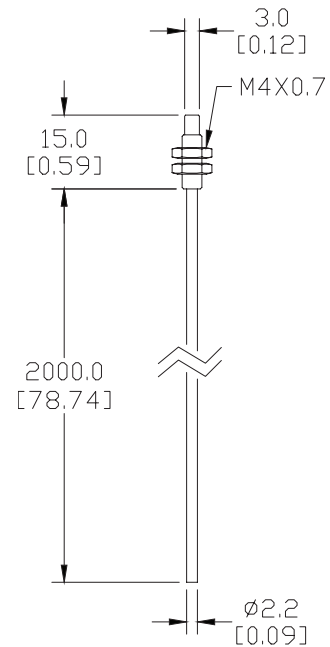


\* Packaging includes two of the above.

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

## Dimensions

mm [inch]





# Glass Fiber Optic Cable

## OPT2082 Diffuse (Reflex) Mode

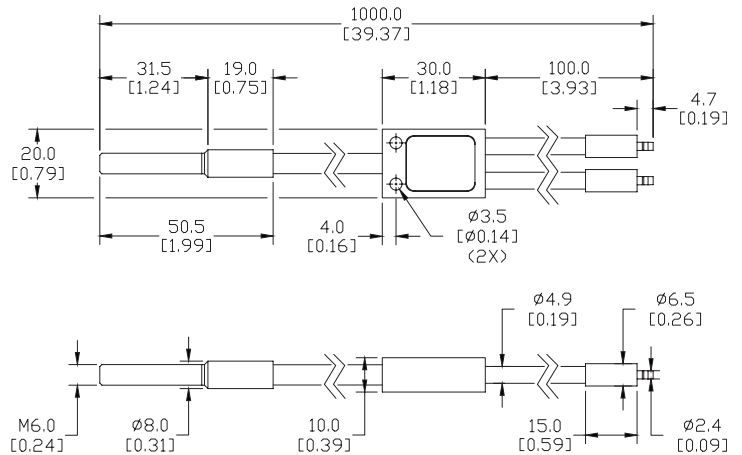
\$126.00



### Dimensions

mm [inch]

Specifications	
<b>Optical Fiber Core Ø</b>	1.6 mm
<b>Sensing Distance with OPT series</b>	160mm
<b>Fiber Length (L)</b>	1m
<b>Fiber Bending Radius</b>	50mm
<b>Free Cut</b>	No
<b>Head Size</b>	M6
<b>Thread Pitch</b>	1.0
<b>Temperature Range</b>	-25 to 180 °C [-13 to 356 °F]
<b>Fiber Materials</b>	Glass
<b>Sleeve Materials</b>	Nickel-plated brass
<b>Head Materials</b>	Aluminum
<b>Fiber Diameter</b>	50µm
<b>Fiber Distribution</b>	separated bundles
<b>Opening Angle</b>	68 degrees
<b>Light Emission</b>	Straight





# Glass Fiber Optic Cable

## OPT2086 Through-Beam Mode

\$121.00



\* Packaging includes two of the above.

### Dimensions

mm [inch]

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

