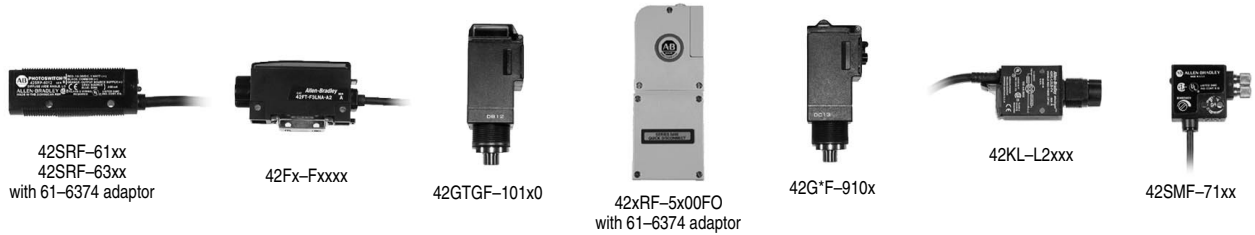


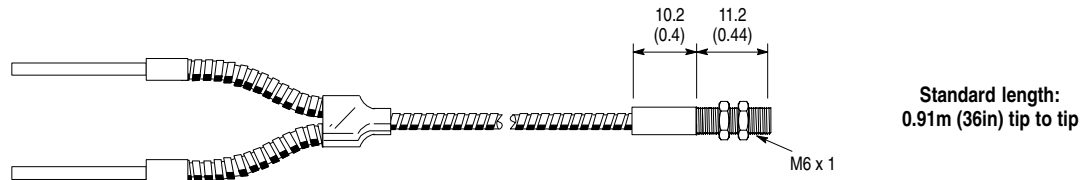
Glass Fiber Optic Cables

Bifurcated for Small Aperture Sensors (2.2mm/0.09in)

Small Aperture Sensors: fibers from page 1–275 to 1–283 can be used with these sensors.



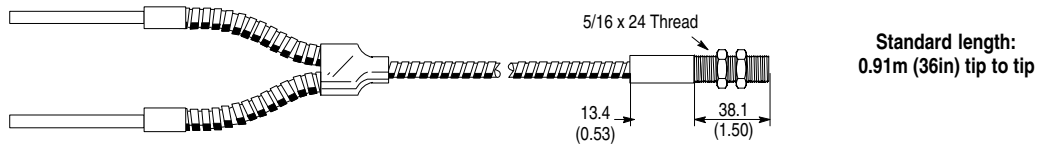
Dimensions—mm (inches)



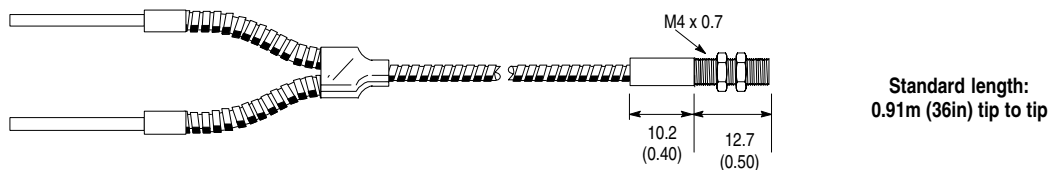
New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GR-TAB20SS	99-161-1	Brass	2.2 (0.09)	Stainless Steel	63 (2.5)
43GR-TAB20MS				PVC	



New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GR-TAS20SS	99-704-1	Stainless Steel	2.2 (0.09)	Stainless Steel	63 (2.5)
43GR-TAS20MS	99-702-1			PVC	



New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GR-TBS20SS		Stainless Steel	2.2 (0.09)	Stainless Steel	63 (2.5)
43GR-TBS20MS	99-700-1			PVC	

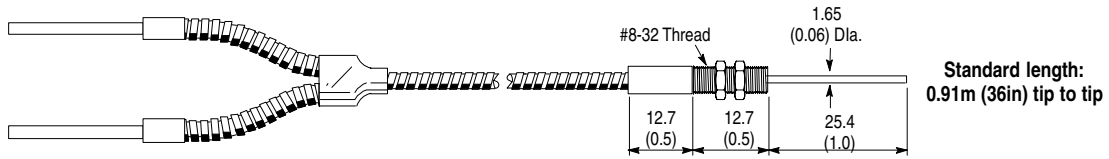


New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GR-XAS10SS	99-751-1	Stainless Steel	1.2 (0.046)	Stainless Steel	Contact product support.
43GR-XAS10MS				PVC	

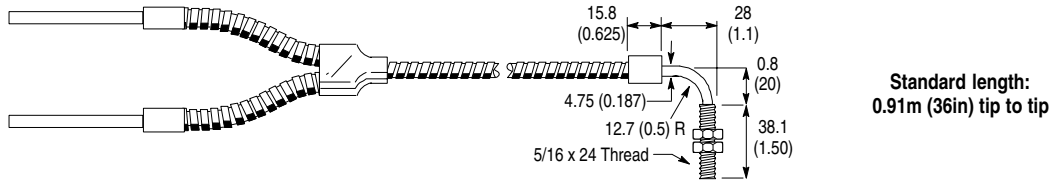
## Glass Fiber Optic Cables

Bifurcated for Small Aperture Sensors (2.2mm/0.09in)

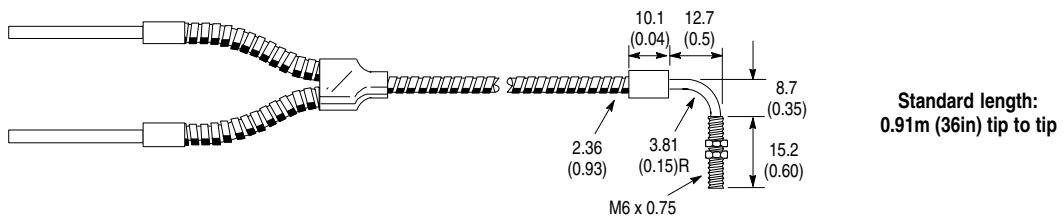
### Dimensions—mm (inches)



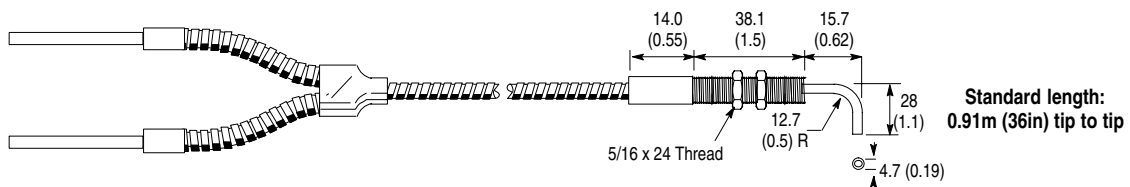
New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GR-MRS00SS		Stainless Steel	0.7 (0.027)	Stainless Steel	7.0 (0.28)
43GR-MRS00MS				PVC	



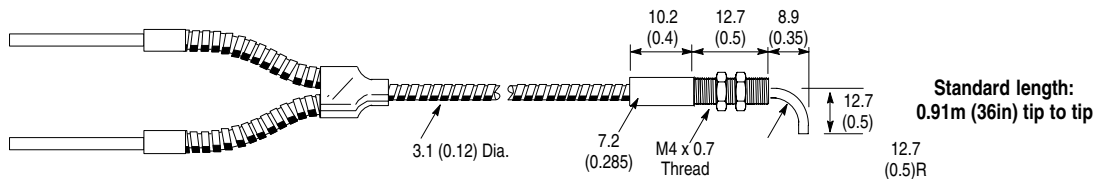
New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GR-TMS20SS		Stainless Steel	2.2 (0.09)	Stainless Steel	63 (2.5)
43GR-TMS20MS	99-706-1			PVC	



New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GR-TIS10SS	99-752-1	Stainless Steel	1.2 (0.046)	Stainless Steel	Contact product support.
43GR-TIS10MS				PVC	



New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GR-TQS20SS		Stainless Steel	2.2 (0.09)	Stainless Steel	63 (2.5)
43GR-TQS20MS	99-708-1			PVC	

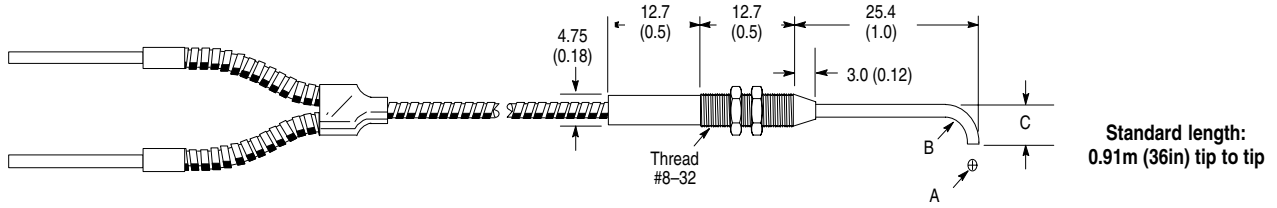


New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GR-TDS10SS	99-755-1	Stainless Steel	1.2 (0.046)	Stainless Steel	Contact product support.
43GR-TDS10MS				PVC	

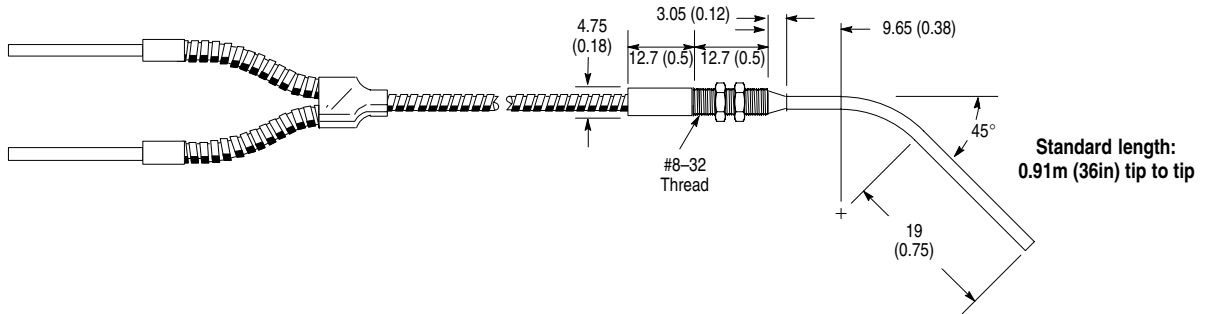
**Glass Fiber Optic Cables**

Bifurcated for Small Aperture Sensors (2.2mm/0.09in)

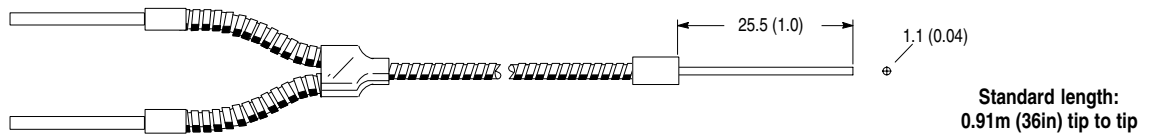
**Dimensions—mm (inches)**



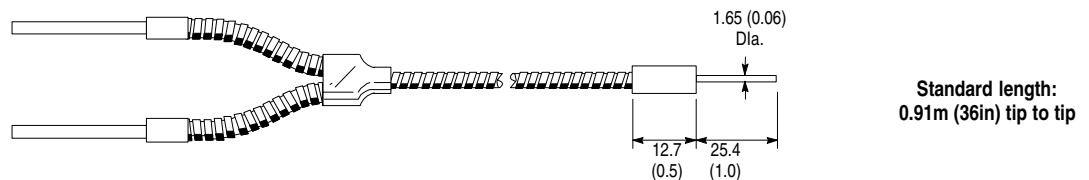
New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GR-MUS00SS		Stainless Steel	0.7 (0.027)	Stainless Steel	Contact product support.
43GR-MUS00MS				PVC	



New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GR-MSS00SS		Stainless Steel	0.7 (0.027)	Stainless Steel	Contact product support.
43GR-MSS00MS				PVC	



New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GR-MAS00SS		Stainless Steel	0.7 (0.027)	Stainless Steel	Contact product support.
43GR-MAS00MS				PVC	

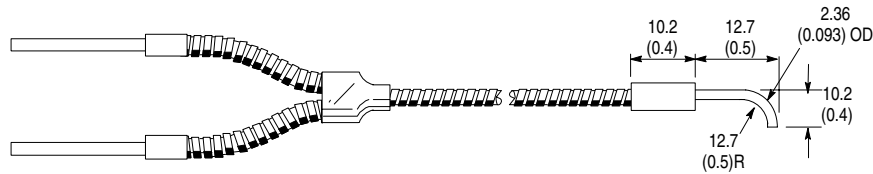


New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GR-MDS10SS		Stainless Steel	1.2 (0.046)	Stainless Steel	Contact product support.
43GR-MDS10MS				PVC	

## Glass Fiber Optic Cables

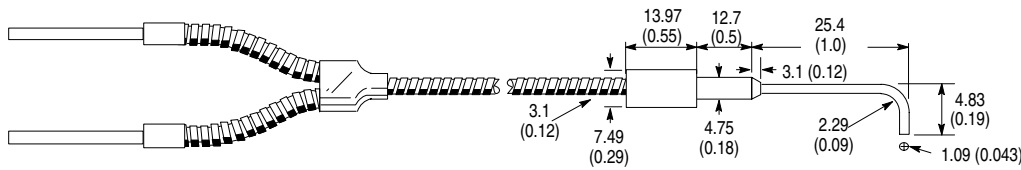
Bifurcated for Small Aperture Sensors (2.2mm/0.09in)

### Dimensions—mm (inches)



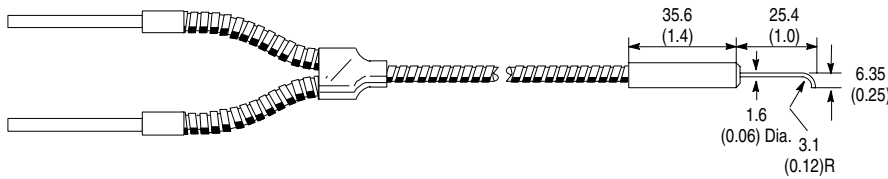
Standard length:  
0.91m (36in) tip to tip

New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GR-FTS10SS	99-753-1	Stainless Steel	1.2 (0.046)	Stainless Steel	Contact product support.
43GR-FTS10MS				PVC	



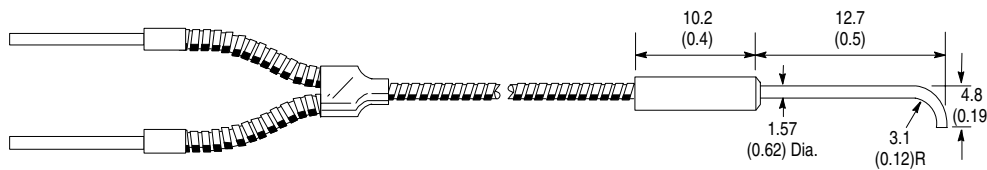
Standard length:  
0.91m (36in) tip to tip

New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GR-MKS00SS		Stainless Steel	0.7 (0.027)	Stainless Steel	Contact product support.
43GR-MKS00MS				PVC	



Standard length:  
0.91m (36in) tip to tip

New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GR-MOS10SS		Stainless Steel	1.2 (0.046)	Stainless Steel	Contact product support.
43GR-MOS10MS				PVC	



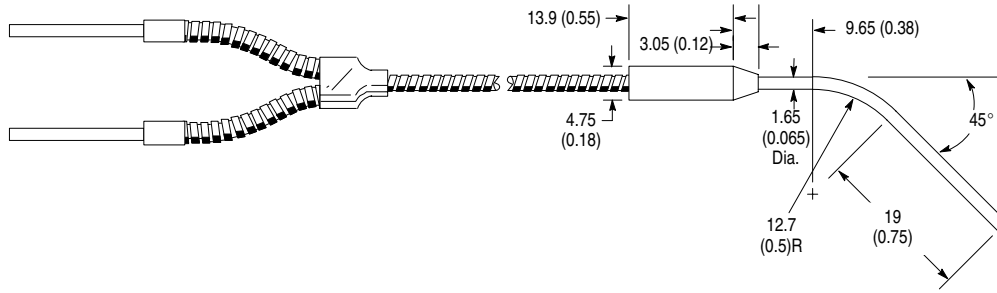
Standard length:  
0.91m (36in) tip to tip

New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GR-MYS10SS		Stainless Steel	1.2 (0.046)	Stainless Steel	Contact product support.
43GR-MYS10MS				PVC	

**Glass Fiber Optic Cables**

Bifurcated for Small Aperture Sensors (2.2mm/0.09in)

**Dimensions—mm (inches)**



Standard length:  
0.91m (36in) tip to tip

New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GR-MJS10SS		Stainless Steel	1.2 (0.046)	Stainless Steel	Contact product support.
43GR-MJS10MS				PVC	

## Glass Fiber Optic Cables

### Transmitted Beam for Small Aperture Sensors (2.2mm/0.09in)

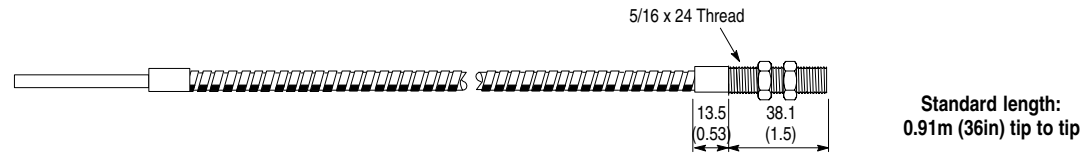
#### Dimensions—mm (inches)



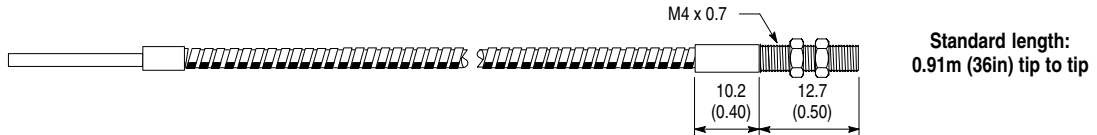
New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GT-TAB15SS		Brass	1.6 (0.062)	Stainless Steel	215 (8.5)
43GT-TAB15MS				PVC	



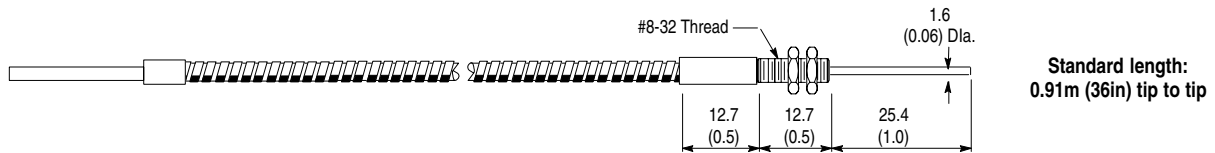
New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GT-TAS15SS	99-714-1	Stainless Steel	1.6 (0.062)	Stainless Steel	215 (8.5)
43GT-TAS15MS				PVC	



New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GT-TBS15SS		Stainless Steel	1.6 (0.062)	Stainless Steel	215 (8.5)
43GT-TBS15MS	99-710-1			PVC	



New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GT-XAS10SS	99-951-1	Stainless Steel	1.2 (0.046)	Stainless Steel	Contact product support.
43GT-XAS10MS				PVC	



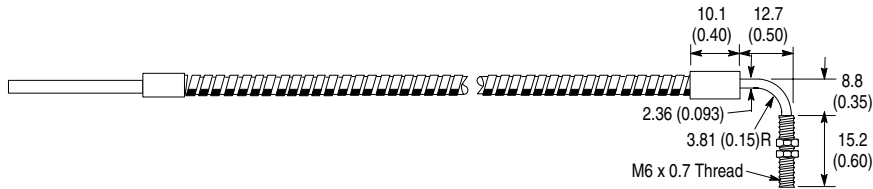
New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GT-MRS00SS		Stainless Steel	0.7 (0.027)	Stainless Steel	Contact product support.
43GT-MRS00MS				PVC	

Note: Two transmitted beam fiber cables required for each sensor.

**Glass Fiber Optic Cables**

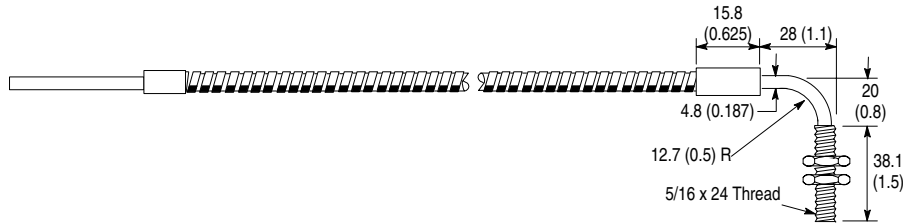
**Transmitted Beam for Small Aperture Sensors (2.2mm/0.09in)**

**Dimensions—mm (inches)**



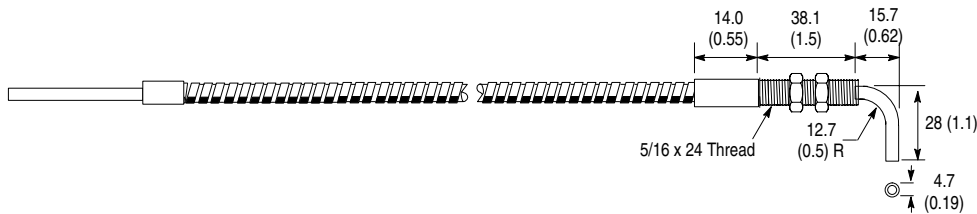
Standard length:  
0.91m (36in) tip to tip

New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GT-TIS10SS	99-952-1	Stainless Steel	1.2 (0.046)	Stainless Steel	Contact product support.
43GT-TIS10MS				PVC	



Standard length:  
0.91m (36in) tip to tip

New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GT-TMS15SS		Stainless Steel	1.6 (0.062)	Stainless Steel	215 (8.5)
43GT-TMS15MS	99-723-1			PVC	



Standard length:  
0.91m (36in) tip to tip

New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GT-TQS15SS		Stainless Steel	1.6 (0.062)	Stainless Steel	215 (8.5)
43GT-TQS15MS	99-718-1			PVC	



Standard length:  
0.91m (36in) tip to tip

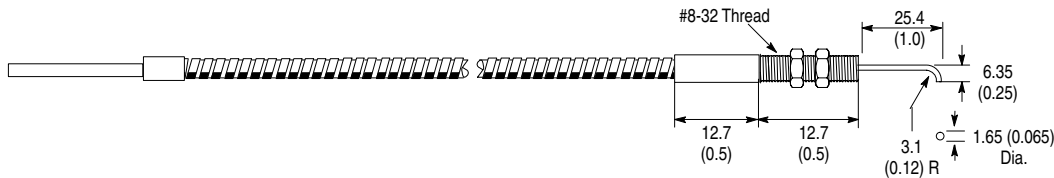
New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GT-TDS10SS	99-955-1	Stainless Steel	1.2 (0.046)	Stainless Steel	Contact product support.
43GT-TDS10MS				PVC	

Note: Two transmitted beam fiber cables required for each sensor.

## Glass Fiber Optic Cables

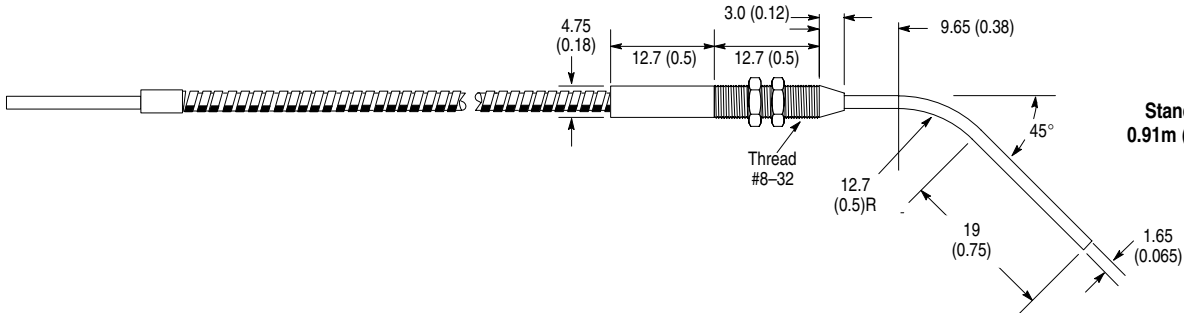
### Transmitted Beam for Small Aperture Sensors (2.2mm/0.09in)

#### Dimensions—mm (inches)



Standard length:  
0.91m (36in) tip to tip

New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GT-MUS00SS		Stainless Steel	0.7 (0.027)	Stainless Steel	Contact product support.
43GT-MUS00MS				PVC	



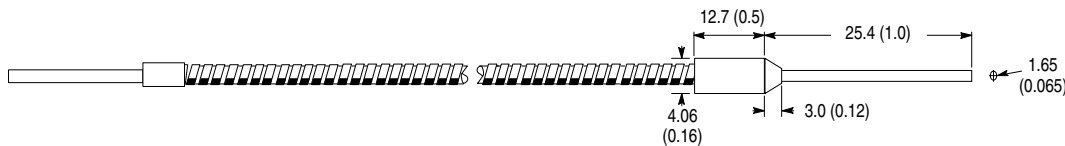
Standard length:  
0.91m (36in) tip to tip

New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GT-MSS00SS		Stainless Steel	0.7 (0.027)	Stainless Steel	Contact product support.
43GT-MSS00MS				PVC	



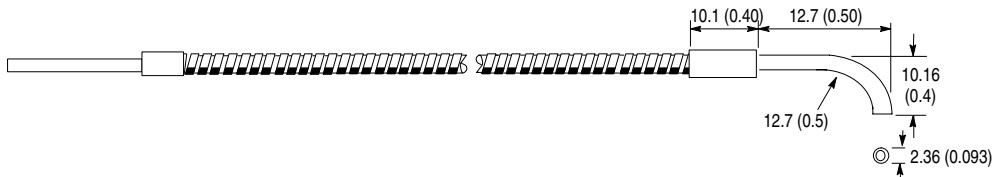
Standard length:  
0.91m (36in) tip to tip

New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GT-MAS00SS		Stainless Steel	0.7 (0.027)	Stainless Steel	Contact product support.
43GT-MAS00MS				PVC	



Standard length:  
0.91m (36in) tip to tip

New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GT-MDS10SS		Stainless Steel	1.2 (0.046)	Stainless Steel	Contact product support.
43GT-MDS10MS				PVC	



Standard length:  
0.91m (36in) tip to tip

New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GT-FTS10SS	99-953-1	Stainless Steel	1.2 (0.046)	Stainless Steel	Contact product support.
43GT-FTS10MS				PVC	

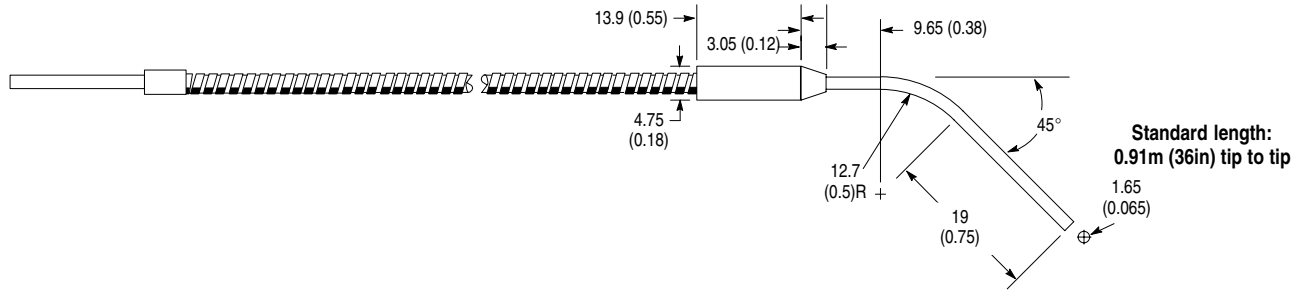
Note: Two transmitted beam fiber cables required for each sensor.



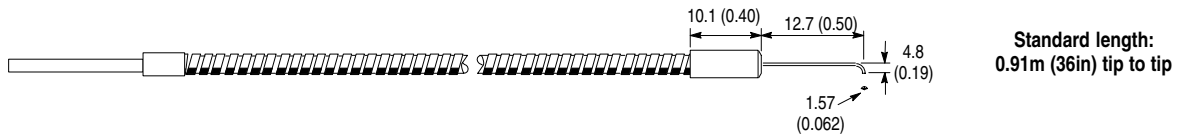
**Glass Fiber Optic Cables**

**Transmitted Beam for Small Aperture Sensors (2.2mm/0.09in)**

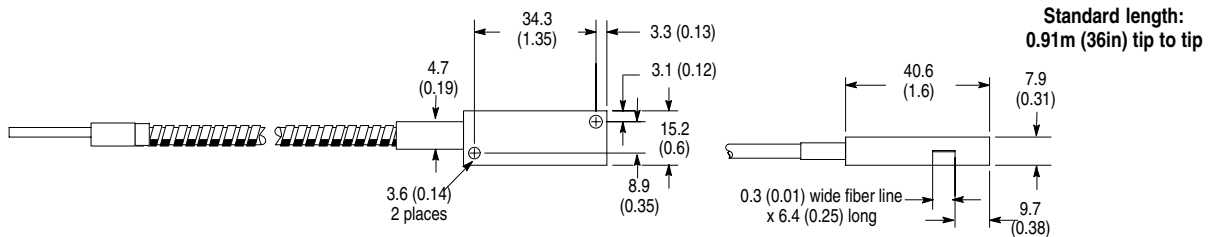
**Dimensions—mm (inches)**



New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GT-MJS10SS		Stainless Steel	1.2 (0.046)	Stainless Steel	Contact product support.
43GT-MJS10MS				PVC	



New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Diameter—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GT-MYS10SS		Stainless Steel	1.2 (0.046)	Stainless Steel	Contact product support.
43GT-MYS10MS				PVC	



New Catalog Number	Prior Catalog Number	Sensing Tip Material	Fiber Dimensions—mm (in)	Sheathing Material	Nom. Sen. Ref.—mm (in)
43GT-BSA80SS		Aluminum	6.35 x 0.3 (0.25 x 0.012)	Stainless Steel	215 (8.5)
43GT-BSA80MS				PVC	

**Note: Two transmitted beam fiber cables required for each sensor.**

## Glass Fiber Optic Cables

### Additional Cables for Large Aperture Sensors (4.6mm or 0.187in OD Sensor End Tip)

#### Custom Fiber Optic Cables

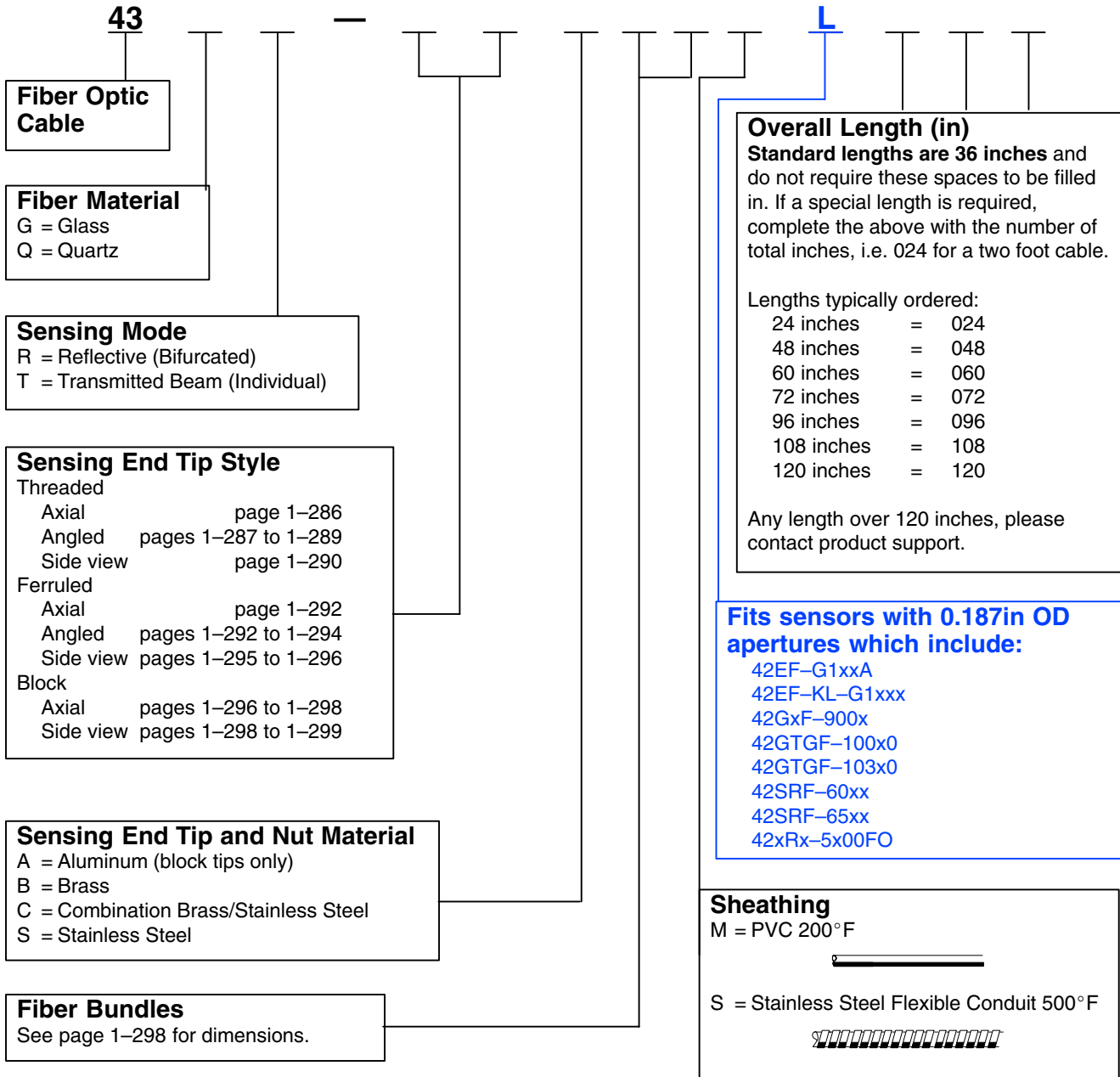
Rockwell Automation/Allen-Bradley can provide custom glass fiber optic cables to meet nearly any application requirement.

Typical cable modifications include:

- Custom lengths up to 15.2m (50ft)
- Custom temperature ratings up to 482°C (900°F)
- Custom configurations including multiple sensing tips
- Custom sensing end tips—nearly any modification is possible

For more information contact your product support at 1.800.666.0001 or +1.978.441.9500.

#### To Build a Custom Fiber Optic for a Large Aperture Sensor:



## Glass Fiber Optic Cables

### Additional Cables for Small Aperture Sensors (2.2mm or 0.09in OD Sensor End Tip)

#### Custom Fiber Optic Cables



Rockwell Automation/Allen-Bradley can provide custom glass fiber optic cables to meet nearly any application requirement.

Typical cable modifications include:

- Custom lengths up to 15.2m (50ft)
- Custom temperature ratings up to 482°C (900°F)
- Custom configurations including multiple sensing tips
- Custom sensing end tips—nearly any modification is possible

For more information contact product support at 1.800.666.0001 or +1.978.441.9500.

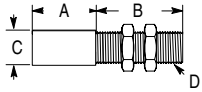
#### To Build a Custom Fiber Optic for Small Aperture Sensor:

<p><b>43</b></p> <p><b>G</b></p>	<p>—</p>	<p><b>S</b></p>																					
<p><b>Fiber Optic Cable</b></p>																							
<p><b>Fiber Material</b> G = Glass</p>																							
<p><b>Sensing Mode</b> R = Reflective (Bifurcated) T = Transmitted Beam (Individual)</p>																							
<p><b>Sensing End Tip Style</b> Threaded Axial page 1-286 Angled pages 1-287 to 1-289 Side view page 1-290 Ferruled Axial page 1-292 Angled pages 1-292 to 1-294 Side view pages 1-295 to 1-296 Block Axial pages 1-296 to 1-298 Side view pages 1-298 to 1-299</p>																							
<p><b>Sensing End Tip and Nut Material</b> A = Aluminum (block tips only) B = Brass C = Combination Brass/Stainless Steel S = Stainless Steel</p>																							
<p><b>Fiber Bundles</b> See page 1-298 for dimensions.</p>																							
		<p><b>Overall Length (in)</b> Standard lengths are 36 inches and do not require these spaces to be filled in. If a special length is required, complete the above with the number of total inches, i.e. 024 for a two foot cable.</p> <p>Lengths typically ordered:</p> <table> <tr><td>24 inches</td><td>=</td><td>024</td></tr> <tr><td>48 inches</td><td>=</td><td>048</td></tr> <tr><td>60 inches</td><td>=</td><td>060</td></tr> <tr><td>72 inches</td><td>=</td><td>072</td></tr> <tr><td>96 inches</td><td>=</td><td>096</td></tr> <tr><td>108 inches</td><td>=</td><td>108</td></tr> <tr><td>120 inches</td><td>=</td><td>120</td></tr> </table> <p>Any length over 120 inches, please contact factory.</p>	24 inches	=	024	48 inches	=	048	60 inches	=	060	72 inches	=	072	96 inches	=	096	108 inches	=	108	120 inches	=	120
24 inches	=	024																					
48 inches	=	048																					
60 inches	=	060																					
72 inches	=	072																					
96 inches	=	096																					
108 inches	=	108																					
120 inches	=	120																					
		<p><b>Fits sensors with 2.2mm (0.09in) OD apertures which include:</b> 42KL-L2xxx 42GxF-910 42GTGF-101x0 42SMF71xx 42SRF-61xx w/61-6374 adaptor 42SRF-63xx w/61-6374 adaptor 42xRx-5x00FO w/61-6374 adaptor 42Fx-Fxxxx</p>																					
		<p><b>Sheathing</b> M = PVC 200°F</p> <p style="text-align: center;">  </p> <p>S = Stainless Steel Flexible Conduit 500°F</p> <p style="text-align: center;">  </p>																					

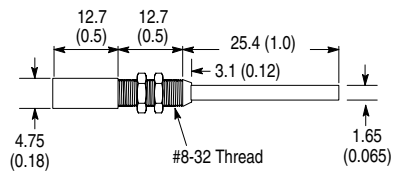
## Glass Fiber Optic Cable Tips

Use with Configurators on page 1–284 and 1–285.

### Dimensions—mm (inches)



Code	Standard Bundle mm (in)	Dimensions—mm (in)			
		A	B	C	D
TA	2.29 (0.09)	10.16 (0.40)	11.18 (0.44)	5.84 (0.23)	M6 x 1 class 6g
TB	3.2 (0.125)	13.46 (0.53)	38.1 (1.5)	7.92 (0.312)	5/16 x 24 UNF
TF	3.2 (0.125)	13.46 (0.53)	12.7 (0.5)	4.45 (0.175)	#8–32
TG	1.2 (0.046)	13.46 (0.53)	38.1 (1.5)	9.53 (0.375)	3/8 x 24 UNF
TV	4.0 (0.156)	13.46 (0.53)	139.7 (5.5)	7.92 (0.312)	5/16 x 24 UNF
TY	3.2 (0.125)	13.46 (0.53)	101.6 (4.0)	7.62 (0.3)	5/16 x 24 UNF
XA	1.2 (0.046)	10.16 (0.40)	12.7 (0.5)	4.75 (0.187)	M4 x 0.7
XB	1.2 (0.046)	10.16 (0.40)	12.7 (0.5)	4.75 (0.187)	M6 x 0.75
XD	3.2 (0.125)	13.46 (0.53)	15.24 (0.6)	7.92 (0.312)	5/16 x 24 UNF

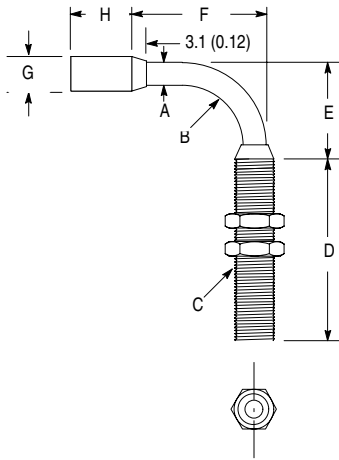


Code	Standard Bundle mm (in)
MR	1.2 (0.046)

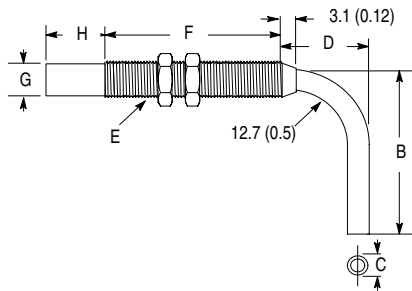
**Glass Fiber Optic Cable Tips**

Use with Configurators on page 1-284 and 1-285.

**Dimensions—mm (inches)**



Code	Standard Bundle mm (in)	Dimensions—mm (in)							
		A	B	C	D	E	F	G	H
TM	3.2 (0.125)	4.75 (0.187)	12.7 (0.5)	5/16 x 24	38.1 (1.5)	20.3 (0.8)	27.9 (1.1)	7.49 (0.295)	15.8 (0.625)
TO	4.0 (0.156)	5.54 (0.218)	12.7 (0.5)	5/16 x 24	38.1 (1.5)	20.3 (0.8)	27.9 (1.1)	7.49 (0.295)	15.8 (0.625)
TC	1.2 (0.046)	2.36 (0.093)	6.35 (0.25)	8 - 32	12.7 (0.5)	9.65 (0.38)	15.2 (0.6)	4.45 (0.175)	15.8 (0.625)
TI	1.2 (0.046)	2.36 (0.093)	3.81 (0.15)	M6 x 0.75	15.2 (0.6)	8.89 (0.35)	12.7 (0.5)	4.75 (0.187)	10.1 (0.40)

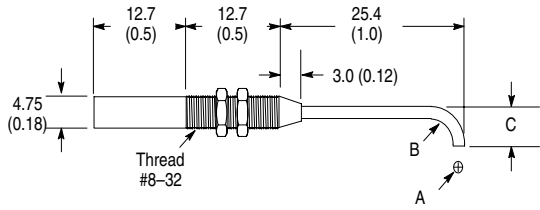


Code	Standard Bundle mm (in)	Dimensions—mm (in)						
		B	C	D	E	F	G	H
TQ	3.2 (0.125)	27.9 (1.1)	4.75 (0.187)	15.75 (0.62)	5/16 x 24	38.1 (1.5)	7.92 (0.312)	13.97 (0.55)
TR	3.98 (0.156)	27.9 (1.1)	5.54 (0.218)	18.29 (0.72)	5/16 x 24	38.1 (1.5)	7.92 (0.312)	13.97 (0.55)
TW	3.2 (0.125)	40.6 (1.6)	4.75 (0.187)	15.75 (0.62)	5/16 x 24	38.1 (1.5)	7.92 (0.312)	13.97 (0.55)
TX	3.2 (0.125)	20.6 (0.81)	4.75 (0.187)	26.9 (1.06)	5/16 x 24	38.1 (1.5)	7.92 (0.312)	13.97 (0.55)
TD	1.2 (0.046)	12.7 (0.5)	2.36 (0.093)	8.89 (0.35)	M4 x 0.7	12.7 (0.5)	4.75 (0.187)	10.16 (0.40)

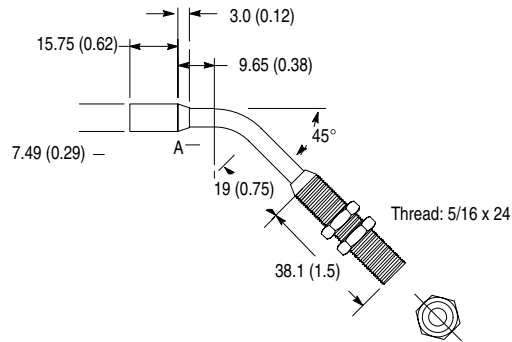
## Glass Fiber Optic Cable Tips

Use with Configurators on page 1–284 and 1–285.

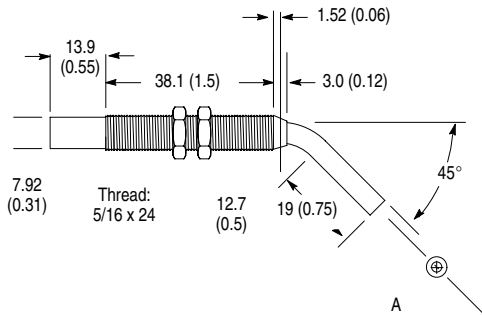
### Dimensions—mm (inches)



Code	Standard Bundle mm (in)	Dimensions—mm (in)		
		A	B	C
MT	0.70 (0.027)	1.09 (0.043)	2.29 (0.09)	4.83 (0.19)
MU	1.2 (0.046)	1.65 (0.065)	3.05 (0.12)	6.35 (0.25)



Code	Standard Bundle mm (in)	Dimensions—mm (in) A
TH	3.2 (0.125)	4.75 (0.187)
TJ	4.0 (0.156)	5.54 (0.218)

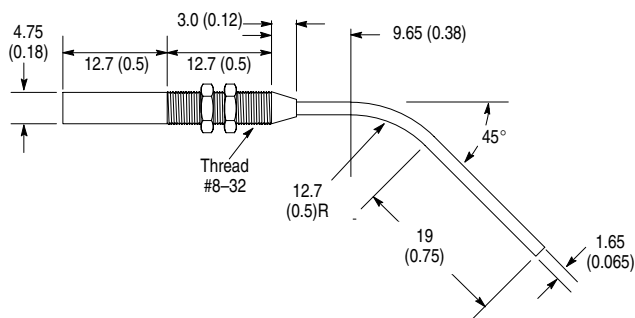


Code	Standard Bundle mm (in)	Dimensions—mm (in) A
TK	3.2 (0.125)	4.75 (0.187)
TL	4.0 (0.156)	5.54 (0.218)

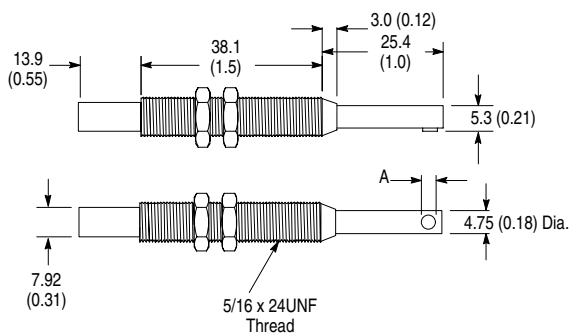
**Glass Fiber Optic Cable Tips**

Use with Configurators on page 1-284 and 1-285.

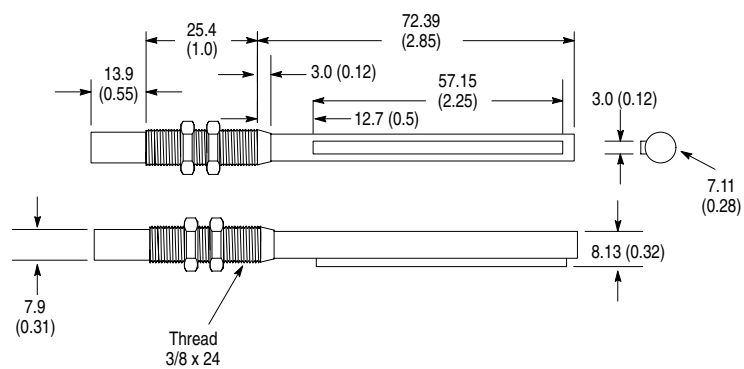
**Dimensions—mm (inches)**



Code	Standard Bundle mm (in)
MS	1.2 (0.046)



Code	Standard Bundle mm (in)	Dimensions—mm (in) A
TT	2.29 (0.09)	3.2 (0.125)
TZ	2.5 x 0.5 (0.1 x 0.02)	3.94 (0.155)

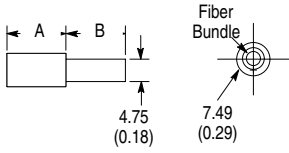


Code	Standard Bundle mm (in)
TU	51 x 0.3 (2.0 x 0.01)

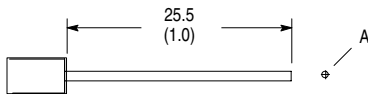
## Glass Fiber Optic Cable Tips

Use with Configurators on page 1–284 and 1–285.

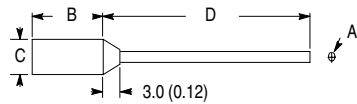
### Dimensions—mm (inches)



Code	Standard Bundle mm (in)	Dimensions—mm (in)	
		A	B
FA	3.2 (0.125)	12.7 (0.5)	12.7 (0.5)
FB		12.7 (0.5)	26.9 (1.06)
FC		12.7 (0.5)	31.7 (1.25)
FD		12.7 (0.5)	50.8 (2.0)
FE		35.5 (1.4)	76.2 (3.0)



Code	Standard Bundle mm (in)	Dimensions—mm (in) A
MA	0.70 (0.027)	1.09 (0.043)
MC	1.2 (0.046)	1.65 (0.065)



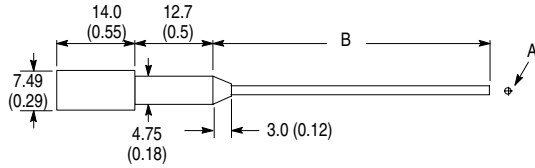
Code	Standard Bundle mm (in)	Dimensions—mm (in)			
		A	B	C	D
MD	1.2 (0.046)	1.65 (0.065)	12.7 (0.5)	4.06 (0.16)	25.4 (1.0)
MG	1.2 (0.046)		35.5 (1.4)	7.87 (0.31)	
MH	1.6 (0.062)	2.36 (0.093)	35.5 (1.4)	7.87 (0.31)	76.2 (3.0)
MI	1.6 (0.062)		12.7 (0.5)	7.87 (0.31)	25.4 (1.0)



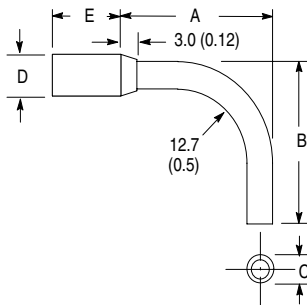
**Glass Fiber Optic Cable Tips**

Use with Configurators on page 1–284 and 1–285.

**Dimensions—mm (inches)**



Code	Standard Bundle mm (in)	Dimensions—mm (in)	
		A	B
MB	1.2 (0.046)	1.65 (0.065)	25.4 (1.0)
MF	1.2 (0.046)	1.65 (0.065)	50.8 (2.0)
MV	0.70 (0.027)	1.09 (0.043)	12.7 (0.5)

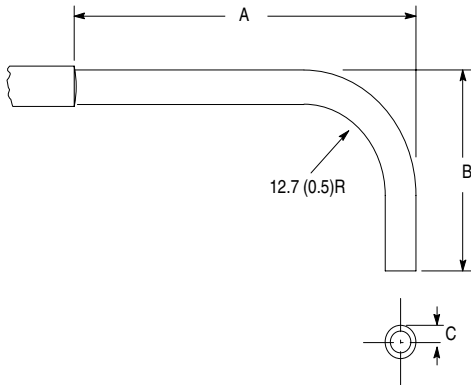


Code	Standard Bundle mm (in)	Dimensions—mm (in)				
		A	B	C	D	E
FI	3.2 (0.125)	27.9 (1.1)	20.3 (0.8)	4.75 (0.187)	7.49 (0.295)	15.8 (0.625)
FJ	4.0 (0.156)	27.9 (1.1)	25.4 (1.0)	5.54 (0.218)	7.49 (0.295)	15.8 (0.625)
FK	3.2 (0.125)	27.9 (1.1)	27.9 (1.1)	4.75 (0.187)	7.49 (0.295)	15.8 (0.625)
FL	3.2 (0.125)	27.9 (1.1)	35.0 (1.38)	4.75 (0.187)	7.49 (0.295)	15.8 (0.625)
FM	3.2 (0.125)	47.7 (1.88)	47.7 (1.88)	4.75 (0.187)	7.49 (0.295)	15.8 (0.625)
FT	2.2 (0.09)	12.7 (0.5)	10.16 (0.40)	2.36 (0.093)	4.75 (0.187)	10.4(0.4)

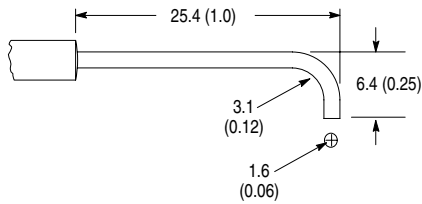
## Glass Fiber Optic Cable Tips

Use with Configurators on page 1–284 and 1–285.

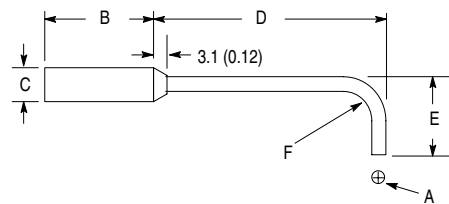
### Dimensions—mm (inches)



Code	Standard Bundle mm (in)	Dimensions—mm (in)		
		A	B	C
FS	3.2 (0.125)	27.9 (1.1)	20.3 (0.8)	4.75 (0.187)



Code	Standard Bundle mm (in)
ML	1.2 (0.046)

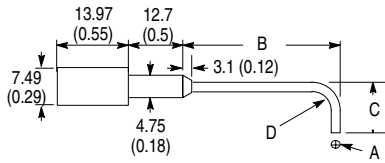


Code	Standard Bundle mm (in)	Dimensions—mm (in)					
		A	B	C	D	E	F
MM	1.2 (0.046)	1.65 (0.065)	12.7 (0.5)	4.06 (0.16)	25.4 (1.0)	6.35 (0.25)	3.05 (0.12)
MO	1.2 (0.046)	1.65 (0.065)	35.5 (1.4)	7.87 (0.31)	25.4 (1.0)	6.35 (0.25)	3.05 (0.12)
MQ	1.6 (0.062)	2.36 (0.09)	35.5 (1.4)	7.87 (0.31)	25.4 (1.0)	6.35 (0.25)	3.05 (0.12)
MY	1.2 (0.046)	1.57 (0.062)	10.16 (0.40)	4.83 (0.19)	12.7 (0.5)	4.83 (0.19)	3.05 (0.12)

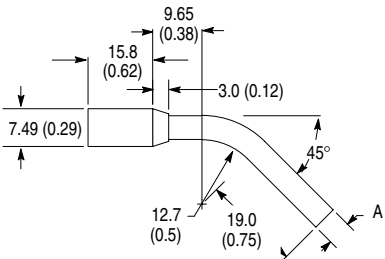
**Glass Fiber Optic Cable Tips**

Use with Configurators on page 1-284 and 1-285.

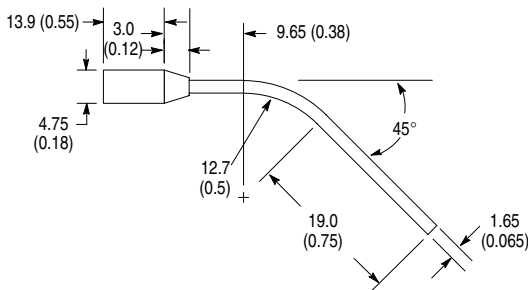
**Dimensions—mm (inches)**



Code	Standard Bundle mm (in)	Dimensions—mm (in)			
		A	B	C	D
MK	0.70 (0.027)	1.09 (0.043)	25.4 (1.0)	4.83 (0.19)	2.29 (0.09)
MN	1.2 (0.046)	1.65 (0.065)	12.7 (0.5)	31.7 (1.25)	19 (0.75)



Code	Standard Bundle mm (in)	Dimensions—mm (in) A
FG	3.2 (0.125)	4.75 (0.187)
FH	4.0 (0.156)	5.54 (0.218)



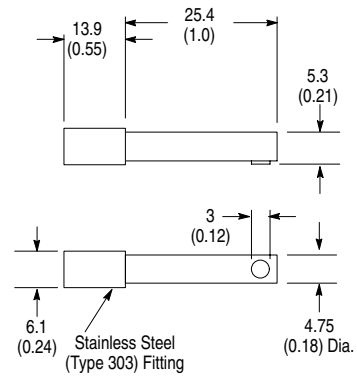
Code	Standard Bundle mm (in)
MJ	1.2 (0.046)

Allen-Bradley Replacements

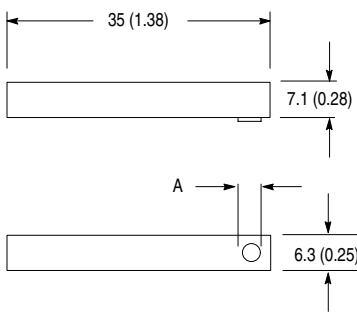
## Glass Fiber Optic Cable Tips

Use with Configurators on page 1-284 and 1-285.

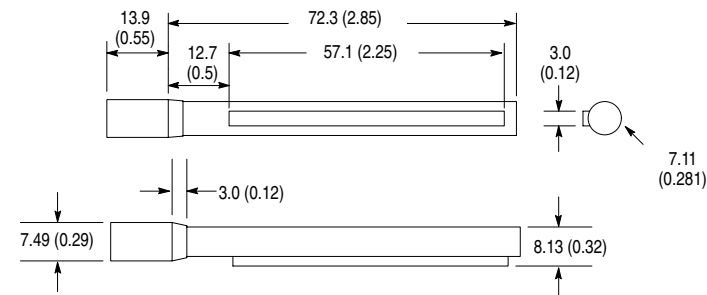
### Dimensions—mm (inches)



Code	Standard Bundle mm (in)
FO	2. (0.09)



Code	Standard Bundle mm (in)	Dimensions—mm (in) A
FP	2. (0.09)	3.2 (0.125)
FR	0.5 x 2.5 (0.2 x 0.01) N-S slot	3.94 (0.155)

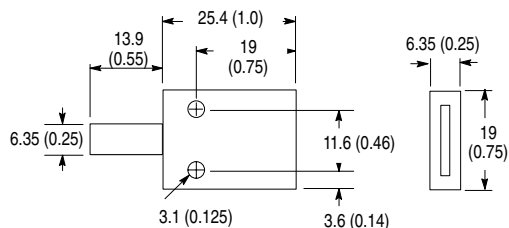


Code	Standard Bundle mm (in)
FQ	51 x 0.3 (2.0 x 0.01) N-S slot

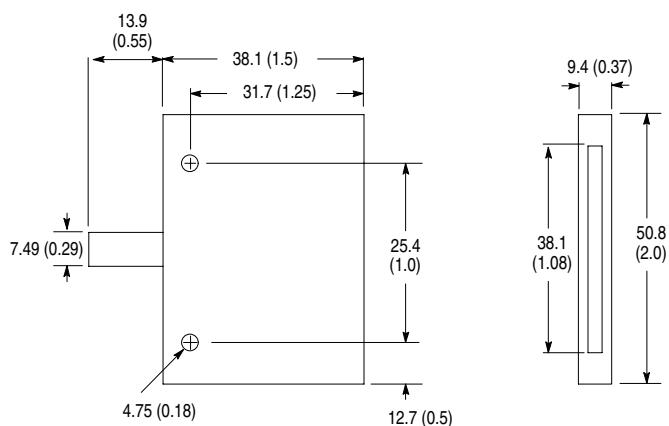
**Glass Fiber Optic Cable Tips**

Use with Configurators on page 1-284 and 1-285.

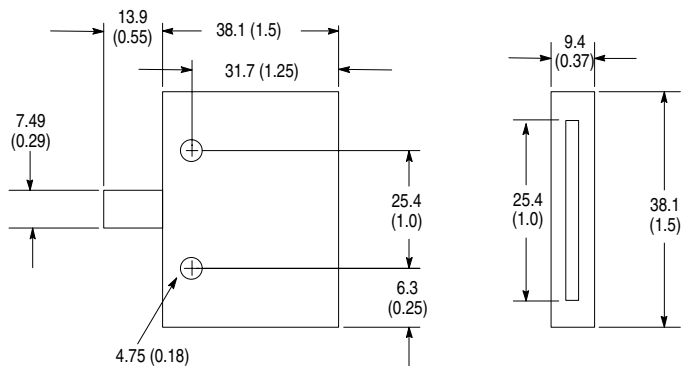
**Dimensions—mm (inches)**



Code	Standard Bundle mm (in)
BA	9.7 x 0.8 (0.382 x 0.032) (E-W)



Code	Standard Bundle mm (in)
BC	38.1 x 0.3 (1.5 x 0.01)



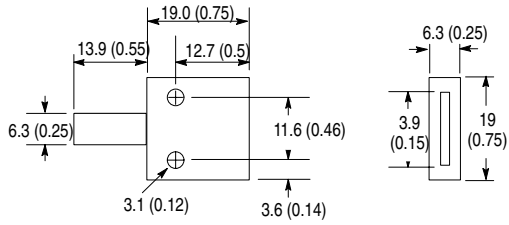
Code	Standard Bundle mm (in)
BR	25.4 x 0.4 (1.0 x 0.015)

Allen-Bradley Replacements

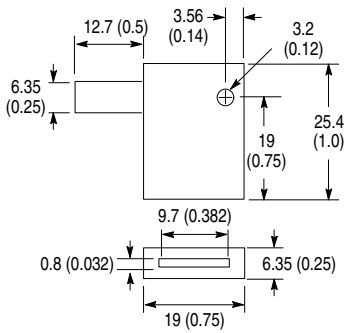
## Glass Fiber Optic Cable Tips

Use with Configurators on page 1–284 and 1–285.

### Dimensions—mm (inches)

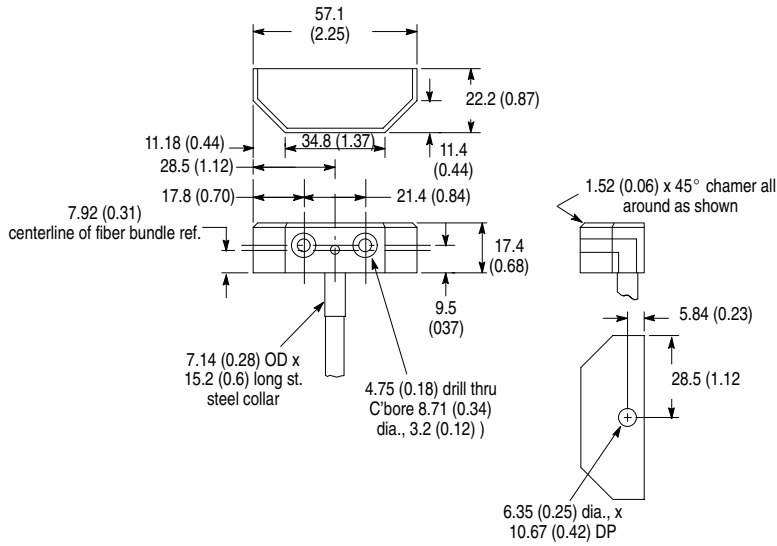


Code	Standard Bundle mm (in)
BT	3.9 x 0.5 (0.154 x 0.02)

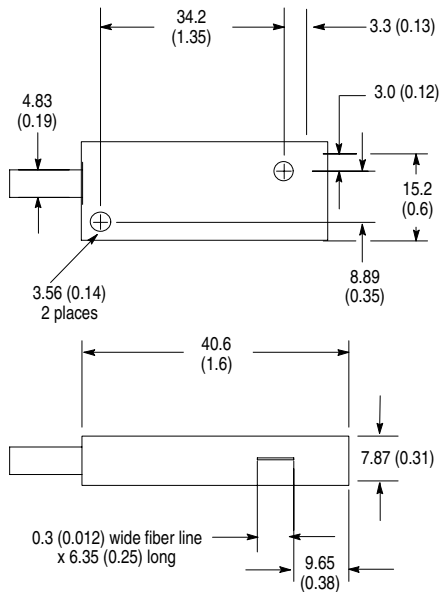


Code	Standard Bundle mm (in)
BE	9.7 x 0.8 (0.382 x 0.032) (E-W)

**Dimensions—mm (inches)**



Code	Standard Bundle mm (in)
BP	2.79 x 2.79 (0.11 x 0.11)



Code	Standard Bundle mm (in)
BS	0.3 x 6.35 (0.012 x 0.25) N-S slot

**Glass Fiber Optic Cable Tips****Bundle Sizes**

These bundle size codes are used with the configurators on page 1–284 and 1–285.

**Glass Fiber Bundle with Cylindrical Sensing End Tips**

Code	Diameter		Arrangement
	mm	inches	
00	0.70	0.027	Randomized
05	0.81	0.032	Randomized
10	1.2	0.046	Randomized
15	1.57	0.062	Randomized
20	2.29	0.090	Randomized
22	2.79	0.110	Randomized
25	3.2	0.125	Randomized
30	4.0	0.156	Randomized
33	4.57	0.180	Randomized
35	5.59	0.220	Randomized
40	2.5 x 0.5	0.10 x 0.02	E–W Slot
41	0.5 x 2.5	0.02 x 0.10	N–S Slot
45	22 x 0.5	0.875 x 0.02	Randomized
46	51 x 0.3	2.0 x 0.01	N–S Slot

**Glass Fiber Bundle with Block Sensing End Tips**

Code	Diameter	
	mm	inches
70	3.9 x 0.5	0.154 x 0.020
72	9.7 x 0.8	0.382 x 0.320
73	38 x 0.25	1.50 x 0.010
74	51 x 0.25	2.00 x 0.010
77	0.4 x 0.25	0.154 x 0.010
78	0.3 x 0.25	0.110 x 0.110
79	25.4 x 0.4	1.00 x 0.015
80	6.4 x 0.3	0.25 x 0.012

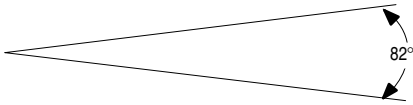
**Note:** Typical fiber optic cable construction is normally randomized. Other options, such as half or shimmed half moon, are available. Please contact product support at 1.800.666.0001 or +1.978.441.9500 for these options.



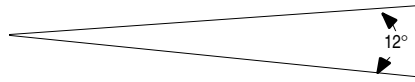
**Extended Range Lens Assemblies**

Extended range assemblies provide greater sensing range and reduce the field of view for detecting smaller objects at a greater distance. Without the extended range lens assembly the field of view is a divergent beam of 82° leaving the end of the fiber optic cable tip. With the extended range lens the beam is reduced to 12° thus permitting the sensing of smaller objects.

**Fiber Optic Field of View Standard Fibers (Without Extended Range Lens Assembly)**



**Fiber Optic Field of View Standard Fibers (With Extended Range Lens Assembly)**




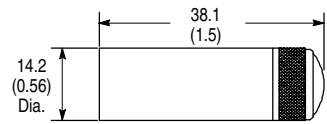
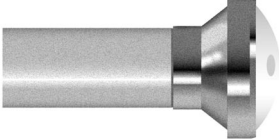
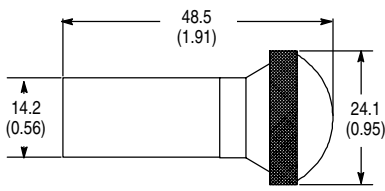

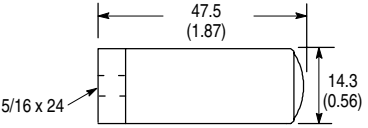
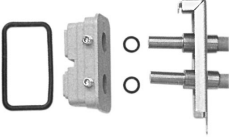
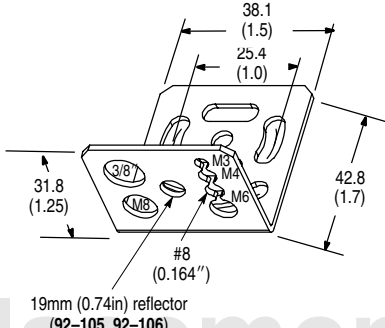
**Adjustable Fixed Focus Sensing Lens**

Consult product support for special applications. All the lens assemblies shown can provide fixed focus sensing with glass fiber optic cables. The distance between the lens and sensing tip can be adjusted, thus varying the focal length. A close position of the lens with respect to the sensing end tip will provide a longer focal length with a larger spot size. Moving the lens away from the sensing end tip of the fiber optic cable will provide a shorter focal

length with a smaller spot size. An example of this using the 60-1844 lens is shown below:

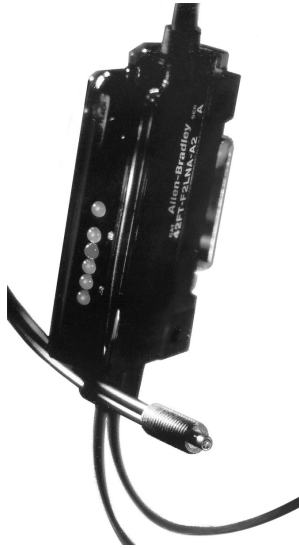
Distance between cable end tip and inside of lens adaptor—mm (in)	Spot Size (Diameter mm (in))	Focus Range mm (in)
0	31.8 (1.25)	127 (5)
2.54 (0.1)	12.7 (0.5)	51-89 (2-3.5)
5.08 (0.2)	7.62 (0.3)	38-51 (1.5-2)
7.62 (0.3)	5.08 (0.2)	33-38 (1.3-1.5)
10.16 (0.4)	3.81 (0.1)	28-33 (1.1-1.3)

It is necessary to reduce the sensitivity of the sensor when using lens assemblies with bifurcated cables to avoid detecting the rear surface of the adaptor lens.

Catalog Number	Description	Dimensions—mm (in)
60-1844 (One per package) Sensing end tips with a 4.74mm (0.187in) diameter	 Extended Range Lens Assembly	
60-2559 (One per package) Sensing tips with 4.74mm (0.187in) diameter	 Extended Range Lens Assembly	
60-2323 (One per package) Sensing end tips with 5/16x24 threads	 Extended Range Lens Assembly (Thread mount 5/16 x 24)	
60-5550 (One per package)	 Adaptor Kit for Series 5000 Green Line Sensors	
60-2696	Glass Fiber Optic Cable Bracket	

## Plastic Fiber Optic Cables

### Introduction



### Application Recommendations

- Many plastic fiber optic cables are available in different core diameters. Larger core diameter cables can carry more light between the sensor and application. These cables will generally offer longer sensing ranges.  
Smaller core diameter cables provide greater resolution and the ability to detect smaller targets.
- The Typical Response curves on page 1–301 show the performance of many Allen-Bradley plastic fiber optic sensors and cables. Note that different sensing distances can be achieved depending upon the cable core diameter. These sensing distances must be derated for adverse environments.
- Longer custom cables will attenuate the light and reduce the operating range.** Contact Rockwell Automation/Allen-Bradley product support for application assistance.
- Avoid sharp bends that can permanently deform the cable. Minimum radius bend is 25.4mm (1.0in).
- Some plastic fiber optic cables can be cut to length. A very sharp right angle cut is essential to provide good performance. The supplied cable cutter #57–127 must be used. Each opening in the cutter can be used only once.
- Some sensing tips cannot be bent. **Only special sensing tips can be bent as specified.** Bends should only be attempted in the areas shown in the illustrations on pages 1–306 to 1–310.
- Plastic fiber optic cables are suitable for applications where the sensor must be isolated from high voltage.
- X-RAY or GAMMA radiation will cause plastic fibers to eventually become opaque. Custom cables constructed with special optical quartz fibers must be ordered for use in areas with high radiation.
- Use Transmitted Beam sensing in submerged applications when possible.
- A plastic fiber optic sensor with a duplex cable can provide Retroreflective or Diffuse sensing depending upon the distance to the target and the sensitivity adjustment on the sensor. If the sensor and cable are to be used for Retroreflective sensing, the sensitivity of the sensor must be adjusted low enough to avoid unwanted diffuse response from the targets to be sensed.
- Plastic fiber optic cables have a wide field of view.** A smaller field of view can be achieved by attaching an Extended Range Lens Assembly such as the #63–118 (see Plastic Fiber Optic Cables Accessories) to the sensing end of the fiber. These lens assemblies will also increase the available sensing distance.
- Plastic fiber optics cables can be used in applications where constant motion or flexing of the cable is required. Some coiled cables are available for these applications.
- Plastic fiber optic cables can be successfully applied in most industrial environments. However, where abrasion or occasional impact to the cable is a concern, stainless steel sheathed glass fiber optic cables may provide more durability.
- Chemical Resistance:** Acid and alkali solvents could damage the Polyethylene Fiber Core. The jacket will offer some washdown protection but long term use in chemical environments could destroy the core material.

**CAUTION:** Standard fiber optic cables can be used for explosion-proof applications in hazardous environments. Contact product support for application assistance.