

## Glass Fiber Optic Cables

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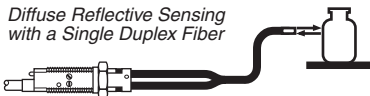
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Cutler-Hammer® Glass Fiber Optic Cables from Eaton's electrical business transmit light through a cable containing a bundle of tiny glass fibers. The cable can curve back and forth through equipment to the target and still transmit light with very little signal loss.

Two cable types are available:

**Duplex Fibers** contain both source and detector fibers intermixed at the cable end for diffuse reflective sensing. One cable is required for sensing. (It is also possible to use this style of cable and a retroreflector for reflex sensing.)

*Diffuse Reflective Sensing with a Single Duplex Fiber*



**Single Fibers** are used for thru-beam sensing. Separate cables are needed to carry the source light and the detector light, respectively. Two cables are required for sensing.

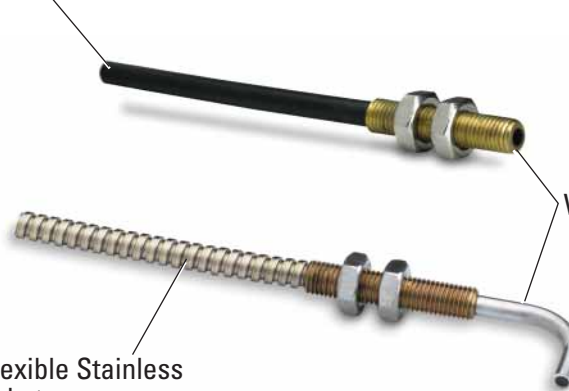
*Thru-Beam Sensing with Two Single Fibers*



**Unless otherwise noted, the products contained in this document are not designed or intended for use in human safety applications.**

## Durable Glass Fiber Optic Cables Expand Your Sensing Options

PVC Jacket Over Steel Monocoil



Wide Variety of Sensing Tips Available



Tough, Flexible Stainless Steel Jacket

### Product Features

- Fiber optic cables allow remote sensing in areas where space is restricted or tight viewing angles are required
- Ideal for high temperature applications up to 480°F (249°C)
- Choose from many styles and lengths to exactly suit your needs
- Use PVC jacket models for most applications, stainless steel for high temperature and harsh environments
- Larger fiber bundle size offers higher excess gain for longer ranges. Small size is useful for sensing extremely small targets


### Mounting End Compatibility

Two mounting end styles are available; standard and collar. Collar mounting cables and standard mounting cables are not interchangeable and must be coupled to the correct sensor.

	Description	Compatible Fiber Optic Sensors	Catalog Number
	Standard Mounting End	Prism Series, Comet Series, 50 Series, 55 Series, 80 Series, 70 Series and E51 Sensor Heads — Catalog Numbers E51DF1 and E51DF11	<b>Starts with: E51KF...</b>
	Collar Mounting End	E51 Sensor Heads — Catalog Numbers E51DF3, E51DF4 and E51DF33	<b>Starts with: E51KT...</b>

### Non-standard Cable Lengths






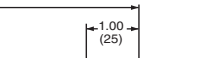


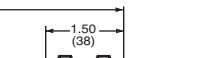


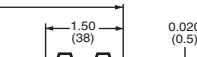


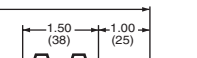


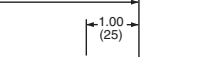
To order fiber optic cable in a non-standard length, replace last digit of listed Catalog Number with Code Suffix from table below. Example: for E51KF113 with a 10 foot cable, order E51KF1110. Built-to-order. May require minimum order quantity.

	Length of Fiber Optic Cable	Code Suffix
	18 Inches (1.5 Feet)	<b>15</b>
	24 Inches (2.0 Feet)	<b>2</b>
	48 Inches (4.0 Feet)	<b>4</b>
	72 Inches (6.0 Feet)	<b>6</b>
	120 Inches (10.0 Feet)	<b>10</b>

For Customer Service in the U.S. call **1-877-ETN CARE (386-2273)**, in Canada call **1-800-268-3578**.  
For Application Assistance in the U.S. and Canada call **1-800-426-9184**.

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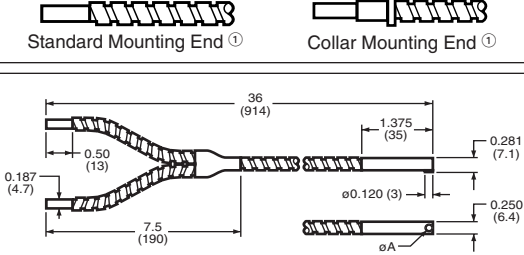

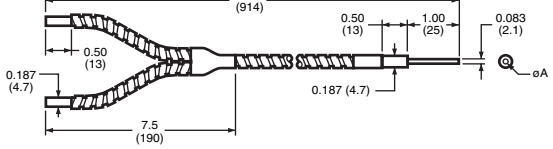

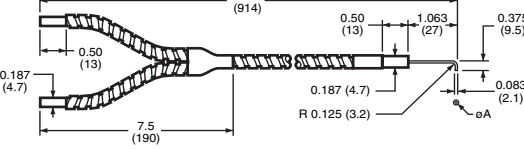

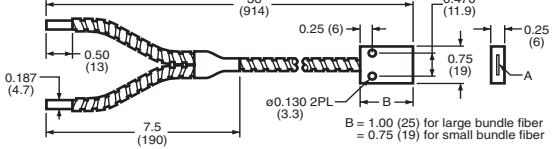

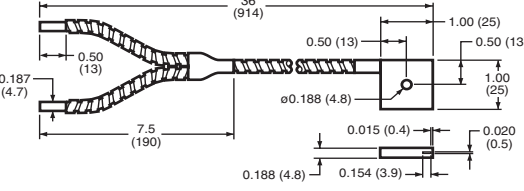
**Model Selection — Duplex Cables (for Diffuse Reflective Sensing)**

	Fiber Bundle Size A in Inches (mm)	Mounting End Style ①	Catalog Number		Approximate Dimensions in Inches (mm) — Stainless Steel Jacket Pictured	
			Stainless Steel Jacket	PVC/Monocoil Jacket	Standard Mounting End ①	Collar Mounting End ①
Forward Viewing, Unthreaded 	0.125 (3.2)	Standard	E51KF713	E51KF313	 Standard Mounting End ①	 Collar Mounting End ①
		Collar	E51KT713	E51KT313		
	0.0625 (1.6)	Standard	E51KF513	E51KF113		
		Collar	E51KT513	E51KT113		
Right-Angle Viewing, Unthreaded 	0.125 (3.2)	Standard	E51KF733	E51KF333	 Standard Mounting End ①	 Collar Mounting End ①
		Collar	E51KT733	E51KT333		
	0.0625 (1.6)	Standard	E51KF533	E51KF133		
		Collar	E51KT533	E51KT133		
Forward Viewing, Threaded Cable End 	0.125 (3.2)	Standard	E51KF723	E51KF323	 Standard Mounting End ①	 Collar Mounting End ①
		Collar	E51KT723	E51KT323		
	0.0625 (1.6)	Standard	E51KF523	E51KF123		
		Collar	E51KT523	E51KT123		
Forward Viewing, Rectangular Fiber Bundle, Threaded Cable End 	0.020 x 0.154 (0.5 x 3.9)	Standard	E51KF593	E51KF193	 Standard Mounting End ①	 Collar Mounting End ①
		Collar	E51KT593	E51KT193		
Right-Angle Viewing, Threaded Cable Shaft 	0.125 (3.2)	Standard	E51KF7A3	E51KF3A3	 Standard Mounting End ①	 Collar Mounting End ①
	0.0625 (1.6)	Standard	E51KF5A3	E51KF1A3		
Right-Angle Viewing, Threaded Cable End 	0.125 (3.2)	Standard	E51KF7B3	E51KF3B3	 Standard Mounting End ①	 Collar Mounting End ①
	0.0625 (1.6)	Standard	E51KF5B3	E51KF1B3		

① Collar mounting cables and standard mounting cables are not interchangeable and must be coupled to the correct sensor. See compatibility chart on Page 1.

■ Stocked product, typical order quantities guaranteed in stock.

**Model Selection — Duplex Cables (for Diffuse Reflective Sensing) (Continued)**



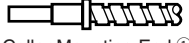

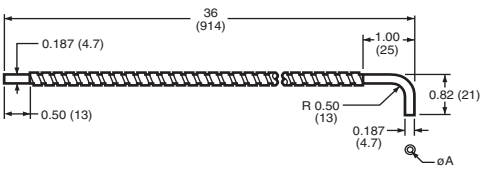

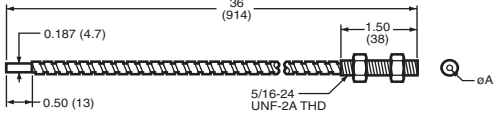

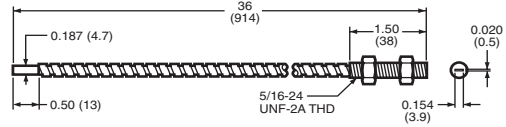

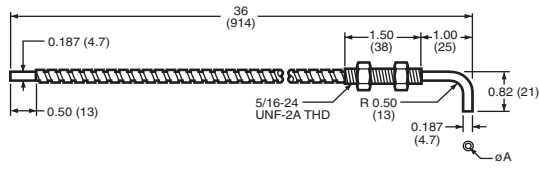

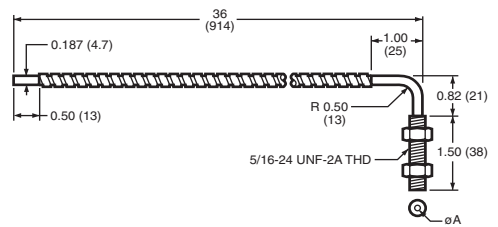
	Fiber Bundle Size A in Inches (mm)	Mounting End Style ①	Catalog Number		Approximate Dimensions in Inches (mm) — Stainless Steel Jacket Pictured	
			Stainless Steel Jacket	PVC/Monocoil Jacket	Standard Mounting End ①	Collar Mounting End ①
 <p>Right-Angle Viewing, Tight Viewing Angle, Unthreaded</p>	0.094 (2.4)	Standard	E51KF563	E51KF163		
		Collar	E51KT563	E51KT163		
 <p>Forward Viewing, Miniature Probe, Unthreaded</p>	0.0625 (1.6)	Standard	E51KF583	E51KF183		
		Collar	E51KT583	E51KT183		
 <p>Right-Angle Viewing, Miniature Probe, Unthreaded</p>	0.0625 (1.6)	Standard	E51KF573	E51KF173		
		Collar	E51KT573	E51KT173		
 <p>Forward Viewing, Rectangular Fiber Bundle, Thru-Hole Mounting</p>	0.032 x 0.382 (0.8 x 9.7)	Standard	E51KF743	E51KF343		
		Collar	—	E51KT343		
	0.020 x 0.154 (0.5 x 3.9)	Standard	E51KF543	E51KF143		
		Collar	—	—		
 <p>Right-Angle Viewing, Rectangular Fiber Bundle, Thru-Hole Mounting</p>	0.020 x 0.154 (0.5 x 3.9)	Standard	E51KF553	E51KF153		
		Collar	—	E51KT153		

① Collar mounting cables and standard mounting cables are not interchangeable and must be coupled to the correct sensor. See compatibility chart on Page 1.

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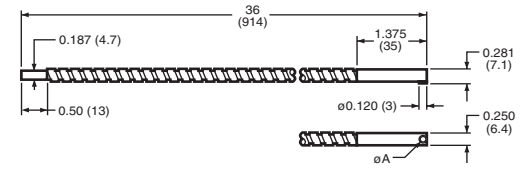

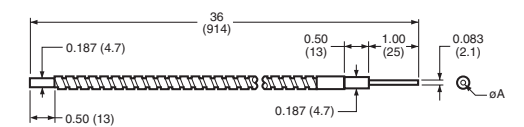

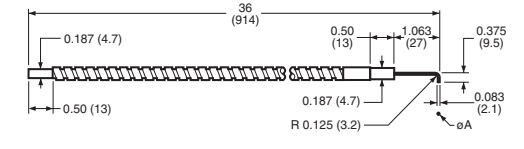

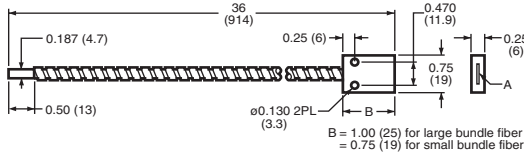

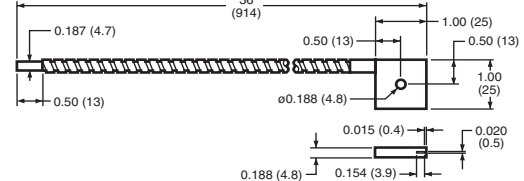
**Model Selection — Single Cables (for Thru-Beam Sensing)**

	Fiber Bundle Size A in Inches (mm)	Mounting End Style ①	Catalog Number		Approximate Dimensions in Inches (mm) — Stainless Steel Jacket Pictured	
			Stainless Steel Jacket	PVC/Monocoil Jacket	Standard Mounting End ①	Collar Mounting End ①
Forward Viewing, Unthreaded 	0.125 (3.2)	Standard	E51KF813	E51KF413	 	
		Collar	E51KT813	E51KT413		
	0.0625 (1.6)	Standard	E51KF613	E51KF213		
		Collar	E51KT613	E51KT213		
Right-Angle Viewing, Unthreaded 	0.125 (3.2)	Standard	E51KF833	E51KF433		
		Collar	E51KT833	E51KT433		
	0.0625 (1.6)	Standard	E51KF633	E51KF233		
		Collar	E51KT633	E51KT233		
Forward Viewing, Threaded Cable End 	0.125 (3.2)	Standard	E51KF823	E51KF423		
		Collar	E51KT823	E51KT423		
	0.0625 (1.6)	Standard	E51KF623	E51KF223		
		Collar	E51KT623	E51KT223		
Forward Viewing, Rectangular Fiber Bundle, Threaded Cable End 	0.020 x 0.154 (0.5 x 3.9)	Standard	E51KF693	E51KF293		
		Collar	E51KT693	E51KT293		
Right-Angle Viewing, Threaded Cable Shaft 	0.125 (3.2)	Standard	E51KF8A3	E51KF4A3		
		Collar	E51KT8A3	—		
	0.0625 (1.6)	Standard	E51KF6A3	E51KF2A3		
		Collar	E51KT6A3	—		
Right-Angle Viewing, Threaded Cable End 	0.125 (3.2)	Standard	E51KF8B3	E51KF4B3		
		Collar	E51KT8B3	—		
	0.0625 (1.6)	Standard	E51KF6B3	E51KF2B3		
		Collar	E51KT6B3	—		


① Collar mounting cables and standard mounting cables are not interchangeable and must be coupled to the correct sensor. See compatibility chart on Page 1.

■ Stocked product, typical order quantities guaranteed in stock.

**Model Selection — Single Cables (for Thru-Beam Sensing) (Continued)**

	Fiber Bundle Size A in Inches (mm)	Mounting End Style ①	Catalog Number		Approximate Dimensions in Inches (mm) — Stainless Steel Jacket Pictured  
			Stainless Steel Jacket	PVC/Monocoil Jacket	
Right-Angle Viewing, Tight Viewing Angle, Unthreaded  	0.094 (2.4)	Standard	E51KF663	E51KF263	
		Collar	E51KT663	E51KT263	
Forward Viewing, Miniature Probe, Unthreaded  	0.0625 (1.6)	Standard	E51KF683	E51KF283	
		Collar	E51KT683	E51KT283	
Right-Angle Viewing, Miniature Probe, Unthreaded  	0.0625 (1.6)	Standard	E51KF673	E51KF273	
		Collar	E51KT673	E51KT273	
Forward Viewing, Rectangular Fiber Bundle, Thru-Hole Mounting  	0.032 x 0.382 (0.8 x 9.7)	Standard	E51KF843	E51KF443	
		Collar	—	E51KT443	
	0.020 x 0.154 (0.5 x 3.9)	Standard	E51KF643	E51KF243	
Right-Angle Viewing, Rectangular Fiber Bundle, Thru-Hole Mounting  	0.020 x 0.154 (0.5 x 3.9)	Standard	E51KF653	E51KF253	
		Collar	—	E51KT253	

① Collar mounting cables and standard mounting cables are not interchangeable and must be coupled to the correct sensor. See compatibility chart on Page 1.

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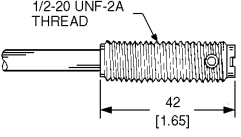

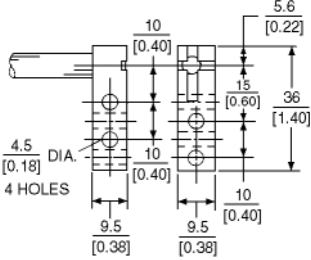
**Specifications**

	PVC/Monocoil	Stainless Steel
Temperature Range	-40° to +221°F (-40° to +105°C)	-50° to +480°F (-45° to +249°C)
Bend Radius	2.5X sheathing O.D. minimum	
Cable Length	3 feet (0.9m) standard; other lengths available, see Page 1.	


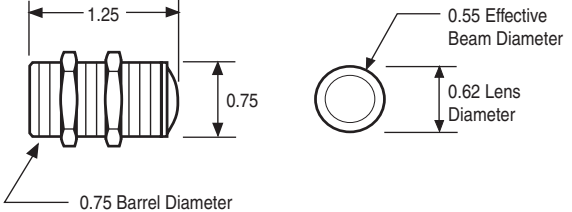

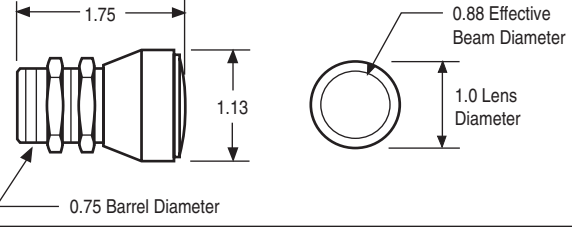

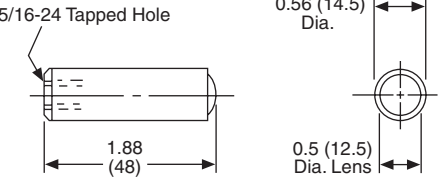

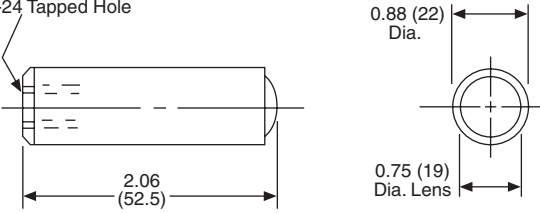

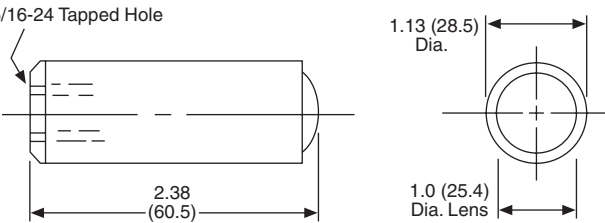
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**Model Selection — Accessories — Bead Buster Attachments**


For use with single fibers for thru-beam sensing in “wet” applications. Prevents beading of water on the cable tip (bead will distort the light beam and cause erratic operation). Face of bead buster must be installed vertically. To order, add Code Suffix from table below to cable Catalog Number. Example: E51KF113K. Available only on the following E51KF\_ and E51KT\_ cables:  
113 213 313 413

	Code Suffix	Approximate Dimensions in mm [Inches]
Threaded Bead Buster	<b>K</b>	
Integral Mounting Support Bar Bead Buster   With Right-Angle Cable      With Straight Cable	<b>L</b>	

### Model Selection — Accessories — Lenses

Provide increased sensing range in thru-beam mode for use with fiber optic cables with threaded tip.			
	Range Increase <sup>①</sup>	Catalog Number	Approximate Dimensions in Inches or Inches (mm)
0.5 Inch Diameter, Threaded 	15X	<b>6230A-6501</b>	
1 Inch Diameter, Threaded 	30X	<b>6230A-6502</b>	
0.5 Inch Diameter, Smooth 	7X	<b>E51KFH1</b>	
0.75 Inch Diameter, Smooth 	18X	<b>E51KFH2</b>	
1.0 Inch Diameter, Smooth 	35X	<b>E51KFH3</b>	

<sup>①</sup> Theoretical range increase with lens on both source and detector fiber optic cable.

 Stocked product, typical order quantities guaranteed in stock.