



See the PICO-GUARD Application and Design Guide (p/n 69763) for complete installation instructions.

These fiber optic safety grids are intended to be used with PICO-GUARD series controllers in personnel safety and equipment-protection applications.

## Features

- Rugged, non-contact, fiber optic element for perimeter and access guarding
- Choose models with 2, 3, or 4 beams, with beam spacing from 300 to 584 mm (12" to 23"), depending on applicable safety standards
- A dedicated fiber optic channel is required for each beam; additional elements may be grouped as needed on unused channels (for Grids with fewer than 4 beams)
- Integral 1 mm core PE-coated polished plastic fibers bundled into a 7 mm OD PVC jacket
- Robust black anodized housing with field-replaceable tempered glass lens window
- MEK-resistant housing withstands paint booth applications; accessory nylon flexible conduit available to protect fiber bundle
- Environmental rating of IEC IP65
- Type 4 per IEC 61496-2 and Safety Category 4 per ISO 13849-1 applications (when used with SFCDT-.. Controller)
- Easy installation with multiple mounting bracket options

## Models

Each PICO-GUARD Grid element is individually packaged and includes mounting hardware, a test piece and data sheet. Two elements of equal beam number and spacing are needed for each emitter/receiver pair; optical elements may be used interchangeably as emitters or receivers.

Model	Number of Beams	Beam Spacing	Overall Housing Length (L1)	Fiber Length	Application Standard
SFG2-584C8	2	584 mm (23.0")	768 mm (30.8")	2.4 m (8')	ANSI/RIA R15.06 ANSI B11
SFG2-584C15				4.5 m (15')	
SFG2-584C25				7.5 m (25')	
SFG2-584C50				15 m (50')	
SFG2-584C100				30 m (100')	
SFG3-533C8	3	533 mm (21.0")	1251 mm (49.2")	2.4 m (8')	ANSI/RIA R15.06 ANSI B11
SFG3-533C15				4.5 m (15')	
SFG3-533C25				7.5 m (25')	
SFG3-533C50				15 m (50')	
SFG3-533C100				30 m (100')	
SFG2-500C8	2	500 mm (19.7")	684 mm (26.9")	2.4 m (8')	EN 999
SFG2-500C15				4.5 m (15')	
SFG2-500C25				7.5 m (25')	
SFG2-500C50				15 m (50')	
SFG2-500C100				30 m (100')	
SFG3-400C8	3	400 mm (15.7")	984 mm (38.7")	2.4 m (8')	EN 999
SFG3-400C15				4.5 m (15')	
SFG3-400C25				7.5 m (25')	
SFG3-400C50				15 m (50')	
SFG3-400C100				30 m (100')	
SFG4-300C8	4	300 mm (11.8")	1084 mm (42.7")	2.4 m (8')	ANSI/RIA R15.06 ANSI B11 EN 999
SFG4-300C15				4.5 m (15')	
SFG4-300C25				7.5 m (25')	
SFG4-300C50				15 m (50')	
SFG4-300C100				30 m (100')	



### Warning ... Avoid Misapplication of this Product

PICO-GUARD optical elements must be properly installed and interfaced with a PICO-GUARD Fiber Optic Controller to be considered a safeguard. See the PICO-GUARD Controller Instruction Manual (p/n 69761) and the PICO-GUARD Application and Design Guide (p/n 69763) for complete installation instructions, maintenance instructions, and application limitations. Follow all installation and maintenance instructions with extreme care. **The user is responsible for following all local, state, and national laws, rules, codes, and regulations relating to the use of this safeguarding system in any particular application.**

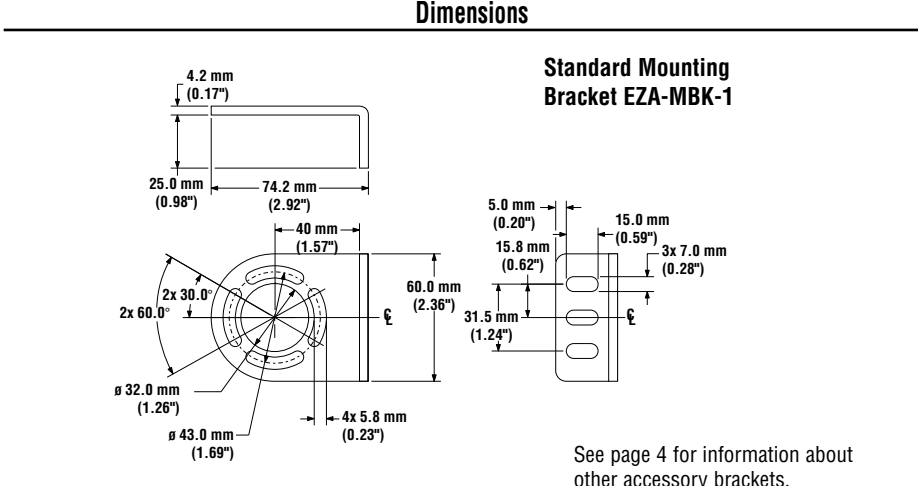
**Specifications**

<p><b>Operating Range</b></p> <p><b>NOTE: Do not cut polished fiber ends unless absolutely necessary</b> – cut only if the end has been damaged or contaminated, or if it must be cut to length. Use only the Model PFC-2 Fiber Cutter to cut fibers, when necessary. If a polished end is cut, the excess gain will be reduced, the advantage of polishing will be lost, and the operating range will be reduced. See warning below.</p> <p>Refer to PICO-GUARD Application and Design Guide (P/N 69763)</p>	<p>Range information is based on the use of integral polished fibers. The use of SFA-FS Fiber Splice or cutting the fiber will reduce range.</p> <p>In applications using SSM or MSM Series corner mirrors, range is reduced by approximately 8 percent for each mirror used.</p> <p><b>Minimum Operating Range:</b> 800 mm (2.6')</p> <p><b>Maximum Operating Range:</b> see table below</p> <table border="1" style="margin: 10px auto;"> <thead> <tr> <th colspan="6">Maximum Operating Range (All Models)</th> </tr> <tr> <th>Receiver \ Emitter</th> <th>SFG..8</th> <th>SFG..15</th> <th>SFG..25</th> <th>SFG..50</th> <th>SFG..100</th> </tr> </thead> <tbody> <tr> <td>SFG..8</td> <td>31.1 m (102')</td> <td>29.0 m (95')</td> <td>26.5 m (87')</td> <td>21.6 m (71')</td> <td>14.9 m (49')</td> </tr> <tr> <td>SFG..15</td> <td>29.0 m (95')</td> <td>27.1 m (89')</td> <td>24.7 m (81')</td> <td>20.1 m (66')</td> <td>14.0 m (46')</td> </tr> <tr> <td>SFG..25</td> <td>26.5 m (87')</td> <td>24.7 m (81')</td> <td>22.6 m (74')</td> <td>18.3 m (60')</td> <td>12.8 m (42')</td> </tr> <tr> <td>SFG..50</td> <td>21.6 m (71')</td> <td>20.1 m (66')</td> <td>18.3 m (60')</td> <td>14.9 m (49')</td> <td>10.4 m (34')</td> </tr> <tr> <td>SFG..100</td> <td>14.9 m (49')</td> <td>14.0 m (46')</td> <td>12.8 m (42')</td> <td>10.4 m (34')</td> <td>7.0 m (23')</td> </tr> </tbody> </table>	Maximum Operating Range (All Models)						Receiver \ Emitter	SFG..8	SFG..15	SFG..25	SFG..50	SFG..100	SFG..8	31.1 m (102')	29.0 m (95')	26.5 m (87')	21.6 m (71')	14.9 m (49')	SFG..15	29.0 m (95')	27.1 m (89')	24.7 m (81')	20.1 m (66')	14.0 m (46')	SFG..25	26.5 m (87')	24.7 m (81')	22.6 m (74')	18.3 m (60')	12.8 m (42')	SFG..50	21.6 m (71')	20.1 m (66')	18.3 m (60')	14.9 m (49')	10.4 m (34')	SFG..100	14.9 m (49')	14.0 m (46')	12.8 m (42')	10.4 m (34')	7.0 m (23')
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<b>Beam Diameter</b>	25 mm (0.98")																																										
<b>Effective Aperture Angle (EAA)</b>	Meets Type 4 requirements per IEC 61406-2, Section 5.2.9; ± 2.5° at 3 m																																										
<b>Operating Conditions</b>	<b>Temperature range:</b> 0° to +70° C (+32° to 158° F) <b>Max. relative humidity:</b> 95% (non-condensing)																																										
<b>Environmental Rating</b>	IEC IP65																																										
<b>Construction</b>	Black anodized aluminum housing and label; tempered glass window; zinc end caps; polyethylene-coated plastic fiber optic cable within PVC outer jacket																																										

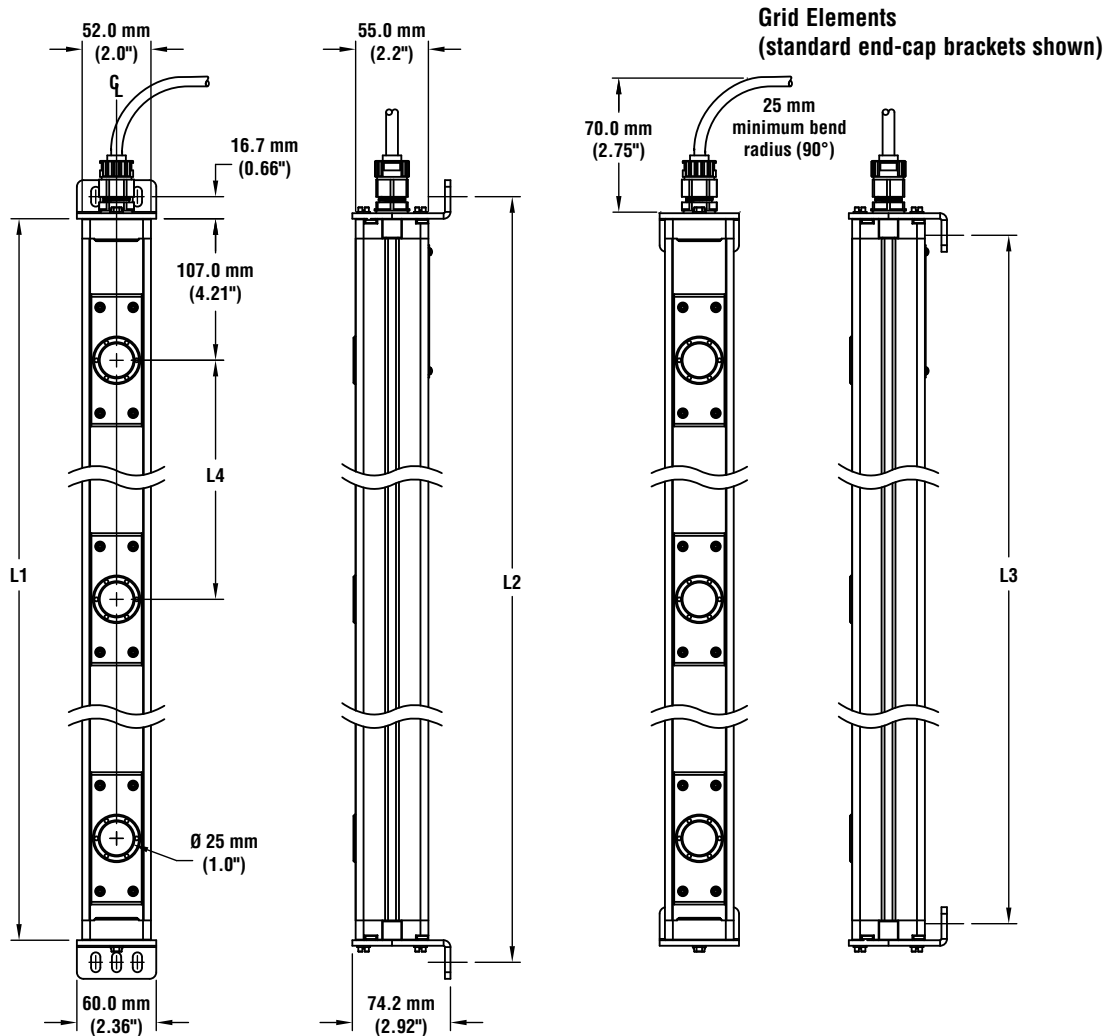
**WARNING . . . Cutting Optical Fibers**

If the optical fibers are to be cut, the fibers must be correctly re-labeled with supplied labels before cutting to minimize the possibility of incorrect optical channel assignment.

**Under no circumstances should the fibers be cut to less than 2.4 m (8') long, or the Effective Aperture Angle (EAA) may increase, resulting in a greater possibility of an optical short circuit and preventing detection of an individual. This could result in serious bodily injury or death.**



## Dimensions, continued



Model	Beam Spacing L4	Housing Length		
		L1	L2	L3
SFG2-584..	584 mm (23.0")	768 mm (30.8")	802 mm (31.6")	743 mm (29.3")
SFG3-533..	533 mm (21.0")	1251 mm (49.2")	1284 mm (50.6")	1226 mm (48.3")
SFG2-500..	500 mm (19.7")	684 mm (26.9")	717 mm (28.2")	659 mm (25.9")
SFG3-400..	400 mm (15.7")	984 mm (38.7")	1017 mm (40.1")	959 mm (37.8")
SFG4-300..	300 mm (11.8")	1084 mm (42.7")	1117 mm (44.0")	1059 mm (41.7")

### Hardware included with each Grid element:

Qty.	Description
1	Test rod, model <b>STP-3</b> , 45 mm (1.75") dia.
1	Extra set of ID labels for individual fibers
1	<b>EZA-MBK-1</b> mounting bracket kit, includes the following:
2	Standard mounting brackets (mount to end caps or to housing sides)
4	M5 Screws (bracket to housing)
4	M5 T-nuts (for side-mount)
4	M6 x 20 mm Screws (bracket to mounting surface)
4	M6 Nuts with captive lock washers

## Mounting, Installation and Alignment

See the PICO-GUARD Controller Manual (p/n 69761) and PICO-GUARD Application and Design Guide (p/n 69763) for complete mounting, installation, alignment and operation information.

PICO-GUARD Grid elements may be mounted using the hardware provided. Optional mounting brackets are available, see the table below and the PICO-GUARD Application and Design Guide. Refer to the appropriate machine safety standards for proper safeguarding requirements and guidelines. The point of detection must be at a distance such that exposure to the hazard is not possible.

## Accessories and Replacement Parts

Model	Description	
SFA-FCC-008	2.4 m (8')	Flexible nylon MEK-resistant conduit snaps into housing strain relief fitting to provide protection to fibers. Cuts to length easily, using a box cutter or similar blade. Cable gland available below to provide MEK-resistant protection from emitter/receiver housing to controller enclosure.
SFA-FCC-015	4.5 m (15')	
SFA-FCC-025	7.5 m (25')	
SFA-FCC-050	15 m (50')	
SFA-FCC-100	30 m (100')	
SFA-FCC-CGM20	Cable gland, M20 threads	
EZA-MBK-2	Bracket adapter for mounting to MSA series stand	
EZA-MBK-3	Side-swivel bracket kit	
EZA-MBK-9	Adjustable bracket kit	
EZA-MBK-1	Replacement standard bracket	
SFA-W-1	Field-replaceable tempered glass window with aluminum ring and o-ring	
STP-3	Test piece, 1.75" diameter	



**WARRANTY:** Banner Engineering Corp. warrants its products to be free from defects for one year. Banner Engineering Corp. will repair or replace, free of charge, any product of its manufacture found to be defective at the time it is returned to the factory during the warranty period. This warranty does not cover damage or liability for the improper application of Banner products. This warranty is in lieu of any other warranty either expressed or implied.