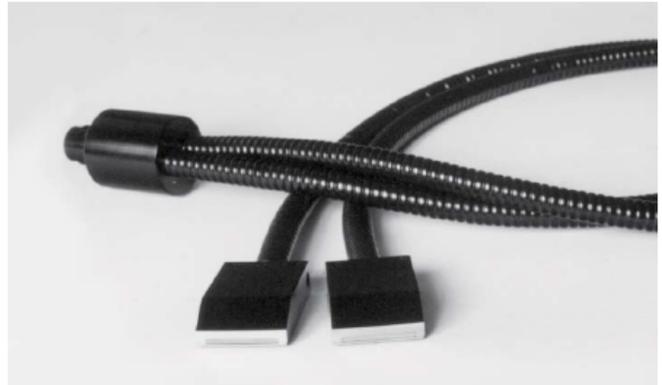


# Lightlines, 1", 2", & 3"

Alternative to fiber optic bundles for narrower and elongated illumination for Microscopy and Machine Vision Inspection applications with higher uniformity than any LED chips can achieve due to position density



1" (25) Dual Lightline, A08579

- Small, uniform fields of view
- Narrow body design and offset position of the line on 1" (25) and 2" (51) bodies allows close positioning for darkfield effect
- 3" (76)\* models are calibrated with DDL-bulb to  $\pm 8$  gray scale levels at a mean of 200 with a gamma setting of 1.0 to deliver optimum uniformity (see chart)
- Uniformity of 1" (25) and 2" (51) lines is better than  $\pm 8$  gray scales (See reference section for more information on uniformity of fiber optic products)
- Rugged aluminum body and light source ferrule with black anodized finish, PVC covered metal tubing protects the fiber bundle
- Lightline holders and support products available
- Custom lengths, bundle exits, multiple combinations (dual, quad, etc.) and line widths can be designed for your unique requirements; Combine lightlines with other fiber optic components in a single input to create unique lighting effects
- Cylindrical and apertured lenses are available for most lightline models (Made-to-Order)



One leg of Dual or Quad 3" (76) Lightline with Cylindrical Lens

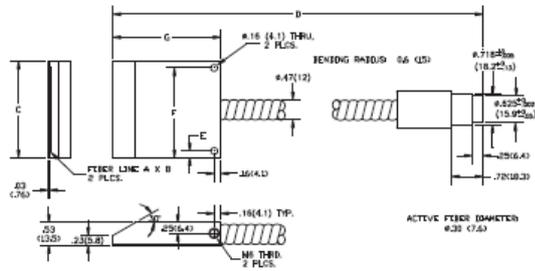
# Lightlines, 1", 2", & 3"

Dimensions in ( ) are in mm

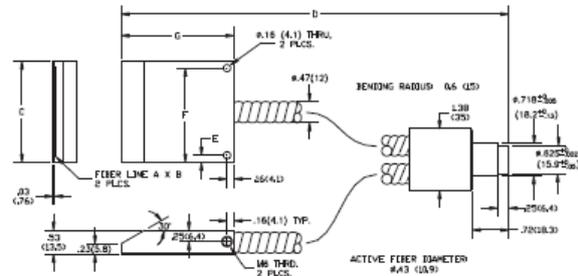
: This product is manufactured with glass fiber. Not for use in cable/hose carrier. Call MORITEX to discuss moving cable/hose carrier applications.

**Input:** Black Anodized Aluminum  
**Body:** Black Anodized Aluminum  
**Sheathing:** PVC Covered Metal Tubing

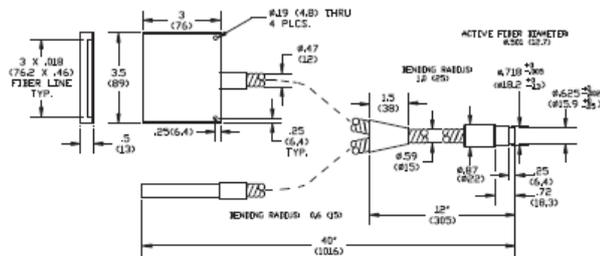
## A08588 & A08589 Single Lightlines



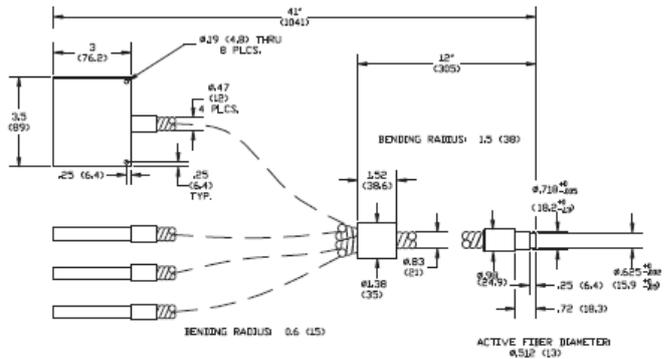
## A08579 & A08583 Dual Lightlines



## A08580 Dual Lightline



## A08584 Quad Lightline



## Lightlines, 1", 2", & 3" and Lenses

Part No.	Line Dimensions Length x Width	Input Active Fiber Dia.	Gray Scale Uniformity <sup>^</sup>	Part No. for Lens	
				Cylindrical	Apertured
Single line configuration w/36" bundle length					
A08588	1" x .070" (25 x 1.8)*	.30" (7.6)	< ± 8	★ A08571	Custom
A08589	2" x .035" (51 x .89)	.30" (7.6)	< ± 8	★ A08572	Custom
Dual line configuration w/36" bundle length					
A08579	1" x .070" (25 x 1.8)	.43" (10.9)	< ± 8	A08571	Custom
A08583	2" x .035" (51 x .89)	.43" (10.9)	< ± 8	A08572	Custom
A08580	3" x .018" (76 X .46)	.36" (9.1)	± 8	A08582	Custom
Quad line configuration w/36" bundle length					
A08584	3" x .018" (76 X .46)	.51" (13.0)	± 8	★ A08582	Custom

<sup>^</sup> Gamma setting of 1.0 Dimensions in ( ) are in mm

★ Made-to-order products.

## Matrix for A08588 & A08589 Lightlines

Part No.	A	B	C	D	E	F	G
A08588	1"(25)	.07"(1.8)	1.25"(31.8)	38"(965.2)	.16"(4.1)	1.1"(28)	2"(50.8)
A08589	2"(51)	.035"(.89)	2.25"(57.2)	38.5"(978)	.16"(4.1)	2.1"(53)	2.5"(63.5)

## Matrix for A08579 & A08583 Lightlines

Part No.	A	B	C	D	E	F	G
A08579	1"(25)	.07" (1.8)	1.25*(31.8)	38*(965.2)	.16*(4.1)	1.1*(28)	2*(50.8)
A08583	2"(51)	.035*(.89)	2.25*(57.2)	38.5*(978)	.16*(4.1)	2.1*(53)	2.5*(63.5)

# Lightlines

Uniform lines of light ideal for Machine Vision and line scan applications achieving higher uniformity than any LED chips due to position density



12" Lightline, A08912

- Calibrated with DDL-bulb to a specified number of gray scale levels (see chart) at a mean of 200 with a gamma setting of 1.0 to deliver optimum uniformity (See reference section for more information on uniformity of fiber optic products)
- Assembly method accurately positions the fiber line within the body on all three planes, to a tolerance of  $\pm .004''(0.1)\dagger$ , assuring the fiber axis will be parallel with the mounting surface of the body
- Fiber bundle exit locations include back-side (standard exit), back-center, and true-side
- Rugged aluminum body and light source ferrule with black anodized finish, PVC covered metal tubing protects the fiber bundle
- Lightline holders and support products available
- Custom lengths, bundle exits, multiple combinations (dual, quad, etc.) and line widths can be designed for your unique requirements
- Cylindrical and apertured lenses are available for most lightline models (Made-to-Order)



Dual Lightlines, A08975



Apertured Lens, A08806, Cylindrical Lens, A08826

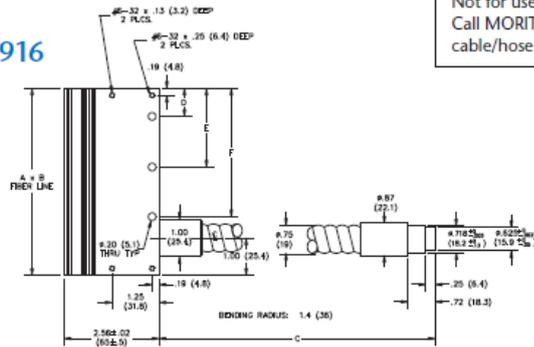
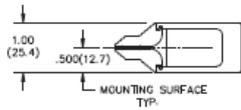
# Lightlines

Dimensions in ( ) are in mm

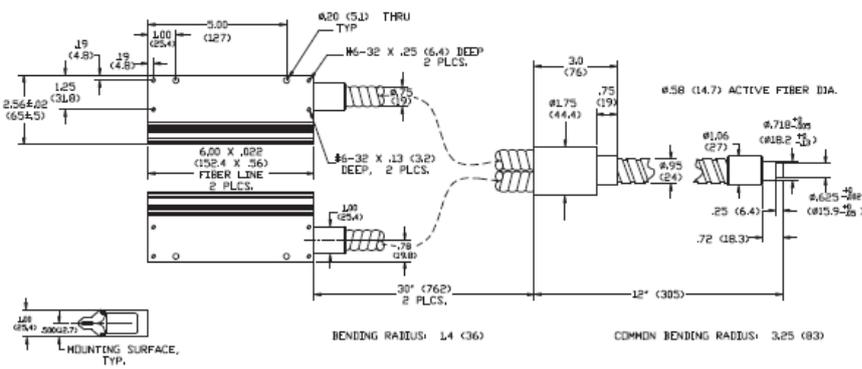
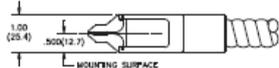
Input: Black Anodized Aluminum  
 Body: Black Anodized Aluminum  
 Sheathing: PVC Covered Metal Tubing

Warning : This product is manufactured with glass fiber. Not for use in cable/hose carrier. Call MORITEX to discuss moving cable/hose carrier applications.

## A08903 – A08916 Lightlines



## A08975 Dual Lightline



### Lightlines and Lenses

Part No.	Line Dimensions Length x Width	Input Active Fiber Dia.	Gray Scale Uniformity <sup>A</sup>	P/N Lens	
				Cylindrical	Apertured
Single line configuration w/30" bundle length and back-side single exit					
A08903	3" x .040" (76 x 1.02)	.39" (10)†	± 8	★ A08823	★ A08803
A08904	4" x .036" (102 x .91)	.43" (11)	± 8	★ A08824	★ A08804
A08905	5" x .040" (127 x 1.02)	.51" (13)	± 8	★ A08825	★ A08805
A08906	6" x .033" (152 x .84)	.51" (13)	± 8	★ A08826	★ A08806
★A08907*	7" x .029" (178 x .74)	.51" (13)	± 8	★ A08827	Custom
A08908	8" x .025" (203 x .64)	.51" (13)	± 8	★ A08828	★ A08808
★A08909*	9" x .022" (229 x .56)	.51" (13)	± 8	★ A08829	Custom
A08910	10" x .020" (254 x .51)	.51" (13)	± 8	★ A08830	★ A08810
★A08911*	11" x .018" (279 x .46)	.51" (13)	± 8	★ A08831	Custom
A08912	12" x .016" (305 x .41)	.51" (13)	± 8	★ A08832	★ A08812
★A08913*	13" x .015" (330 x .38)	.51" (13)	± 10	★ A08833	Custom
Custom	14" x .014" (356 x .36)	.51" (13)	± 10	★ A08834	Custom
★A08915*	15" x .013" (381 x .33)	.51" (13)	± 10	★ A08835	Custom
A08916	16" x .012" (406 x .30)	.51" (13)	± 10	★ A08836	★ A08816
Dual line configuration w/true-side bundle exit (see photo above)					
A08975	6" x .022" (152 x .56)	.58" (16)	± 8	A08826	A08806

\* Items are made to order, and may require additional 3-4 weeks delivery  
 Gamma setting of 1.0

Dimensions in ( ) are in mm

★ Made-to-order products.

### Matrix for A08903 - A08916 Lightline Drawing

Part No.	A	B	C	D	E	F
A08903	3" (76)	.040" (1.0)	30" (762)	.75" (19.1)	1.5" (39)	n/a
A08904	4" (102)	.036" (.91)	30" (762)	.75" (19.1)	2.5" (64)	n/a
A08905	5" (127)	.040" (1.02)	30" (762)	.75" (19.1)	3.5" (89)	n/a
A08906	6" (152)	.033" (.84)	30" (762)	.75" (19.1)	4.5" (114)	n/a
A08907	7" (178)	.029" (.74)	30" (762)	.75" (19.1)	5.5" (140)	n/a
A08908	8" (203)	.025" (.64)	30" (762)	.75" (19.1)	6.5" (165)	n/a
A08909	9" (229)	.022" (.56)	30" (762)	.75" (19.1)	7.5" (191)	n/a
A08910	10" (254)	.020" (.51)	30" (762)	.75" (19.1)	8.5" (216)	n/a
A08911	11" (279)	.018" (.46)	30" (762)	.75" (19.1)	9.5" (241)	n/a
A08912	12" (305)	.016" (.41)	30" (762)	.75" (19.1)	10.5" (267)	n/a
A08913	13" (330)	.015" (.38)	30" (762)	.75" (19.1)	6.13" (156)	11.5" (292)
Custom	14" (336)	.014" (.38)	30" (762)	.75" (19.1)	6.63" (168)	12.5" (316)
A08915	15" (381)	.013" (.33)	30" (762)	.75" (19.1)	7.13" (181)	13.5" (343)
A08916	16" (406)	.012" (.30)	30" (762)	.75" (19.1)	7.63" (194)	14.5" (368)

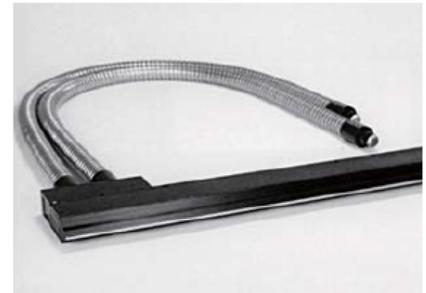
# Spatially Randomized Lightlines

A patented exclusive, these 24" and 40" lightlines are ideal for web and line scanning applications requiring exceptional uniformity



Continuous Lightline, A08940

- Manufactured using a patented process called spatial randomization, the process allows light from each input to be distributed over the entire length of the line so that if a light source fails while using multiple inputs, intensity is evenly reduced over the length of the line, rather than losing all light in a section of the line
- Calibrated to  $\pm 15$  gray scale levels at a mean of 200 with a gamma setting of 1.0 to deliver optimum uniformity (See reference section for more information on uniformity of fiber optic products)
- Assembly method accurately positions the fiber line within the body on all three planes, to a tolerance of  $\pm .004''(0.1)\dagger$ , assuring the fiber axis will be parallel with the mounting surface of the body
- 24" (610) lightline accepts our dichroic filters and diffusers, to use color filters on the 40" (1016) line part number A08931, color filter adapter, is required
- Rugged aluminum body with a black anodized finish, stainless steel tubing protects the fiber bundle
- Cylindrical lenses are available and are designed to collect light exiting the lightline to increase intensity up to a factor of 10
- Custom lengths, bundle exits, and line widths can be designed for your unique requirements



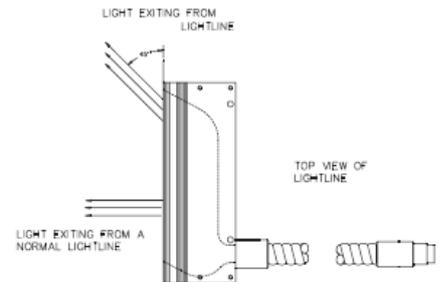
Continuous Lightline, A08964



# Lightline, 45°

Engineered and designed to emit light at a 45° angle along the length of the line.

- Output fibers are angled 30° to the nosepiece, as a result they are polished on a bias which causes emitted light to exit at 45° to the nosepiece allowing the line to be positioned off-axis to the object and illuminate the field-of-view without loss of uniformity, while avoiding interference with the camera
- Useful for illuminating a rectangular surface area where the features are perpendicular to the line body, an important consideration in space constrained systems
- Lightline is calibrated to  $\pm 8$  gray scales at a mean of 200 with a gamma setting of 1.0, for optimum uniformity with DDL-lamp
- Assembly method accurately positions the fiber line within the body on all three planes, to a tolerance of  $\pm .004''(0.1)\dagger$ , assuring the fiber axis will be parallel with the mounting surface of the body
- Rugged aluminum body with black anodized finish, PVC covered metal tubing protects the fiber bundle
- Custom configurations can be engineered for unique requirements
- Cylindrical and apertured lenses are adjustable and easy to attach



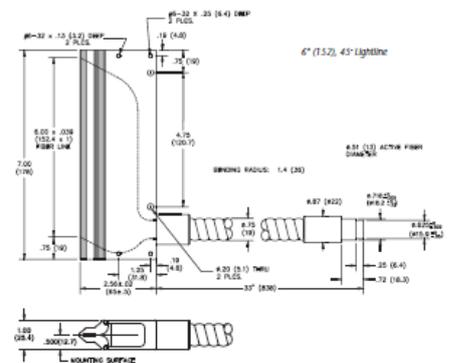
## Lightline, 45°

Dimensions in ( ) are in mm

**Input:** Black Anodized Aluminum

**Body:** Black Anodized Aluminum

**Sheathing:** PVC Covered Metal Tubing



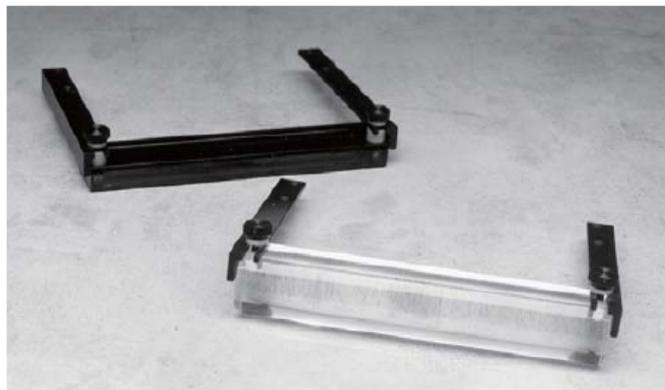
## Lightline, 45°

Part No.	Line Dimensions Length x Width	Input Active Fiber Dia.	Gray Scale Uniformity <sup>^</sup>	Part No. for Lens	
				Cylindrical	Apertured
Custom	6" x .039" (152 x 1.0)	.51" (13)	$\pm 8$	Custom	Custom

# Lightline Lenses

Cylindrical and apertured lenses for 1" to 16" lightlines.

- Cylindrical and apertured lenses are available for most lightline models, most are Made-to-Order but they can be custom made for all models
- Cylindrical lens attachments are designed to collect light exiting the lightline to increase intensity up to a factor of 10
- Apertured lens attachments are designed to project a more collimated line of light, not to increase light intensity
- Lenses are adjustable and easily attach to SCHOTT lightlines
- Custom length and configurations are available



Cylindrical and apertured lenses, A08806 & A08826



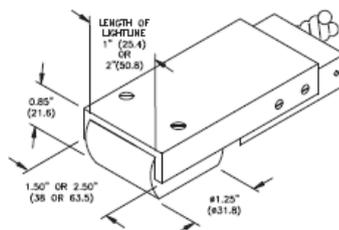
3" (76 mm) Lightline with A08582 Cylindrical Lens

## Lightline Lenses

Dimensions in ( ) are in mm

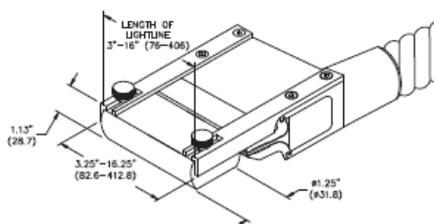
### A08571

Cylindrical and Apertured Lenses



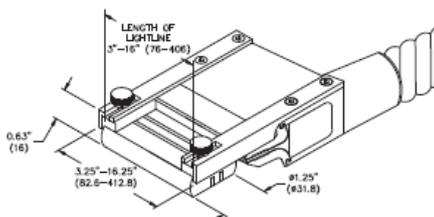
### A08824, A08826, A08832

Cylindrical Lenses



### A08806

Apertured Lenses



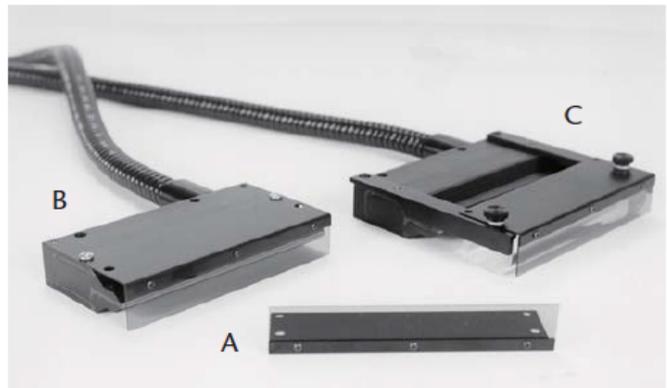
## Lenses and Polarizer Kits

Lightline Part No.	Lens Part No.	
	Cylindrical	Apertured
1", 2", & 3" Lightlines		
A08579	★ A08571	Custom
A08580	★ A08582	Custom
A08583	★ A08572	Custom
A08584	A08572	Custom
A08588	A08571	Custom
A08589	A08572	Custom
3" to 16" Continuous Lightlines		
A08903	A08823	Custom
A08904	A08824	Custom
A08905	A08825	Custom
A08906	A08826	Custom
A08907	A08827	Custom
A08908	A08828	Custom
A08909	A08829	Custom
A08910	A08830	Custom
A08911	A08831	Custom
A08912	A08832	Custom
A08913	A08833	Custom
A08914	A08834	Custom
A08915	A08835	Custom
A08916	A08836	Custom
A08975	A08826	A08806
24" to 40" Continuous Lightlines		
A08940	A08860	Custom
A08964	A08864	Custom
45 Degree Lightline		
Custom	Custom	Custom

★ Made-to-order products

# Lightline Linear Polarizer Kits

- Developed for use with 3" to 16" (227 to 406 mm) lightlines to enhance contrast on highly reflective surfaces for area and line scanning applications
- Easily mount on SCHOTT lightlines alone or with cylindrical and apertured lenses affixed to the lightline
- Polarizer(s) should be used with an analyzer supplied by the customer which is typically attached to the camera objective
- Two polarizers are included in the kit; one polarizes in the horizontal axis and the other polarizes in the vertical axis
- Most options are made-to-order or custom



(A) Lightline polarizer assembly, A08845,  
 (B) Polarizer affixed to a 5" lightline,  
 (C) Polarizer affixed to a cylindrical lens on a lightline

## Linear Polarizer Kits

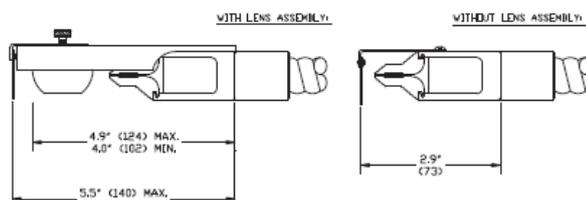
Lightline Part No.	Polarizer Kits Part No.
A08903	Custom
A08904	★ A08844
A08906	Custom
A08908	Custom
A08910	Custom
A08912	Custom
A08914	Custom
A08916	Custom
A08975	Custom

★ Made-to-order products.

## DCR® III Light Source

### A08843 - A08856 Polarizers

Dimensions in ( ) are in mm



# Lightlines Support Apparatus

For accurate positioning in both industrial and laboratory environments



Lightline Holder, A08901



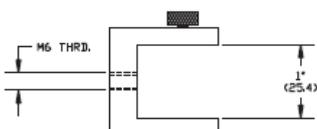
3" Lightline, A08903, with Holder, A08901, supported by an articulated arm, A08506, and base, A08507

## Lightlines Support Apparatus

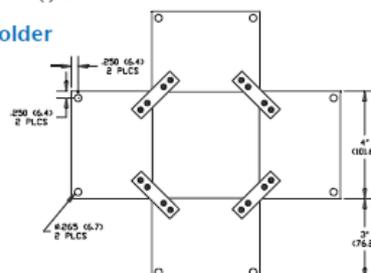
Dimensions in ( ) are in mm

### A08901

#### Holder



### Quad Holder



## Support Apparatus

Part No.	Description
A08901	Lightline holder with M6 thread. Will support 3" (76) to 10" (254) single lightlines when attached to an articulated arm and base.

# Single and Dual Backlights

Patented SCHOTT Backlights are calibrated to provide bright, even illumination for Microscopy and Machine Vision applications.

- Calibrated with DDL-bulb from  $\pm 13$  to  $\pm 15$  gray scale levels at a mean of 200, gamma setting of 1.0, using a patented process to create diffuse, uniform illumination within the active area (Uniformity scans are available upon request)
- The white acrylic diffuser plate provides the optimum combination of uniformity and intensity, a protective IR filter is included with every unit
- Backlight housing is made of rugged, black anodized aluminum, the plastic fiber bundle is protected with flexible PVC covered metal tubing
- Compact, low profile housing fits in small spaces
- Can be used to create a crisp edge definition, or soft, diffuse incident light
- Dual and quad backlights increase lighting versatility, additional combinations and sizes can be custom ordered
- Intended for use with strobes and ColdVision Series light sources; other sources, particularly those without an IR filter, may damage the plastic fibers
- ColdVision dichroic color filters can be used on the products in conjunction with the A08931 backlight color filter adapter (see photo)



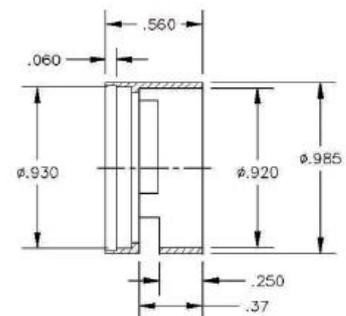
8" x 8" Backlight, A08927



Dual 2" x 2" Backlight, A08922



IR Filter A08921 with measurements



## Single and Dual Backlights

Dimensions in ( ) are in mm

Warning : The IR filter on the input protects the fibers from damage caused by IR absorption.

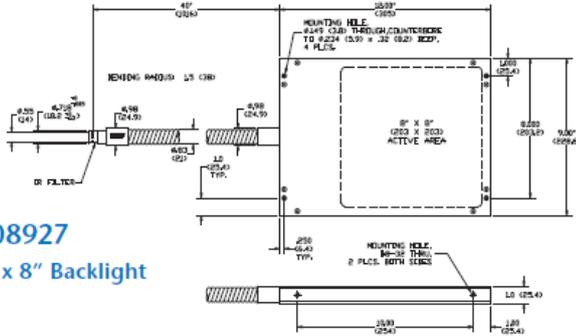
Input: Black Anodized Aluminum

Bundle Sheathing: PVC Covered Metal Tubing

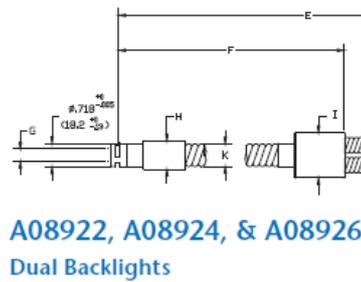
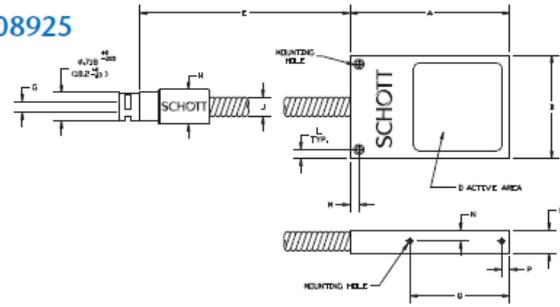
Max Fiber Temperature: 70°

### A08920, A08923, & A08925

#### Single Backlights



#### A08927 8" x 8" Backlight



## Backlights

Part No.	Active Area	Housing Dimensions	Gray Scales	Bundle Length	Common Bundle Length
<b>Single Configuration</b>					
A08920	2" x 2" (51 x 51)	4" x 2.6" x .59" (102 x 66 x 14.9)	±13	40" (1016)	N/A
A08923	3" x 3" (76 x 76)	6" x 3.5" x .75" (152 x 89 x 16)	±13	40" (1016)	N/A
A08925	4" x 4.88" (102 x 124)	9" x 5" x .78" (229 x 127 x 19.7)	±13	40" (1016)	N/A
A08927	8" x 8" (203 x 203)	12" x 9" x 1" (305 x 229 x 25.4)	±15	40" (1016)	N/A
<b>Dual Configuration</b>					
A08922	2" x 2" (51 x 51)	4" x 2.6" x .59" (102 x 66 x 14.9)	±13	42" (1067)	10" (254)
A08926	4" x 4.88" (102 x 124)	9" x 5" x .78" (229 x 127 x 19.7)	±13	37" (940)	10" (254)

## Matrix for Single and Dual Backlights

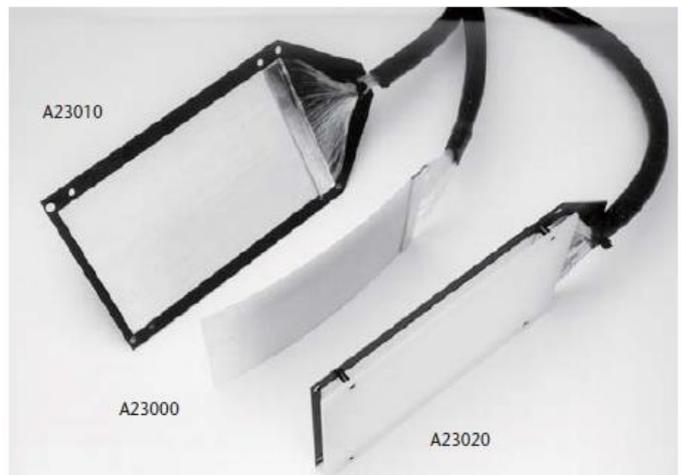
Part No.	Housing Dimensions LX W X H	Active Area	Overall Bundle Length
Ref. Letter	A, B, C	D	E
A08920	4"x2.6"x.59" (102x66x14.9)	2"x2" (51x51)	40" (1016)
A08922	4"x2.6"x.59" (102x66x14.9)	2"x2" (51x51)	42" (1067)
A08923	6"x3.5"x.75" (152x89x19.1)	3"x3" (76x76)	40" (1016)
A08924	6"x3.5"x.75" (152x89x15.9)	3"x3" (76x76)	40" (1016)
A08925	9"x5"x.78" (229x127x19.7)	4"x4.88" (102x124)	37" (940)
A08926	9"x5"x.78" (229x127x19.8)	4"x4.88" (102x124)	37" (940)

## Matrix for Single and Dual Backlights (Continuation)

Part No.	Common Bundle Length	Active Input Dia.	Ferrule Dia.	Coupler Dia.	Tubing Dia.	Top Mounting Hole Location	Top Mounting Hole Dimensions	Side Mounting Hole Location	Side Mounting Hole Dimensions	Bend Radius
Ref. Letter	F	G	H	I	JK	L/M	THRU/DIA/C'BORE DIA/DEPTH	N/P/Q	THREAD/DEPTH	
A08920	N/A	.28" (7.0)	.87" (22.1)	N/A	.47" (12)	.225"/.225" (5.72/5.72)	.156"/.25"/.150" (4.0/6.4/3.8)	.28"/.20"/2.50" (7.2/5.1/63.5)	#4-40 UNC 2A/.38 (9.6)	.6" (15)
A08922	10" (254)	.39" (9.9)	.87" (22.1)	1.38" (34.9)	.47"/.67" (12/17)	.225"/.225" (5.72/5.72)	.156"/.25"/.150" (4.0/6.4/3.8)	.28"/.20"/2.50" (7.2/5.1/63.5)	#4-40 UNC 2A/.38 (9.6)	.6"/1.2" (15)/(30)
A08923	N/A	.32" (8.1)	.87" (22.1)	N/A	.60" (15)	.187"/.187" (4.75/4.75)	.177"/.28"/.165" 4.5/7.1/4.2	.32"/100"/5.00" (8.1/25.4/127)	#6-32/.25" (6.4)	1" (25)
A08925	N/A	.39" (9.9)	.87" (22.1)	N/A	.68" (17.3)	.425"/.425" (10.80/10.80)	.250"/.50"/.300" (6.4/12.7/7.6)	.36"/.20"/5.75" (9.1/5.08/151)	#6-32 UNC 2A/.38 (9.6)	1" (25)
A08926	10" (254)	.55" (13.8)	.98" (24.9)	1.50" (38.1)	.68"/.83" (17/21)	.425"/.425" (10.80/10.80)	.250"/.50"/5.00" (6.4/12.7/7.6)	.36"/.20"/5.75" (9.1/5.08/146)	#6-32 UNC 2A/.38" (9.6)	1/1.5" (25)/(38)

# PANELite® Backlights

A versatile addition to the extensive line of our patented backlights.



- Patented process creates diffuse, uniform† illumination within the active area
- Slim profile to fit the most restrictive space requirements and economical since no housing is required
- Dependable performance built into three standard configurations, all with an IR filter included
- Flexible panel A23000 can create a seamless, curved background and can be trimmed to final size
- When used with a curved diffuser (not included) PANELite® backlights are ideal for multi-camera inspection of cylindrical surfaces
- Intended for use with strobes and ColdVision Series light sources; other sources, particularly those without an IR filter, may damage the plastic fibers
- Can be used with all of our dichroic color filters in conjunction with the A08931 backlight color filter adapter



PANELite® Backlight with adhesive back, A23000

## Typical Applications

- Glass inspection
- Edge detection
- Photography
- Instrumentation display

Note: Uniformity Tolerances varies with size of active area. See technical specifications

## Special Configurations

- Due to the special nature of these products, all are models made-to-order
- PANELite® backlights can be manufactured with different active areas, placement of outputs and mounting hole locations; contact us for a custom quote

## PANELite® Backlights

Dimensions in ( ) are in mm

Warning : This product contains plastic fibers. To avoid fiber damage use only with SCHOTT or other approved light sources. Do not use input filters or diffusers without a SCHOTT adapter. Thermal transfer may cause damage to the fibers. All PANELite® Backlights have permanent input IR filters which must be kept clean. Clean panels with isopropanol only. OTHER SOLVENTS will damage the fiber and affect uniformity.

Transmits visible light - from 400nm to 700nm

Temperature limit 0° to 70° C

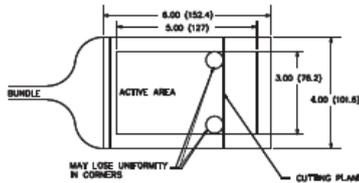
• Area of calibration is 3" x 5" (76 x 127)

• Calibrated to ±15 gray scale levels at a mean of 200, gamma setting of 1.0

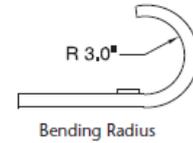
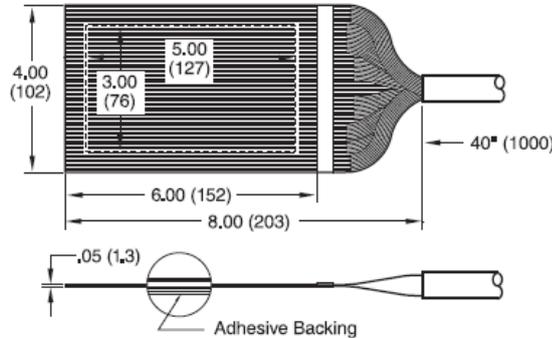
• Tested with a .118" (3mm) white acrylic plate, spaced .3" (7.6) from panel. (Call manufacturer for set up specification)

### A23000

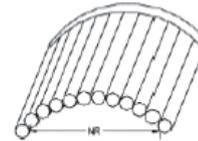
#### PANELite® Backlight



The A23000 PANELite® backlight can be trimmed in either direction with a good pair of scissors. NOTE: Trimming affects uniformity in the corners along the trimmed edge.



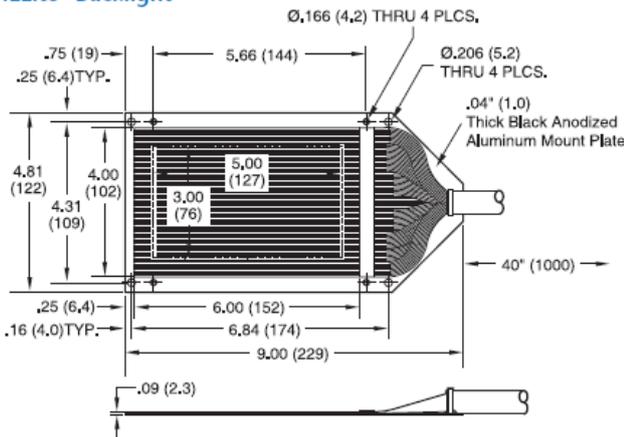
Bending Radius



Do not bend parallel to fiber direction.

### A23010

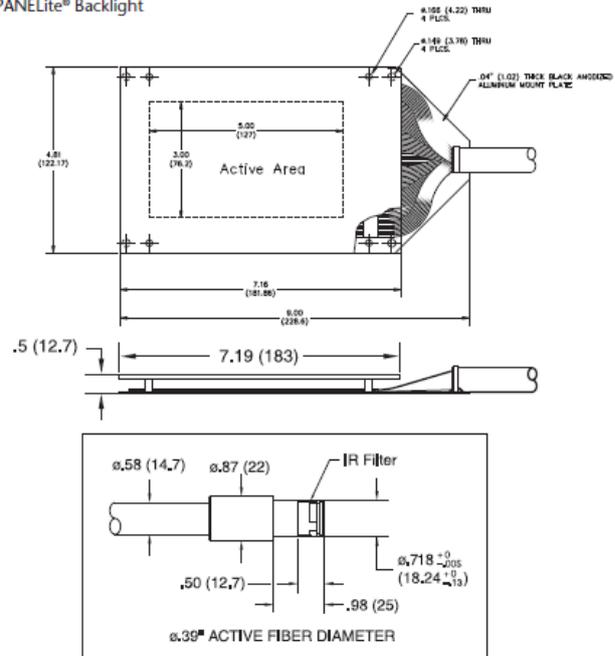
#### PANELite® Backlight



All standard PANELite® backlight configurations have the same input dimensions.

### A23020

#### PANELite® Backlight



## PANELite® Backlights

Part No.	Description	Calibrated Area	Panel Size	Overall Thickness
★ A23000	Flexible, adhesive back	3" x 5" (76 x 127)*	4" x 6" (102 x 152)	.05" (1.3)
★ A23010	Non-flexible, black anodized aluminum back	3" x 5" (76 x 127)	4.8" x 9" (122 x 229)	.09" (2.3)
★ A23020	Non-flexible, black anodized aluminum plate with acrylic diffuser plate	3" x 5" (76 x 127)	4.8" x 9" (122 x 229)	.5" (12.7)
Options				
★ A08931	Color filter adapter	Fits backlight light source adapters with .718" (18.2) diameter input size		

★ Made-to-order products.