Tapeswitch

A full spectrum of sensing and signaling products for protection, detection, and safety

Celebrating 50 Years of Excellence
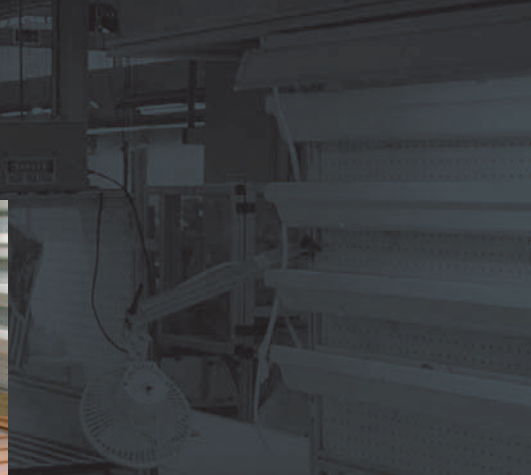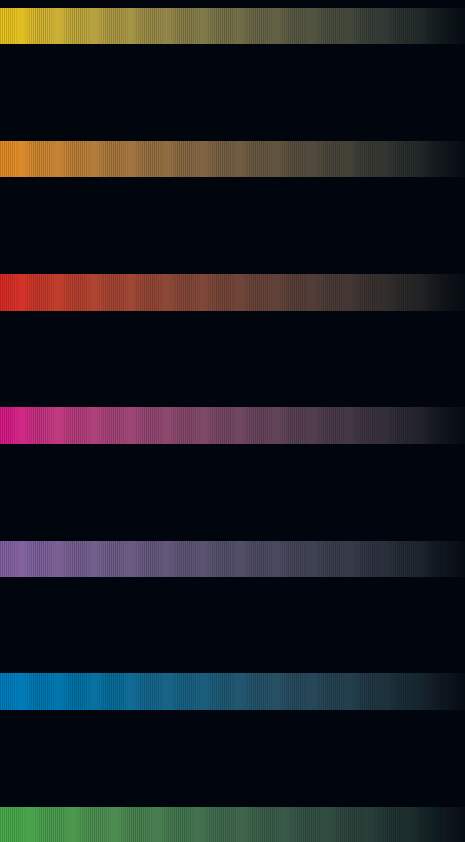1957 — 50 — 2007
In Safety and Sensing

SWITCH PRODUCTS

SAFETY & SIGNAL MATS

SENSING EDGES

SENSING BUMPERS

INTERFACE CONTROLLERS

LIGHT CURTAINS

CUSTOM DESIGNS

Welcome to Tapeswitch

We design and manufacture innovative sensing, switching, and control products for use in a wide range of safety and non-safety applications. Our products include ribbon switches, sensing edges and bumpers, safety mats, touch pads, controllers, and light curtains.
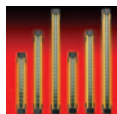
If a standard product just won't do the job, we offer extensive custom design services. We manufacture many specially-designed products, so if you do not find precisely what you need within our standard product offering, we can still most likely meet your exact application needs.

Whether you have an immediate requirement or are planning a long-term project, you can count on our mechanical and electrical engineers to come through for you.

If you would like to speak to someone, give us a toll-free call at **1-800-234-8273**. For general product information, ask for Customer Service, or if you have a specific application that requires technical assistance, ask for Application Engineering. You will get a person and not an automated menu.

CONTENTS

Full-featured and sophisticated

Tapeswitch **B-Series Safety Light Curtains** are full-featured, microprocessor-controlled units. Special capabilities include beam blanking and a flexible interface that is compatible with common safety relay units, controllers, and fail-safe PLCs. A wide range of sizes and resolutions is available.

The B-Series emitter and receiver pair, by themselves, constitute a complete light curtain system, which provides two redundant solid state PNP type outputs and is a type 4 safety device in accordance with EN61496-1. These outputs can be interfaced directly into the machine control circuit, provided that the circuitry is compatible with PNP type outputs (i.e. safety relays, emergency stop relay packages, fail-safe PLC's, etc.).

Features

- 2-unit system does not require a controller
- Easily interfaces with external devices
- Redundant fail-safe PNP outputs
- Beam blanking capability
- Rugged one-piece extruded aluminum housing
- EN 61496 type 4 design, suitable for the most dangerous machines
- UL listed, CE certified and marked

General Specifications

Detection Capability (Resolution)	14 mm (1/2") 30 mm (1-3/16") 70 mm (2-3/4")
Operating Distance	6 m (14 mm units) 15 m (30 mm & 70 mm units)
Curtain Lengths	up to 1.8 m (6 ft)
Safety Outputs	2 x PNP (fail-safe) 500 mA @ 24 Vdc max.
Response Time	<18 ms
Aperture Angle	± 2 degrees
Operating Temperature	0 to 50 °C (32 to 122 °F)
Enclosure Rating	IP65
Cross Section	45 mm (1-3/4") x 35 mm (1-3/8")
Weight	200 g (7 oz) per 100 mm
Wavelength	880 nm
Radiation Intensity	Class 1 LED product per (IEC 60825-1)

Explanation of Terminology

EN 61496 Type 4 Design
This is an international safety standard with particular requirements for equipment using active opto-electronic protective devices. It is the highest level of the most stringent standard in the world, acceptable and suitable for the most dangerous machines.

CE Certification
The CE mark is a European marking that indicates conformity with specific safety requirements of the European Union. CE certification means that a product has met these requirements.

Beam Blanking
Beam blanking allows selected areas of the sensing field to be disabled. This is useful in applications where fixed objects such as workpiece supports protrude through the light curtain and interrupt one or more beams.

Fixed Blanking
Specific beams are programmed to be obstructed and, consequently, disabled.

Floating Blanking
An obstruction can move or 'float' within the detection zone without generating a stop signal.

B-Series Models*

30 mm Resolution				14 mm Resolution		70 mm Resolution	
Length	P/N	Length	P/N	Length	P/N	Length	P/N
200 mm (8")	0901	1400 mm (56")	0909	200 mm (8")	0912	600 mm (24")	0921
300 mm (12")	0902	1600 mm (64")	0910	300 mm (12")	0913	800 mm (32")	0922
400 mm (16")	0903	1800 mm (72")	0911	400mm (16")	0914	1000 mm (40")	0923
600 mm (24")	0904			600 mm (24")	0915	1200 mm (48")	0924
800 mm (32")	0905			800 mm (32")	0916	1400 mm (56")	0925
900 mm (36")	0906			900 mm (36")	0917	1600 mm (64")	0926
1000 mm (40")	0907			1000 mm (40")	0918	1800 mm (72")	0927
1200 mm (48")	0908			1200 mm (48")	0919		

*Consult factory for additional lengths.

Tapeswitch **Type B2, B3, & B4 Perimeter Guards** are designed for safety and security applications. They are used to protect hazardous areas such as automated work cells or to monitor access or traffic in secure locations. The difference between models is the beam spacing.

These photoelectric devices provide the same high level category 4 safety integrity as the B-Series light curtains. To simplify installation, the emitter and receiver pair make up a self-contained system which is capable of safety functions without additional equipment.

Features

■ Available with 2,3 or 4 beams

■ 2-unit system does not require a controller

■ Easily interfaces with external devices

■ Redundant fail-safe PNP outputs

■ Rugged one-piece extruded aluminum housing

■ EN 61496 type 4 design

■ UL listed, CE certified and marked

General Specifications

Beam Spacing	B2 (2 beam) 500 mm (19.7") B3 (3 beam) 400 mm (15.7") B4 (4 beam) 300 mm (11.8")
Operating Distance	0.5 m to 30 m (1.6' to 98')
Curtain Lengths	B2: 680 mm (26.8") B3: 980 mm (38.6") B4: 1080 mm (42.5")
Safety Outputs	2 x PNP (fail-safe) 500 mA @ 24 Vdc max.
Response Time	<18 ms
Aperture Angle	± 2 degrees
Operating Temperature	0 to 50 °C (32 to 122 °F)
Enclosure Rating	IP65
Cross Section	45 mm (1-3/4") x 35 mm (1-3/8")
Weight	300 g + 200 g (7 oz) per 100 mm of curtain
Wavelength	880 nm
Radiation Intensity	Class 1 LED product per (IEC 60825-1)

Laser Alignment Tool

The laser alignment tool snaps onto the emitter or receiver of any B Series Light Curtain, and provides a visual indication of the alignment between them. This device is particularly useful when the emitter and receiver are separated by a long distance or when mirrors are involved in the application.

Explanation of Terminology

EN 61496 Type 4 Design

This is an international safety standard with particular requirements for equipment using active opto-electronic protective devices. It is the highest level of the most stringent standard in the world, acceptable and suitable for the most dangerous machines.

CE Certification

The CE mark is a European marking that indicates conformity with specific safety requirements of the European Union. CE certification means that a product has met these requirements.

Cable Assemblies

Cable assemblies are used to connect the B-Series sensing units to a controller or machine. The emitter has a 5-wire cable and the receiver has an 8-wire cable. One end of each cable has a keyed quick-disconnect connector and the other end is unterminated. The cables are IP68 rated, and UL and CSA recognized. Order cables separately.

| Cable Assemblies		Part Number
Emitter Cable, 15 ft.	5 Conductor	0972
Emitter Cable, 30 ft.	5 Conductor	0973
Emitter Cable, 98 ft.	5 Conductor	0976
Receiver Cable, 15 ft.	8 Conductor	0974
Receiver Cable, 30 ft.	8 Conductor	0975
Receiver Cable, 98 ft.	8 Conductor	0977

Mounting Brackets

Mounting brackets are supplied with the B-Series sensing units. The brackets can be oriented to accommodate most installation requirements. They are designed to fit most commonly available structural framing systems.

Optional swivel, clamping, and vibration-damping brackets are also available. Call for information.

Floor Stands (Part No. 0957)

Floor stands are constructed from extruded aluminum. They are 5 ft. tall with a steel base for permanently affixing to the floor. The base has adjustment hardware to assist in fine tuning the optical alignment of the light curtains. All of the necessary hardware is provided with the floor stands to allow easy attachment to the mounting brackets provided with the B-Series sensing units. Order floor stands separately.
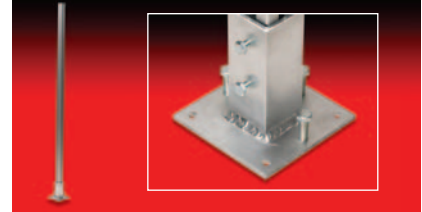
Mirror Assemblies

Mirror assemblies are used to change the direction of the emitter beams, allowing one light curtain to protect more than one side of a guarded area. They are provided with two pivot brackets for easy alignment. All of the necessary hardware is provided to allow attachment to floor stands. The actual length of the mirror is 4" (100mm) larger than the active curtain length (sensing area) to facilitate a wide tolerance for height alignment. Order mirror assemblies separately.
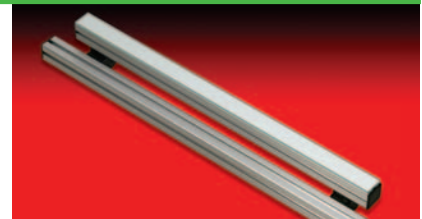
Curtain Length	Mirror Length	Part No.	Curtain Length	Mirror Length	Part No.
200 mm (8")	300 mm (12")	0960	900 mm (36")	1000 mm (40")	0965
300 mm (12")	400mm (16")	0961	1000 mm (40")	1100 mm (44")	0966
400mm (16")	500mm (20")	0962	1200 mm (48")	1300 mm (52")	0967
600 mm (24")	700 mm (28")	0963	1400 mm (56")	1500 mm (60")	0968
800 mm (32")	900 mm (36")	0964			

Model BPU-2 Blanking Programming Unit (Part No. 0953)

The blanking function allows selected areas of the sensing field to be disabled. This is useful for those applications in which objects, such as workpiece supports, protrude through the curtain. All B-Series light curtains are capable of being blanked for fixed and floating objects.

The beam blanking function is set up using the BPU-2 Programming Unit. This device is used to "teach" the B-Series sensing unit when fixed blanking or floating blanking are required. One programming unit can be used to program any number of light curtains.

Laser Alignment Tool (Part No. 0956)

The laser alignment tool simply snaps onto the emitter or receiver of the B Series. It then provides a visual indication of the alignment between them. This device is particularly useful when the emitter and receiver are separated by a long distance or when mirrors are involved in the application.

The **B-Series Emitter and Receiver pair**, by themselves, constitute a complete light curtain system, which provides two redundant solid state PNP type outputs and is a type 4 safety device in accordance with **EN61496-1**. These outputs can be interfaced directly into the machine control circuit, provided that the circuitry is compatible with PNP type outputs (i.e. safety relays, emergency stop relay packages, fail-safe PLC's, etc.).

The outputs are actively monitored and are constantly checked by switching them off for 50 microseconds every 5.5 milliseconds. Care should be taken in selecting a proper interface to ensure that the interface is compatible with the B-Series PNP type outputs. *In some applications the B-Series output configuration is not suitable for the machine control circuit and thus an intermediate relay package/interface unit, such as those below, must be used.*

Interface Units

Tapeswitch offers a variety of interface and control units which are compatible with B-Series light curtains. All of these units provide isolation between the light curtain system and the machine controls. *All of the B-Series interface units are self-monitored and control reliable.* All units perform the switching of the machine circuit using positively-guided safety relays and have a minimum of two safety outputs. Several interface units are available which offer options for configuring the input power source, mounting package, and type of electrical interface.

C6 Multifunction Interface Controller (Part No. 0480)

The C6 Multifunction Interface Controller is designed to accommodate up to six sensor zones. Three of these can be either B-Series Light Curtains or low voltage sensors. The remaining three are for low-voltage sensors only. This controller provides the necessary power to the B-Series emitter and receiver sensing units, and monitors the output signals. It is compatible with Tapeswitch ribbon switches, safety mats, sensing edges, and bumpers.

The C6 interface controller incorporates built-in fault protection and automatically detects an open or short within the sensor or its connecting cable, as well as internal failures. It is a fully self-contained unit housed in a rugged metal enclosure and is designed to be wall mounted. Six knockouts in the case accept standard 1/2" or 3/4" conduit. It will accept an input power source range of 85 to 264 Vac at an input frequency range of 47 to 63 Hz. The unit will also accept a regulated 24 Vdc supply.

BSRSA Interface Controller (Part No. 0950)

The BSRSA Controller is a self-contained unit within a metal enclosure. It is intended to be wall mounted and has four double knockouts capable of accepting standard 1/2" or 3/4" conduit.

The BSRSA is ideal for end user and OEM applications or for retrofitting existing machines. It will accept input power sources of either 110/240 Vac or 24 Vdc and provides the necessary power to the B- Series sensing unit emitter and receiver while monitoring the output signals.

The BSRSA provides two safety outputs which follow the state of the light curtain, and AUTOMATICALLY reset to the "on" state once an obstruction is removed from the light curtain. Upon startup, power up, loss of power/power resumption, a fault lockout condition is triggered. In this case, a front panel key or remote reset switch must be activated.

The BSRSA Controller provides a lockout contact which will be closed during normal operation and will open only when one of the above-mentioned lockout conditions occur. Both the high power ac input and low power dc control voltage are internally fused. The safety output contacts are also fused.
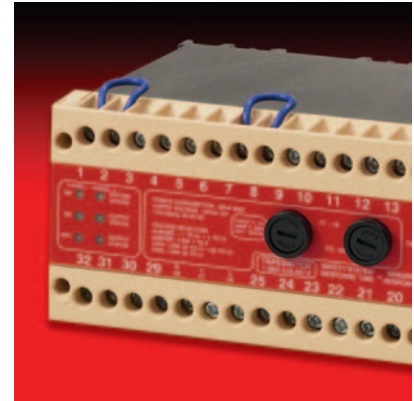
BSRUA-2 Interface Controller (Part No. 0951)

The BSRUA-2 Controller is a compact DIN rail mount unit capable of interfacing up to two B-Series sensing units. It will accept an input power source of 110/240 Vac or 24 Vdc and provides the necessary power to the B-Series sensing unit emitter and receiver.

The two safety outputs follow the state of the light curtain and AUTOMATICALLY resume the "on" state once an obstruction is removed.

There is no operator intervention required and no operator power up sequence necessary. The unit contains status and diagnostic indicators.

The BSRUA-2 can be used for applications where up to two areas of a machine must be protected and the desired machine control is the same regardless of which sensing unit (light curtain) has been obstucted. It can also be used in applications where multi-side protection is necessary and conventional use of mirrors is impractical.

SRUB Interface Controller (Part No. 0952)

The SRUB Controller is an economical, compact DIN rail mount unit. It operates from 24 Vdc and is field configurable for either AUTOMATIC or MANUAL reset. In the automatic mode, the two safety outputs follow the status of the light curtain.

In this mode no operator intervention or operator power up sequence is necessary. In the manual mode the two safety outputs will go to the "off" state once the light curtain is obstructed. The outputs will remain in the off state until an external (user supplied) reset switch is activated.

The SRUB is perfect for machines with an existing +24 Vdc control voltage. The small size along with the economical price make it ideal for OEM applications.

BC-1 Blanking Interface Controller (Part No. 0959)

The BC-1 Interface Controller combines the capabilities of the BSRSA controller and the BPU-2 programming unit in a single package. It is packaged in a wall-mounted metal enclosure.

The blanking function allows selected areas of the sensing field to be disabled. This is useful for those applications in which objects, such as workpiece supports, protrude through the light curtain.

GDC1 24 Vdc Power Supply (Part No. 0953)

The GDC1 is a compact switching mode power supply and is specifically intended for use with the B-Series light curtain and SRUB interface unit. It provides a regulated 24 Vdc supply to the safety equipment (i.e. safety relay and light curtain) from a wide range of AC input voltages.

It comes with adapter clips to allow it to be din rail mounted. The output voltage is adjustable to account for a variety of loading conditions.

Follow the procedure below, selecting the proper component at each step.

1. Select a Sensing Unit - Sensing units come in pairs; one emitter and one receiver.

a. Determine the resolution needed (14 mm, 30 mm, or 70 mm).

b. Determine the coverage length needed (200mm to 1800 mm)

c. Select the appropriate Sensing Unit from the table.

B-Series Models*							
14 mm Resolution		**30 mm Resolution**				**70 mm Resolution**	
Length	P/N	Length	P/N	Length	P/N	Length	P/N
200 mm (8")	0912	200 mm (8")	0902	1400 mm (56")	0909	600 mm (24")	0921
300 mm (12")	0913	300 mm (12")	0903	1600 mm (64")	0910	800 mm (32")	0922
400 mm (16")	0914	400mm (16")	0904	1800 mm (72")	0911	1000 mm (40")	0923
600 mm (24")	0915	600 mm (24")	0905			1200 mm (48")	0924
800 mm (32")	0916	800 mm (32")	0906			1400 mm (56")	0925
900 mm (36")	0906	900 mm (36")	0907			1600 mm (64")	0926
1000 mm (40")	0917	1000 mm (40")	0908			1800 mm (72")	0927
1200 mm (48")	0918	1200 mm (48")	0909				

* Consult factory for additional lengths.

2. Select Cable Assemblies

One each for emitter and receiver. Cable length can be adjusted in the field.

a. Determine minimum cable length required for emitter unit.

b. Determine minimum cable length required for receiver unit.

c. Select the one emitter cable and one receiver cable from the table.

Cable Assemblies		Part Number
Emitter Cable, 15 ft.	5 Conductor	0972
Emitter Cable, 30 ft.	5 Conductor	0973
Emitter Cable, 98 ft.	5 Conductor	0976
Receiver Cable, 15 ft.	8 Conductor	0974
Receiver Cable, 30 ft.	8 Conductor	0975
Receiver Cable, 98 ft.	8 Conductor	0977

3. Select Mounting Brackets - This is optional. Sensing Units come with standard mounting brackets.

a. Determine if standard mounting brackets will suffice. Consult your Tapeswitch application specialist.

b. If required, select optional swivel, clamping, or vibration-damping mounting brackets.

4. Select Floor Stands - This is optional.

a. Determine if floor stands are required. Consult your Tapeswitch application specialist.

b. If required, select the number of floor stands required.

5. Select Mirror Assemblies - This is optional.

   a. Determine if mirrors are required. Consult your Tapeswitch application specialist.

   b. If required, select the appropriate mirror type from the table.

Mirror Assemblies		
Curtain Length	**Mirror Assembly Length**	**Part Number**
200 mm (8")	300 mm (12")	0960
300 mm (12")	400mm (16")	0961
400mm (16")	500mm (20")	0962
600 mm (24")	700 mm (28")	0963
800 mm (32")	900 mm (36")	0964
900 mm (36")	1000 mm (40")	0965
1000 mm (40")	1100 mm (44")	0966
1200 mm (48")	1300 mm (52")	0967
1400 mm (56")	1500 mm (60")	0968

6. Select Interface Controller - This is optional, but recommended.

   a. Determine if an interface controller is required. Consult your Tapeswitch application specialist.

   b. If required, select an interface controller: BSRSA, BSRUA-2, SRUB, C6, or BC-1.

7. Select Power Supply - This is optional.

   a. If an SRUB Interface Controller has been selected, determine if you need a power supply.

   **b.** If required, select the GDC1 Power Supply.

8. Select Additional Accessories - These optional accessories provide useful functions for installing, maintaining and troubleshooting the light curtains.

Programming Unit - Used to program fixed and floating blanking on the sensing units

Laser Alignment Tool - Provides a visual indication of alignment between the emitting and receiving unit. Simplifies alignment, especially when then units are far apart.

Diagnostic Software Kit - Interfaces sensing units to a laptop computer. Shows real-time status of each beam and logs data.

A-SERIES SAFETY LIGHT CURTAINS
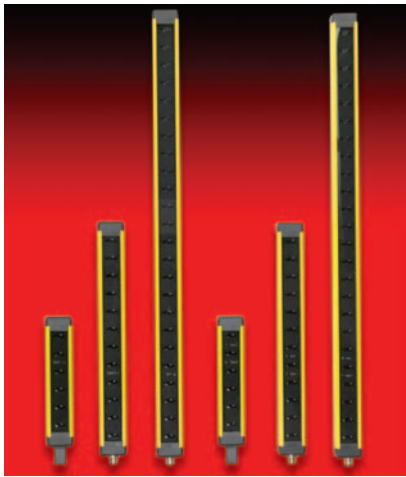
A-Series Safety Light Curtains are a cost-effective choice for applications requiring a basic light curtain safety system. The low cost and simplicity of operation makes them ideal for protecting personnel from the risk of dangerous machinery in situations where sophisticated, programmable features are not required. An emitter-receiver set, combined with a BT control unit, provides a complete level 4 safety system conforming to the rigorous EN 61.496/I and I.E.C. 1.496/1-2 standards.

A-Series light curtains exhibit optical interference resistance to light levels up to 25,000 lux. They are immune to flash, stroboscopic lamps, and every kind of welding spike. A wide range of sizes and resolutions is available, and two units can be cascaded for extra long or two-sided applications

Features

- Our most cost-effective light curtain system
- Easily interfaces with external devices
- Units can be cascaded for 2-sided or extra-long applications
- Rugged one-piece extruded aluminum housing
- High resistance to flashes, strobes, and welding spikes
- EN 61496 type 4 design, suitable for the most dangerous machines

General Specifications

Detection Capability (Resolution)	30 mm (1-3/16") 55 mm (2-3/4")
Operating Distance	15 m (50 ft) (30 m available on request)
Curtain Lengths	up to 2.1 m (6.8 ft)
Safety Outputs (on BT Controller)	2 NO + 1 NC 5 A @ 250 Vac max.
Response Time	9 ms to 24 ms, depending on model
Operating Temperature	-5 to 65°C (23 to 149°F)
Enclosure Rating	IP65
Cross Section	50 mm (2") x 36 mm (1-7/16")
Noise Immunity	Exceeds I.E.C. 801/4 level 4
Optical Interference Immunity	Up to 25,000 lux
Shock Resistance	5 to 60 Hz @ 5G peak vibration (3 planes)

Explanation of Terminology

EN 61496 Type 4 Design

This is an international safety standard with particular requirements for equipment using active opto-electronic protective devices. It is the highest level of the most stringent standard in the world, acceptable and suitable for the most dangerous machines.

Optical Interference

A condition in which light from an extraneous source matches the detection wavelength range of the receiver, and is of sufficient amplitude to obscure interruption of the beam from the transmitter. Typical sources of optical interference include ambient lighting, strobes or flashing signal lights, and welding sparks and flashes.

Noise Immunity

This refers to noise on the power line (electrical fast transient/burst) that can interfere with the proper operation of a light curtain, causing false tripping of the safety circuit or preventing it from tripping.

A-Series Models

30 mm Resolution (15 m range)

Length	P/N	Length	P/N
102 mm (4.0")	0600	1182 mm (46.5")	0608
174 mm (6.8")	0601	1326 mm (52.2")	0609
318 mm (12.5")	0602	1470 mm (57.8")	0610
462 mm (18.1")	0603	1614 mm (63.5")	0611
606 mm (23.8")	0604	1758 mm (69.2")	0612
750 mm (29.5")	0605	1920 mm (75.6")	0613
894 mm (35.2")	0606	2046 mm (80.5")	0614
1038 mm (40.8")	0607		

Other resolutions from 55 mm to 330 mm are available, as are units with a 30 m range. Consult factory for additional information.

Series BT Interface Control Unit

Series BT controllers come in a DIN rail-mount package and are designed specifically for A-Series light curtains. They have 2 NO and 1 NC output safety relays with a rating of 5 A @ 250 Vac.

These units feature automatic and manual reset and LED status indicators. Connections are through convenient plug-in terminal blocks. Models are available for 24 Vdc and 110 Vac operation.

Interconnect Cables

These cables connect the light curtain units to the BT Interface Controller. Two cables are required and each may be used on either the emitter or receiver.

Interconnect cables are available in 3 lengths: 5 m (16 ft), 10 m (33 ft) and 30 m (98 ft).

Mounting Brackets

Two styles of mounting brackets are available for the A-Series light curtains. Make a selection based on the specific needs of the application.

Model STGM allows for adjustment of the light curtain height only. Model STVM allows adjustment of both the height and angle.

SLANT-GUARD ANGLED LIGHT CURTAIN

The **Slant-Guard Angled Light Curtain** is a specially-configured, multi-segment model which is designed to replace master/slave or cascaded units with a single integrated unit. The Slant-Guard light curtain can have two or more segments, each at a different angle, up to a maximum total length of six feet. It can be mounted horizontally to provide protection on two or more sides, or vertically to provide protection in diagonal planes.
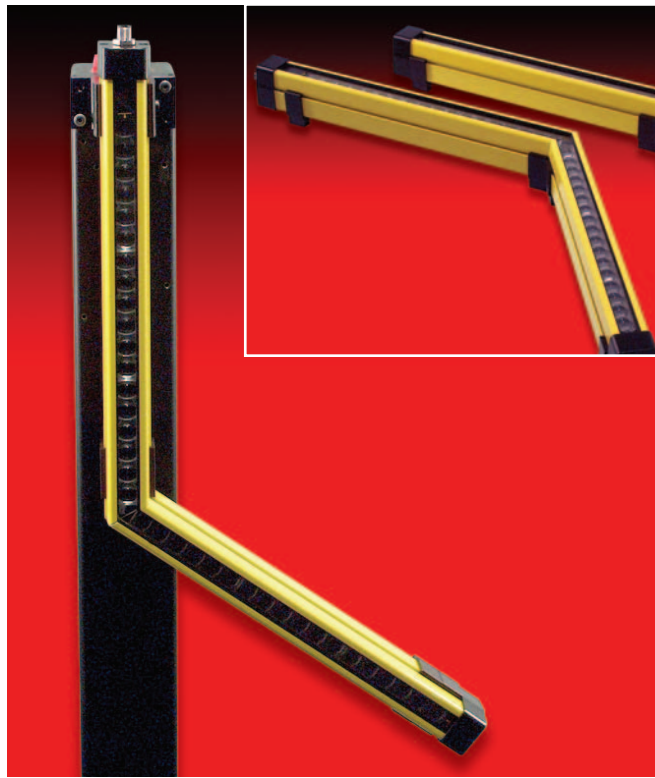
Features & Benefits

- Eliminates need for multiple light curtains
- Full-featured light curtain with beam blanking
- No external connections between segments
- Easier to align than multiple units
- No loss of resolution between segments
- Interfaces easily with external controls
- EN 61496 type 4 design for maximum safety
- Redundant fail-safe PNP outputs

Applications

- Machine guarding
- Hazardous area protection
- Access monitoring and control
- Diagonal zones of protection
- Any guarding application requiring multiple light curtains

General Specifications

Detection Capability: . . . . .30 mm

Response Time: . . . .<18 msec

Operating Range: . . . . .up to 30 meters

Operating Temperature: . . . . .32 to 120 °F (0 to 50 °C)

Enclosure Rating: IP65

Total Unit Length: . . . . .6 ft

Safety Outputs: .2 x PNP (fail-safe)
                                       500 mA @24Vdc

The Slant-Guard Angled Light Curtain is a built-to-order product.
Contact the factory for more information and for help with your application.

Additional Information

Beam Blanking allows the light curtain to operate where there is a permanent or floating obstruction in the sensing field, such as workpiece supports.

EN 61496 Type 4 Design is the highest level of the most stringent standard in the world, and is suitable for the most dangerous machine guarding applications.

This **Self-Contained System** is capable of safety functions without additional equipment. It interfaces readily with common safety relay units and fail-safe PLCs, as well as with Tapeswitch controllers.

HARD-GUARD LIGHT CURTAINS

The **Hard-Guard Light Curtain** is designed for harsh industrial environments or outdoor applications. It is available in either a tough, transparent acrylic housing or a rugged aluminum enclosure. Protected against water (including wash down), dust, dirt, oil, and many solvents, it is ideal for heavy industrial applications, food processing, or outdoor safety and security systems.

The Hard-Guard system includes a full-featured light curtain with a matching controller. It easily interfaces with a wide range of machine or security controls.
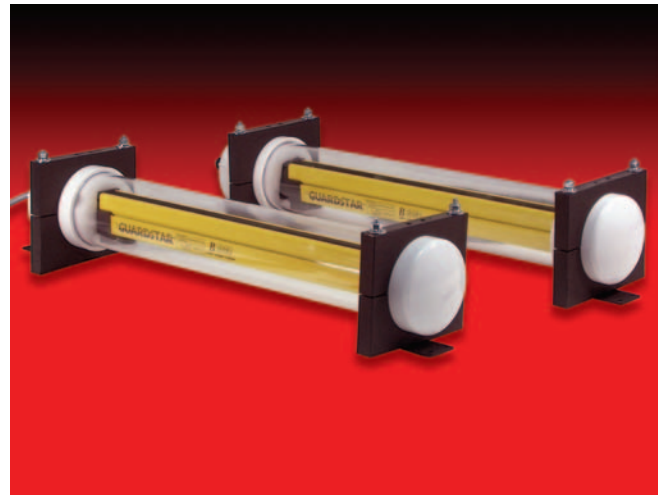
Features & Benefits

- Protected against water, dust, dirt, and oil
- Choice of acrylic and aluminum enclosure
- Optional internal heating element
- Fully-assembled for easy installation
- Easy access for maintenance and repair
- Wide range of sizes and resolutions
- EN 61496 type 4 design for maximum safety

Hard-Guard with aluminum enclosure

Hard-Guard with acrylic enclosure

System Specifications

|	
Detection Capability	14 mm (1/2")
	30 mm (1-3/16")
	70 mm (2-3/4")
Response Time	<18 ms
Curtain Lengths	14 mm - 8 lengths
	8" to 48"
	30 mm - 9 lengths
	8" - 56"
	70 mm - 7 lengths
	24" - 72"
Enclosure Rating	IP65
Operating Range	6 m (14 mm)
	13 m (30 mm & 70 mm)
Operating Temperature	32 to 120°F (0 to 50 °C)
Safety Outputs	2 x PNP (Fail-Safe)
	500mA @ 24V DC maximum

Applications

- Harsh industrial environments
- Food processing operations
- Vehicle or personnel entry and exit control
- Outdoor perimeter guarding or gatekeeping
- Intruder detection

The Hard Guard Light Curtain is a built-to-order product. Contact the factory for more information and for help with your application.

Because we are constantly
improving our products,
specifications are subject
to change without notice.
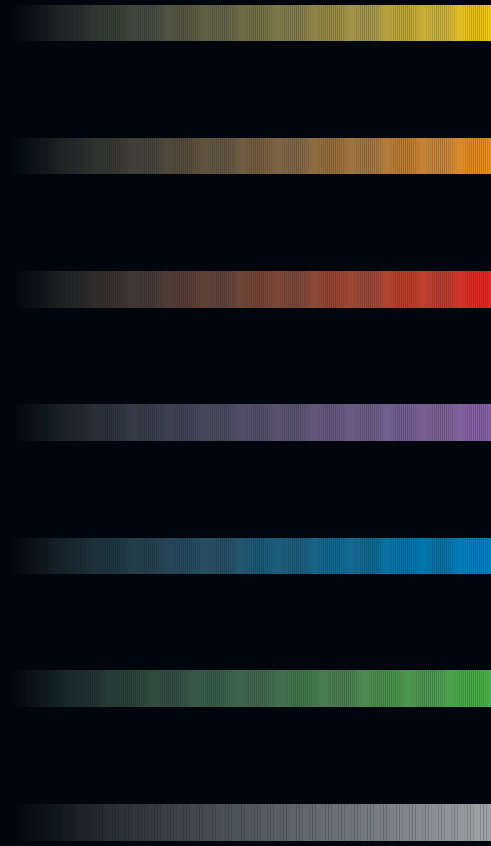
A sample of industries we serve.

MANUFACTURING

MILITARY

MINING

MEDICAL

TRANSPORTATION

ENTERTAINMENT

Please refer to our web site to locate your nearest representative.

Tapeswitch