Contrinex Safety Light Curtains Selection Guide

Specification	YBB-14x4 Series	YBB-30x4 Series	YCA-50x4 Series
Description	Finger Protection, 14mm resolution	Hand Protection, 30mm resolution	Access Control, 300, 400mm beam gap
Protective Height	142 to 1045mm (5.59 to 41.14 in)	279 to 1827mm (10.98 to 71.65 in)	832 to 1232mm (32.76 to 48.50 in)
Safety Level	Cat.4, PLe (EN/ISO 13849-1) Type 4 (IEC 61496-1/2)	Cat.4, PLe (EN/ISO 13849-1) Type 4 (IEC 61496-1/2)	Cat.4, PLe (EN/ISO 13849-1) Type 4 (IEC 61496-1/2)
Operating Range	0.25 to 3.5m (0.82 to 11.48 ft)	0.25 to 12m. (0.82 to 39.37 ft)	1.0 to 15m (3.3 to 39.37 ft) / 10 to 50m (32.8 to 164 ft)**
Output State	N.C.	N.C.	N.C.
Logic Output	Dual PNP outputs, short-circuit protected	Dual PNP outputs, short-circuit protected	Dual PNP outputs, short-circuit protected
Connection Type	M12 5-pole connector	M12 connector	M12 connector
Supply Voltage	24VDC ± 20%	24VDC ± 20%	24VDC ± 15%
Rating	IEC IP65, IP67 (EN60529)	IEC IP65, IP67 (EN60529)	IEC IP65, IP67 (EN60529)

**Configurable

Contrinex Safety Light Curtains Finger-safe

Safety light curtain with 14mm resolution

- •Available as a set, or order sender and receiver to make a complete sensor.
- Protective height from 142mm to 1045mm
- Operating distance up to 3.5 m
- M12 quick-disconnect (order cable separately)

- Dual PNP outputs
- Mounting brackets included with all units
- Instruction manual and testing rod included with sender unit
- IP65, IP67 rated
- Type 4 and Category 4 PLe

Part Number		Price	Protective Height Hs mm[in]	Housing Height Hb mm[in]	Total Height Ht mm[in]	Number of Beams	Current Consumption [mA]	Response Time [ms]	MTTF$_d$ (years)	DC$_{avg}$	Product Weight per Unit
YBB-14S4-0150-G012	Sender		137 [5.39]	221 [8.70]	251 [9.81]	17	50	5.2	142	96%	470g 1.04 lbs
YBB-14R4-0150-G012	Receiver						90				
YBB-14K4-0150-G012	Set						See above				940g 2.08 lbs
YBB-14S4-0250-G012	Sender		266 [10.47]	350 [13.78]	380 [14.96]	33	50	8.4	114	96%	740g 1.63 lbs
YBB-14R4-0250-G012	Receiver						95				
YBB-14K4-0250-G012	Set						See above				1480g 3.26 lbs
YBB-14S4-0400-G012	Sender		395 [15.55]	479 [18.86]	509 [20.04]	49	50	11.6	96	95%	1000g. 2.20 lbs
YBB-14R4-0400-G012	Receiver						100				
YBB-14K4-0400-G012	Set						See above				2000g 4.40 lbs
YBB-14S4-0500-G012	Sender		524 [20.63]	608 [23.94]	638 [25.12]	65	50	14.8	83	95%	1270g 2.80 lbs
YBB-14R4-0500-G012	Receiver						110				
YBB-14K4-0500-G012	Set						See above				2540g 5.6 lbs
YBB-14S4-0700-G012	Sender		653 [25.71]	737 [29.02]	767 [30.20]	81	50	18	73	95%	1540g 3.40 lbs
YBB-14R4-0700-G012	Receiver						115				
YBB-14K4-0700-G012	Set	6.00					See above				3080g 6.80 lbs
YBB-14S4-0800-G012	Sender		782 [30.79]	866 [34.09]	896 [35.28]	97	50	21.2	65	94%	1800g 3.97 lbs
YBB-14R4-0800-G012	Receiver						120				
YBB-14K4-0800-G012	Set	6.00					See above				3600g 7.94 lbs

Note: AutomationDirect does not recommend using these light curtains with any device other than our Safety Relay Light Curtain Controllers.

Contrinex Safety Light Curtains Finger-safe

YBB-14 Series Safety Light Curtain Selection Table										
Part Number		Price	Protective Height Hs mm[in]	Housing Height Hb mm[in]	Total Height Ht mm[in]	Number of Beams	Current Consumption [mA]	Response Time [ms]	MTTFd (years)	DCavg	Product Weight per Unit
YBB-14S4-0900-G012	Sender		911 [35.87]	995 [39.17]	1025 [40.35]	113	50	24.4	59	94%	2070g 4.56 lbs
YBB-14R4-0900-G012	Receiver						125				
YBB-14K4-0900-G012	Set	6.00					See above				4140g 9.12 lbs
YBB-14S4-1000-G012	Sender		1040 [40.94]	1124 [44.25]	1154[45.43]	129	50	27.6	53	94%	2340g 5.16 lbs
YBB-14R4-1000-G012	Receiver	6.00					130				
YBB-14K4-1000-G012	Set	8.00					See above				4680g 10.32 lbs

Note: AutomationDirect does not recommend using these light curtains with any device other than our Safety Relay Light Curtain Controllers.

Dimensions
mm [in]
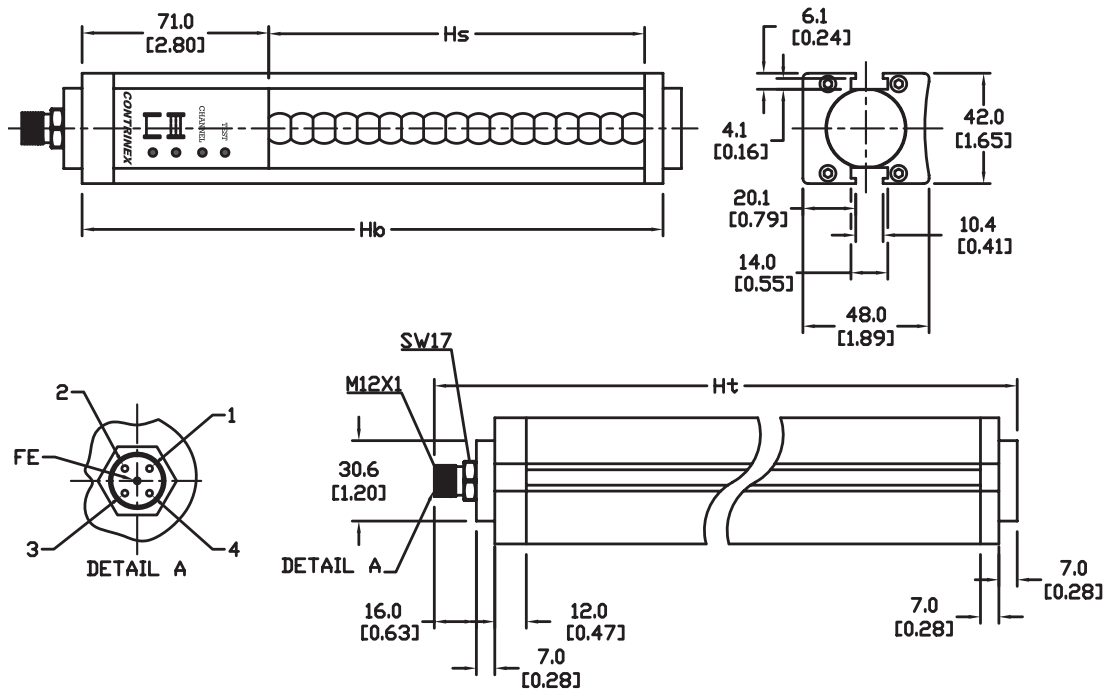
Pin outs

Assignment	Function	Pins/Wires on Sender		Pins/Wires on Receiver	
		M12	Cable	M12	Cable
Supply Voltage	24VDC for channel 1; 0V for channel 2	1	Brown	1	Brown
Supply Voltage	0V for channel 1; 24VDC for channel 2	3	Blue	3	Blue
Test Mode	0V test active; 24 V test inactive	4	Black	–	–
Output	OSSD1 (Output Single Switching Device)	–	–	2	White
Output	OSSD2 (Output Single Switching Device)	–	–	4	Black
Functional Earth	Shield (Ground)	FE	Gray	FE	Gray

Note: Cable color represents standard industrial pinout.
Confirm the specific color and pinout during installation.

Contrinex Safety Light Curtains – Finger-safe

| YBB-14 Series Safety Light Curtain Specifications	
Resolution	14mm
Safety Level	Category 4, PLe (EN/ISO 13849-1). Type 4 (IEC 61496-1/2)
Beam Axis Interval	8mm
Supply Voltage	24VDC ± 20%
Current Consumption	See Selection Table
Outputs	2 PNP outputs, short-circuit protected
Output Current	Maximum 0.2 amps per output (@ 50°C/122°F)
Output Voltage ON minimum	1.0 V less than the supplied operating voltage at 25°C (77°F)
Output Voltage OFF	<1.0 V
Leakage Current	< 1mA
Maximum Load Inductance	100mH
Response Time	See Selection Table
Sender Wavelength	IR 950nm
Operating Range	0.25 to 3.5 m
Protection Class	Class III (IEC 61140)
Startup Delay	< 0.5 seconds
Vibration Resistance	10 to 55Hz, 0.35 mm amplitude, 1 octave/min., 20 sweeps for each axis
Shock Resistance	10g during 16ms, 1000 times for each axis
Light Immunity	Incandescent lamp: 3000lx max. (light intensity on receiver surface) Xenon flash tube: flash duration 1.2 ms max. with a frequency of 2Hz max. (TS 61496-2)
Operating Temperature	0 to 50°C (32 to 122°F)
Storage Temperature	-25 to 70°C (-13 to 158°F)
Humidity	15 to 95% (non-condensing)
Degree of Protection (EN 60529)	IP65
Ambient Brightness	TS 61496-2
Reference Standards	IEC 61496-1: 2004, IEC 61496-2
Housing Material	Aluminum, PMMA (Polymethylmethacrylate [acrylic]) front screen
Material of Upper and Lower Cover	PA (Polyamide [nylon]) + 30% fiberglass
Material of Optics	PMMA (Polymethylmethacrylate [acrylic])
Cable Runs	10m maximum (at 10nF capacitive load)
Approvals	CE, UL file #E321951, RoHS, TUV

LED Status Indicators
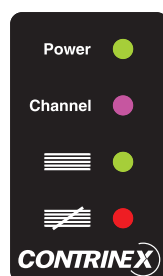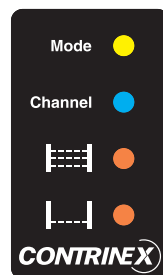
Sender ||
LED	Finger & hand protection (YBB)
Mode	Yellow when test mode is active
Channel	Blue when channel 1 is selected
	Purple when channel 2 is selected
Alignment	Steady orange when the screen is not fully aligned
	Flashing orange when the first third of the screen is aligned
	Off when screen is fully aligned
Alignment	Steady orange when the lowest beam is not aligned
	Flashing orange when the lowest beam is aligned
	Off when screen is fully aligned

Receiver ||
LED	Finger & hand protection (YBB)
Power	Green when power is ON
Channel	Blue when channel 1 is selected
	Purple when channel 2 is selected
Status	Green when OSSD outputs are ON
Status	Red when OSSD outputs are OFF

Contrinex Safety Light Curtains Accessories

Safety Light Curtains Accessories Overview			
Part Number	**Price**	**Description**	**Use With**
Mirror Columns			
YXC-1060-M11		Safety light curtain mirror column. 1060mm housing height, 974mm mirror length, aluminum profile with steel floor plates. Powder-varnished yellow (RAL1021) finish. Mounting hardware included.	YBB-xxxx-0150-xxx to YBB-xxxx-0800-xxx units
YXC-1960-M11	6.00	Safety light curtain mirror column. 1960mm housing height, 1874mm mirror length, aluminum profile with steel floor plates. Powder-varnished yellow (RAL1021) finish. Mounting hardware included.	YBB-xxxx-1600-xxx to YBB-xxxx-1700-xxxx units
YXC-1360-M23		Safety light curtain mirror column. 1360mm housing height, 2 x 400 beam gap, aluminum profile with steel floor plates. Powder-varnished yellow (RAL1021) finish. Mounting hardware included.	YCA-xxxx-3400-xxx units
YXC-1360-M24		Safety light curtain mirror column. 1360mm housing height, 3 x 300 beam gap, aluminum profile with steel floor plates. Powder-varnished yellow (RAL1021) finish. Mounting hardware included.	YCA-xxxx-4300-xxx units
Protective Columns			
YXC-1960-F00		Safety light curtain protective column. 1897mm housing height, aluminum profile with steel floor plates. Powder-varnished yellow (RAL1021) finish. Mounting hardware included. Two required to protect sender and receiver. 1/pk.	YBB-xxxx-1600-xxx to YBB-xxxx-1800-xxxx units
Other			
YXL-0001-000		Laser alignment tool for safety light curtains, class 2 laser, range up to 50 meters, useable and clippable to YBB and YCA light curtains models, 2 AAA batteries included.	YBB Series YCA Series
YXW-0001-000		Safety light curtain mounting brackets for top and bottom mounting. Plastic. 2/pk.	
YXW-0003-000		Safety light curtain sliding T-nuts for side mounting. Metal. 2/pk. Ideal torque from M5x0.8 thread is 6 Nm (4.42 lb-ft, 53.1 lb-in.).	
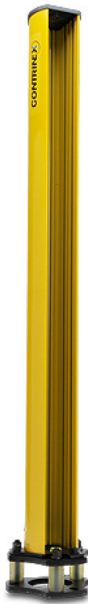
YXW-0001-000

YXW-0003-000

YXL-0001-000

Light Curtain Mirror Columns
- Multi-sided safe guarding of danger zones
- Robust protective profile
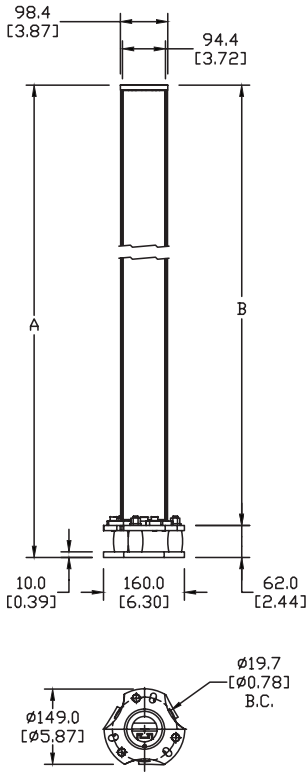- 10% reduction of operating distance for mirror

Light Curtain Protective Column
- Automatically bounces back after physical shock or vibration.
- Robust baseplate allows radial and vertical alignment.
- Solid aluminum profile
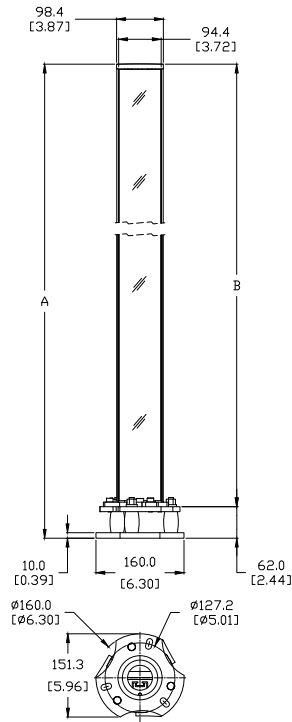
Contrinex Safety Light Curtains Accessories
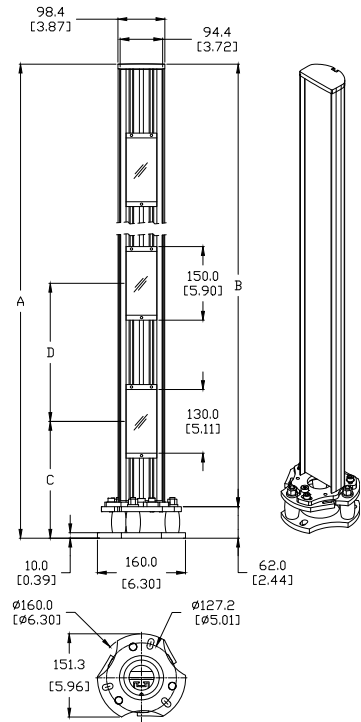
Dimensions mm [in]

Protective column

Mirror column

CONTINUOUS MIRROR   SEGMENTED MIRRORS

YXC-xxxx-M11   YXC-1360-Mxx

Safety Light Curtains Protective Columns Dimensions		
Part Number	Total Height A mm [in]	Housing Height B mm [in]
YXC-1960-F00	1960 [77.17]	1897 [74.69]

Note: Full and open top caps are provided to accommodate taller units.

Safety Light Curtains Mirror Columns Dimensions				
Part Number	Total Height A mm [in]	Mirror Height B mm [in]	Height to Lowest Beam C mm [in]	Beam Gap D mm [in]
YXC-1060-M11	1060 [41.73]	974 [38.35]	n/a	n/a
YXC-1360-M11	1360 [53.54]	1274 [50.16]	n/a	n/a
YXC-1960-M11	1960 [77.17]	1874 [73.78]	n/a	n/a
YXC-1360-M23	1360 [53.54]	n/a	2 x 400 [2 x 15.75]	300 [11.81]
YXC-1360-M24	1360 [53.54]	n/a	3 x 300 [2 x 11.81]	300 [11.81]
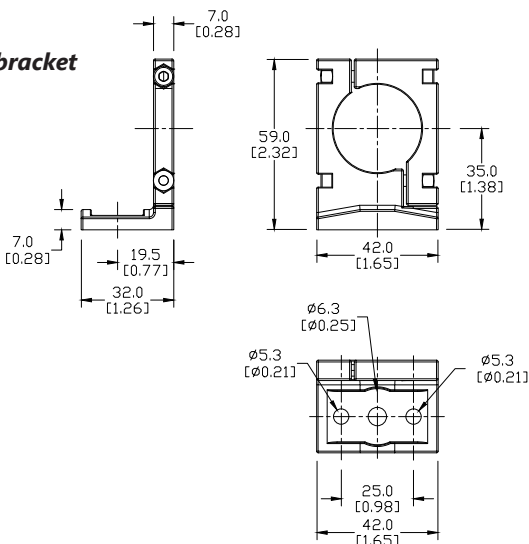
Mounting bracket

T-Nuts for side mounting
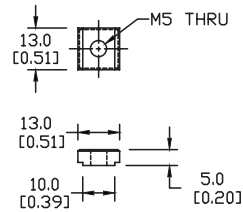
Contrinex Safety Light Curtains Accessories

Mounting bracket

YXW-0001-000

7.0 [0.28]
7.0 [0.28]
19.5 [0.77]
32.0 [1.26]
59.0 [2.32]
35.0 [1.38]
42.0 [1.65]

ø6.3 [ø0.25]
ø5.3 [ø0.21]
ø5.3 [ø0.21]
25.0 [0.98]
42.0 [1.65]
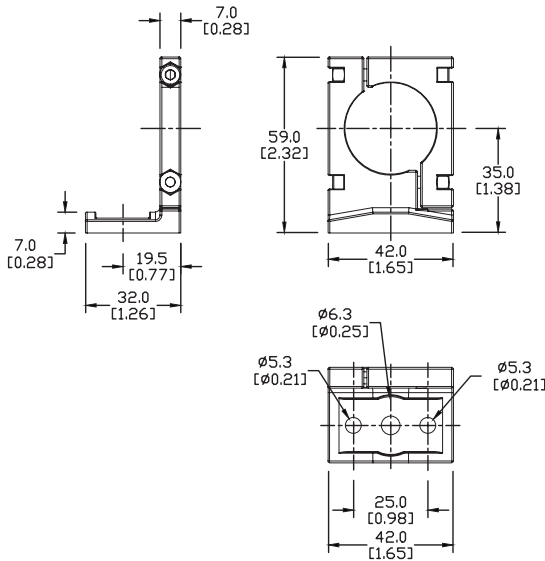
T-Nuts for side mounting

YXW-0003-000

M5 THRU
13.0 [0.51]
13.0 [0.51]
10.0 [0.39]
5.0 [0.20]
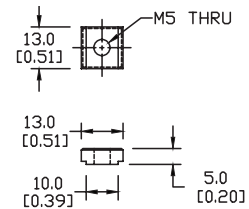
Laser Alignment Tool
- Clips on YBB and YCA Curtains/Barriers
- High quality lens for narrow output beam
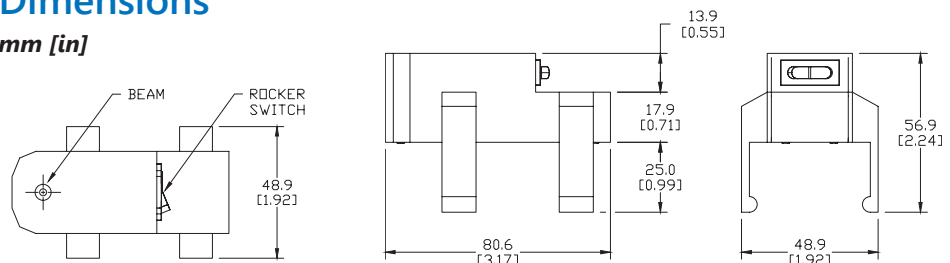- Up to 50m [164ft] range
- <1mW output power
- Standard AA batteries included

YXL-0001-000

Laser Alignment Tool YXL-0001-000 Specifications	
Supply Voltage Range	2.5 – 3.3 VDC
Laser Module Optical Output Power	<1mW (Class 2)
Range	50m (164ft)
Ambient Temperature Range	0-40°C (32-104°F)
Storage Temperature Range	0-60°C (32-140°F)
Wavelength	655nm ± 1%
Laser Beam Spot Size at 10m	< 10mm
Divergence Angle	1.1 mrad
Housing Material	PA with 30% fiberglass
Mounting	Clippable onto YBB / YCA devices
Weight	95g (0.21 lb)

Dimensions
mm [in]

BEAM
ROCKER SWITCH
48.9 [1.92]

13.9 [0.55]
17.9 [0.71]
25.0 [0.99]
80.6 [3.17]

56.9 [2.24]
48.9 [1.92]