SX Series

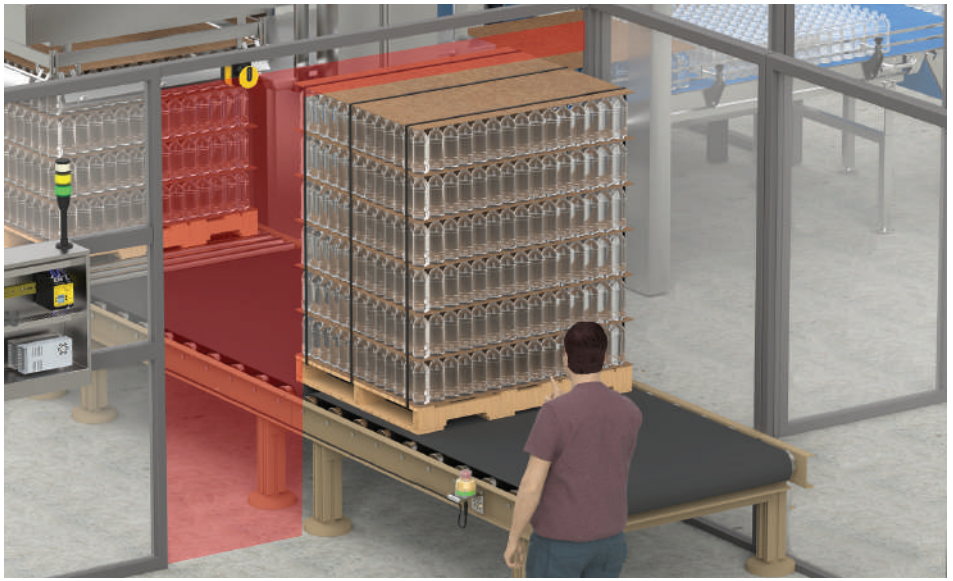
Safety Laser Scanners

- Master and Remote functionality with simplified setup and wiring
- Protect personnel and equipment with three independent safety outputs
- Ideal solution for complex applications with 70 unique safety zone sets, encoder inputs, and advanced measurement data
- Cost-effective, compact, one-piece design with 275° of monitoring
- Horizontal or vertical detection zones to reliably safeguard mobile vehicles, access points, work areas, and more

BANNER®

Three Independent Safety Outputs

Up to three safety zones can be monitored simultaneously and independently, reducing the need for multiple safety scanners or safety light curtains.

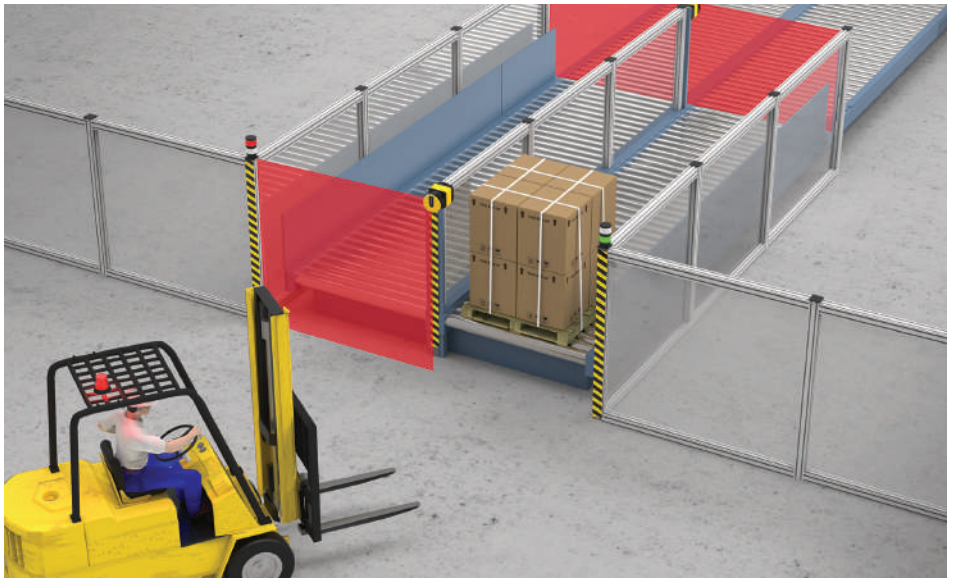


Dynamic and Partial Muting

Mute all or part of a safety zone without the need of an external muting module or controller. Each safety output can have its own zones and muting requirements.

Safeguarding a Work Area

A single SX5 safety laser scanner continuously scans a user-defined area up to 275° to create a two-dimensional protected zone, detecting staff or equipment entering the area.



Vertical Applications and Zone Switching

Easy-to-use software allows for simple zone configuration and zone switching in vertical applications, such as forklift conveyor access.

Challenges

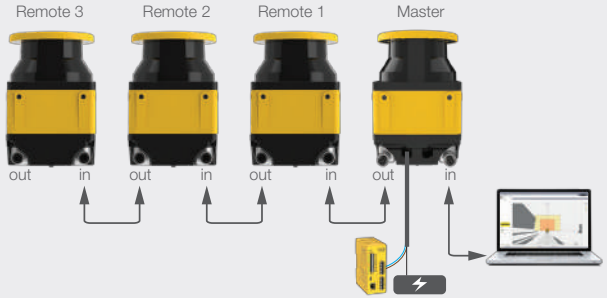
- Monitor multiple sides of an AGV or other mobile equipment
- Protect personnel and equipment with a moving environment and changing safety parameters
- Reduce hardware required for direct vehicle navigation
- Reduce cabling in mobile applications

Solution:

- With master/remote functionality, up to four SX5 safety laser scanners can be connected in a single system to guard all sides of a vehicle
- Up to 70 unique safety zone sets can be configured and activated based on the position, speed, and motion of the vehicle
- Encoder inputs and advanced measurement data output reduce the amount of hardware required and allow for direct vehicle navigation
- Remotes are each connected to the master by a single cable, reducing cable management and simplifying wiring

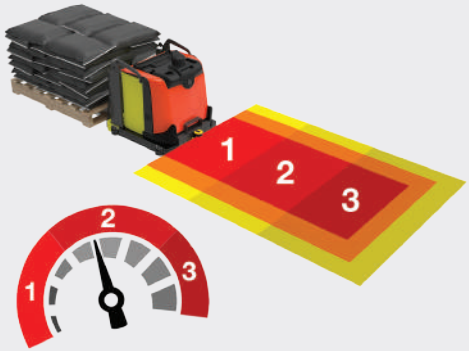
Master/Remote Functionality

Guard all sides of a vehicle and configure up to 70 unique safety zone sets to monitor the changing safety parameters of a mobile application.



Safe Speed Monitoring

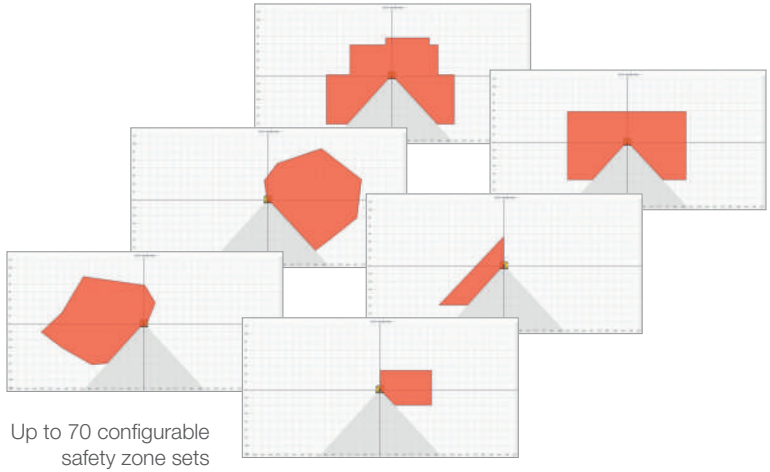
Incremental encoder inputs can be read directly by the scanner to select the appropriate safety zone based on the speed of the vehicle, reducing cost and eliminating the need for functions typically required by additional hardware like a safety PLC.



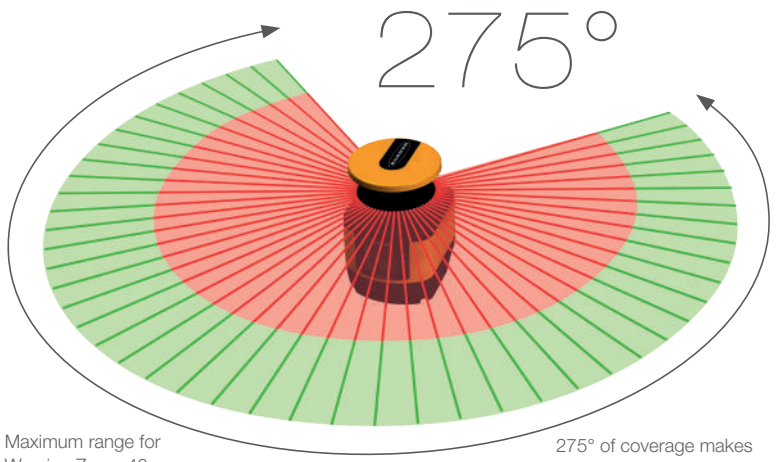
Dependable and Flexible Industrial Safeguarding

Horizontal or vertical monitoring of both personnel and stationary or mobile systems

LED 1: Object Detection in Safety Zone (OSSD)
LED 2: Not Available
LED 3: Assigned to Warning Zone 2
LED 4: Assigned to Warning Zone 1
LED 5: Interlock Status (waiting for Reset)



Up to 70 configurable safety zone sets



Maximum range for Warning Zone: 40 m

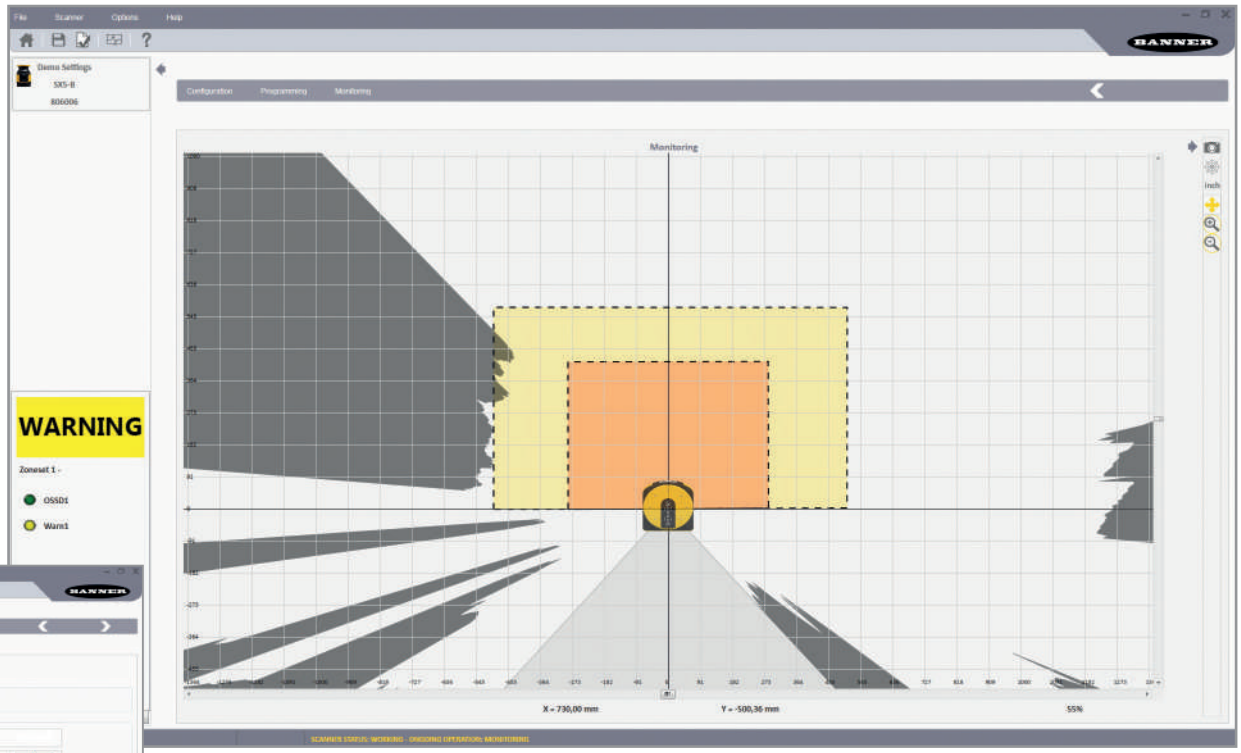
Maximum range for Safety Zone: 5.5 m

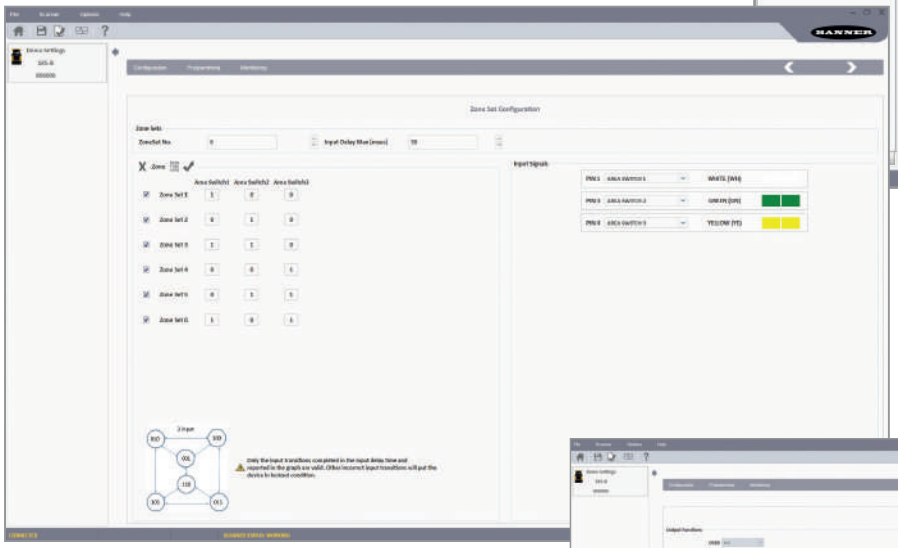
275° of coverage makes it easy to mount on a corner

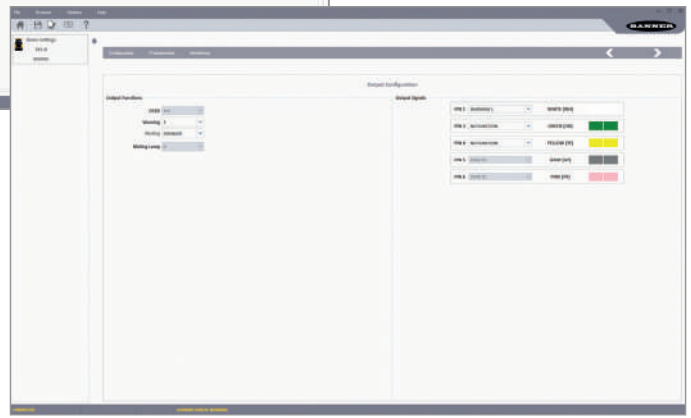
Safety Scanner System – Software

Simple Setup for Rapid Deployment

The SX5 can be set up in just a few simple steps using Banner's free configuration software. This robust software features menu-driven tools that guide users through setup and make it easy to design custom safety and warning zones to accommodate existing infrastructure and meet the specific needs of any application.







The software displays a graphic rendering of the monitored area, and provides configuration and management tools, such as drop-down menus and function-specific worksheets.

- Administrative data:
  File title header, application description and more
- Safety-relevant data:
  Startup process information
- Safety Zone or Warning Zone configuration data:
  Contours and limits

Select a Scanner

		SX5-ME70	SX5-M70	SX5-M10	SX5-R	SX5-B
						
Presence Detection		50/70 mm	50/70 mm	50/70 mm	50/70 mm	40/70 mm
Hand Detection		30/40 mm	30/40 mm	30/40 mm	30/40 mm	40 mm
Body Detection		70/150 mm	70/150 mm	70/150 mm	70/150 mm	70 mm
Range (depending on resolution)		30 mm = 2.5 m 40 mm = 3 m 50 mm = 4 m 70/150 mm = 5.5 m	30 mm = 2.5 m 40 mm = 3 m 50 mm = 4 m 70/150 mm = 5.5 m	30 mm = 2.5 m 40 mm = 3 m 50 mm = 4 m 70/150 mm = 5.5 m	30 mm = 2.5 m 40 mm = 3 m 50 mm = 4 m 70/150 mm = 5.5 m	40 mm = 3 m 70 mm = 5.5 m
Max. Zone Sets (depending on configuration)		70	70	10	Depends on master	6
Master Remote		Master Add up to 3 Remotes	Master Add up to 3 Remotes	Master Add up to 3 Remotes	Remote	
Removable Memory		SXA-RM-70	SXA-RM-70	SXA-RM-10		
Max. OSSD Outputs (depending on configuration)		3 x 2 OSSD	3 x 2 OSSD	2 x 2 OSSD		1 x 2 OSSD
Connection		M12: 17-pin and M12: 8-pin	M12: 17-pin and M12: 8-pin	M12: 12-pin or M12: 8-pin		M12: 8-pin
Speed Monitoring		✓				
Muting		✓	✓	✓	✓	
Programmable Dust Filter		✓	✓	✓	✓	✓
Measurement Data		✓	✓	✓	✓	
Field-Replaceable Window		✓	✓	✓	✓	

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Specifications

Operating Range and Scanning Angle	Safety protective field: up to 5.5 m Warning field: 40 m Scanning angle: 275 degrees
Detection Capability	30 mm, 40 mm, 50 mm, 70 mm, 150 mm
OSSD (Safety Output)	All inputs and outputs are protected from short circuits to +24 V dc or dc common
Environmental Rating	IEC IP65
Operating Conditions	SX5-B: 0 to +50 °C (+32 to +122 °F) All other models: -10 to +50 °C (+14 to +122 °F)
Current Consumption (24 V dc)	Standalone Scanner: No output load (I0) at 24 V DC: 0.3 A Remote Scanner: No output load (I0) at 24 V DC: 0.3 A plus 0.3 A Master Scanner: With maximum output load at 24 V DC: I0 plus 0.5 A per OSSD pair used (or warning pair outputs)

Mechanical Data	Housing material: Aluminum Alloy Housing color: YellowRAL1003 Optics cover material: PC Optics cover surface: Acrylic
Safety Data	Type 3 (EN 61496-1) SIL 2 (IEC 61508) Category 3 (EN ISO 13849-1) SILCL 2 (EN 62061) PL d (EN ISO 13849-1)
Optical Data	Wavelength: 905 nm Pulse duration: 3 nsec Laser class: CLASS 1 (EN 60825-1)
Certifications	CE, cULus LISTED

Interface Options

SC26-2
SC26-2d
SC26-2e
SC26-2de

Flexible, efficient safety controller has small footprint and programs easily using icon-based software

SC10-2roe

Safety Controller and ISD to PLC Gateway connects up to 64 ISD devices and has 6 available safe inputs for other devices

SR-IM-9A

SR-IM-11A

Interface Modules provide isolated safety output contacts for a primary safety device (for example, a safety light screen or safety module) with solid-state or hard contact outputs and external device monitoring (EDM) capability

Accessories

SXA-MBK-1
Pitch and roll angle adjustment bracket

SXA-MBK-2
Protection bracket

SXA-RM-10 / SXA-RM-70
- Removable Memory SX..M10
- Removable Memory SX..M*70

SXA-WIN
Window Replacement Kit

8-Pin M12 Straight

SXA-815D
4.5 m (15')
SXA-825D
7.6 m (25')
SXA-850D
15.2 m (50')
SXA-8100D
30.4 m (100')

12-Pin M12 Straight

SXA-1215D
4.5 m (15')
SXA-1225D
7.6 m (25')
SXA-1250D
15.2 m (50')
SXA-12100D
30.4 m (100')

17-Pin M12 Straight

SXA-1715D
4.5 m (15')
SXA-1725D
7.6 m (25')
SXA-1750D
15.2 m (50')
SXA-17100D
30.4 m (100')

8-Pin Threaded M12 – Male to Male

SXA-DEE2M-810F
3 m (9.8')
SXA-DEE2M-815F
5 m (16.4')
SXA-DEE2M-830F
10 m (32.8')
SXA-DEE2M-850F
15 m (49.2')
SXA-DEE2M-880F
25 m (82')

4-Pin M12 D-Code to RJ45

STP-M12D-406
1.83 m (6')
STP-M12D-415
4.5 m (15')
STP-M12D-430
9.14 m (30')

Who is Banner?

Every 3.5 seconds, a Banner sensor is installed somewhere in the world. Banner solves problems for most of the manufacturing companies in the Fortune 500, as well as the startups changing industry with leading-edge production.

Banner technology supports manufacturing of the cars you drive, the food you eat, the medicine you take, and virtually every product in your daily life. Whatever the industry, Banner offers solutions to automate production, improve efficiency, and manufacture to the highest standard of quality.

Manufacturing Specialists

With over 30,000 products, Banner is a leading source for your manufacturing needs. We offer award-winning sensors, wireless solutions, vision sensors and lighting, machine safety, indicator lights, and LED lighting.

Application Solution Experts

Our field sales engineers are the most highly trained and experienced professionals in the industry. They can rapidly analyze an application to help you find the best solution.

Global Presence

Banner offers worldwide sales and support through a network of more than 3,000 professionals ready to help you no matter where you are located.

Unique Solutions

Banner's growing product line includes thousands of standard products. However, if you have an application requiring a unique solution or direct integration of a Banner product, contact one of Banner's Application Engineers to learn about our rapid customization and ability to deliver special product variations.

Talk with an app engineer.
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PN 208539 rev. A