

# AtomScan<sup>+</sup> Bar Code Readers



(Catalog Numbers 2755-LS7-SA, -SB, -RA, -RB, -SBV, and -RBV)

## *Product Data*

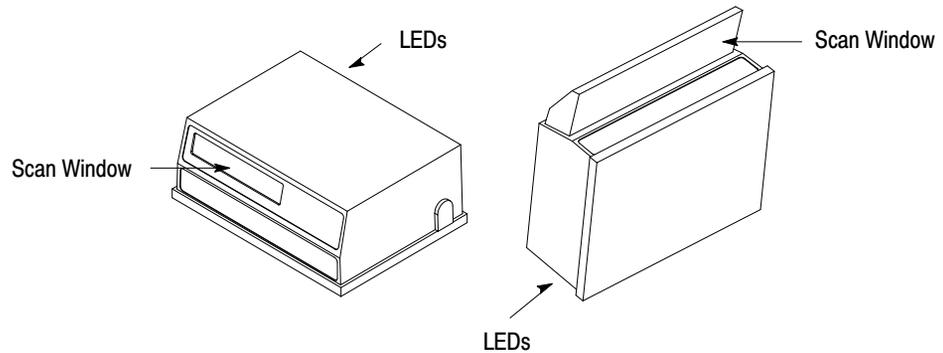


The AtomScan<sup>+</sup> Bar Code Reader is a compact integrated scanner and decoder, ideal for applications in packaging, labeling, and machine assembly industries where space is limited. You can choose either linear or raster scan types with straight ahead or right angle read direction.

The AtomScan<sup>+</sup> Bar Code Reader supports direct RS-232 host connectivity. An optional interface box is available for either RS-232 or RS-422/RS-485 host connectivity. The interface box has a trigger connector for a package detect. In addition, an auto-load switch lets you load a new match code in the reader.

## Reader Features

The reader features are listed below.



**Compact scanner and decoder.** Allows you to place the reader in locations where space is at a premium.

**Linear and raster scan types.** Allows you to choose the scanner that best fits your application.

**Straight ahead and right angle read directions.** Allows you to mount the bar code reader vertically or horizontally, depending on your application.

**Optional interface box.** Provides additional communication ports as well as a trigger port for a package detect. An autoloader switch lets you download a new match code.

**RS-232, RS-422, and RS-485 protocol availability.** Allows you to communicate directly to a host device or communicate on a network when connected to the interface box. The RS-232 port provides compatibility with computer serial interface ports and Allen-Bradley devices such as the Enhanced Decoder, Flexible Interface Module, SLC 5/03™ and SLC 5/04™ Programmable Controllers, PLC-5® Programmable Controllers, and DTAM™ Plus Operator Interface.

**Menu-driven configuration screens.** Allows you to use a standard terminal or terminal emulation program to configure the reader.

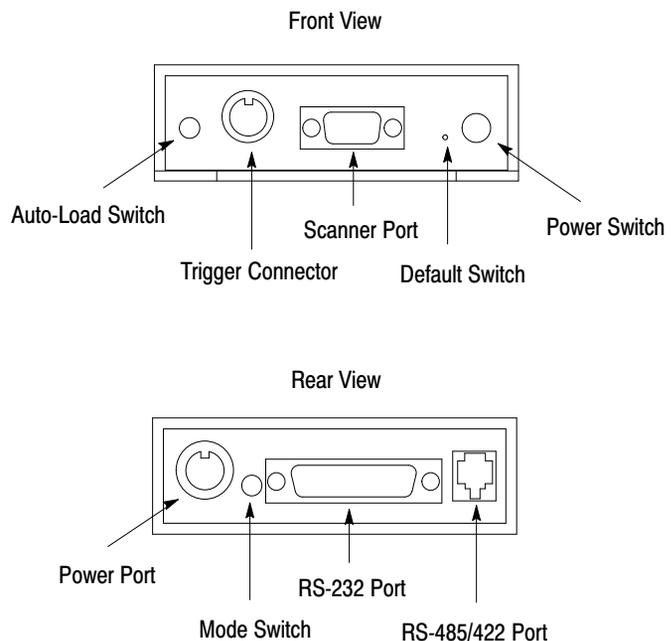
**LED indicators.** Provides you system status at a glance. They are:

LED	When	Indicates
GD/RD (Good Read)	Green	Good quality label.
RDY (Ready)	Green	Scanner is ready to read a label.
PWR (Power)	Red	The scanner has power.

## Interface Box Features

The interface boxes (Catalog Nos. 2755-LS7-IB1 and 2755-LS7-IB2) route signals between the bar code readers and other devices. The interface boxes have the following switches and connectors.

- Auto-load switch. Allows you to load a new match code by pressing the switch when the reader is scanning a bar code.
- Trigger connector. Connects the interface box to a package detector such as a PHOTOSWITCH<sup>®</sup> photoelectric sensor.
- Scanner port. Connects the interface box to the scanner cable.
- Default switch. Allows you to restore factory configuration settings to the scanner.
- Power switch. Provides power to the interface box and anything connected to the interface box.
- Power port. Allows you to connect the power supply to the interface box.
- Mode switch. Allows you to toggle the 2755-LS7-IB1 host communications between RS-232 and RS-485 communications.
- RS-232 port. Connects the interface box to equipment with an RS-232 port.
- RS-485/422 port. Connects the interface box to equipment with an RS-485 port (Catalog No. 2755-LS7-IB1) or RS-422 (Catalog No. 2755-LS7-IB2).



## Decoding

The readers can decode the following symbologies:

- UPC-A
- UPC-E
- EAN 8
- EAN 13
- Code 39
- Code 128
- EAN 128
- Codabar
- Interleaved 2 of 5

## Safety Information

The readers use a low power visible laser diode. As with any bright light source, avoid staring directly into the beam. Momentary exposure to a CDRH Class II laser is not known to be harmful.

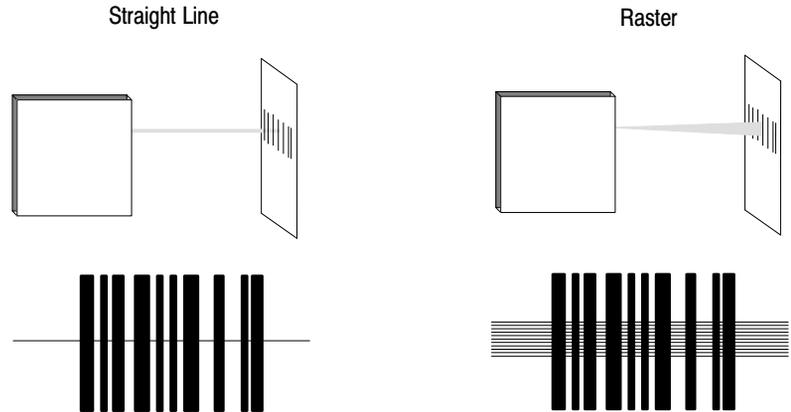
Be aware of the following laser caution symbol on the scanners.



## Scan Beam Options

Scan beams are projected either as a single line or as a raster pattern.

- The single line option projects its ten scan lines per rotation so they follow the same path, and appear to be a single scan line.
- The raster option deflects its ten scan lines up and down through 2 degrees of arc during each rotation.



The raster type scanner is useful for reading bar code symbols printed by a dot matrix printer or other poorly printed symbols. A raster pattern is also used when specified by an application standard or if there is a possibility that the label will change position within a specified area. An increasing number of applications that have bar code symbols in the picket fence orientation use a raster type scanner.

## Readers and Accessories

The following bar code readers and accessories are available.

Description	Catalog Number
Straight ahead high density read, single line bar code scanner	2755-LS7-SA
Straight ahead low density read, single line bar code scanner	2755-LS7-SB
Straight ahead high density read, raster pattern bar code scanner	2755-LS7-RA
Straight ahead low density read, raster pattern bar code scanner	2755-LS7-RB
Right angle low density read, single line bar code scanner	2755-LS7-SBV
Right angle low density read, raster pattern bar code scanner	2755-LS7-RBV
Interface box with RS-232 and RS-485 communication	2755-LS7-IB1
Interface box with RS-232 and RS-422 communication	2755-LS7-IB2
Power supply (100-240V ac, 50/60 Hz)	2755-LS7-PW1
Mounting plate	2755-LS7-N1

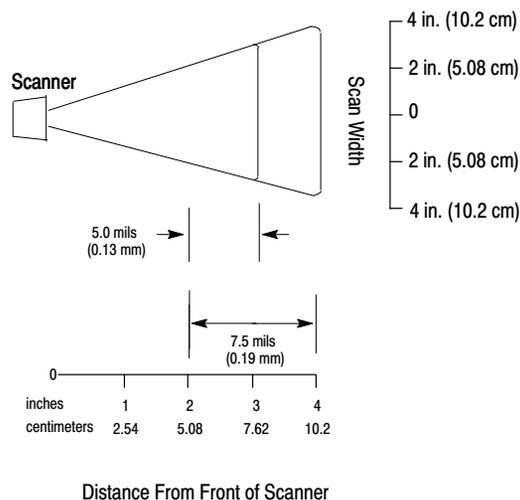
## Determining Read Range

The readers can read bar code symbols at various distances depending upon the type of scanner and the narrowest bar code element width (width of smallest bar or space). With picket fence orientated labels, scan width is a factor in determining the time it takes to read a bar code symbol.

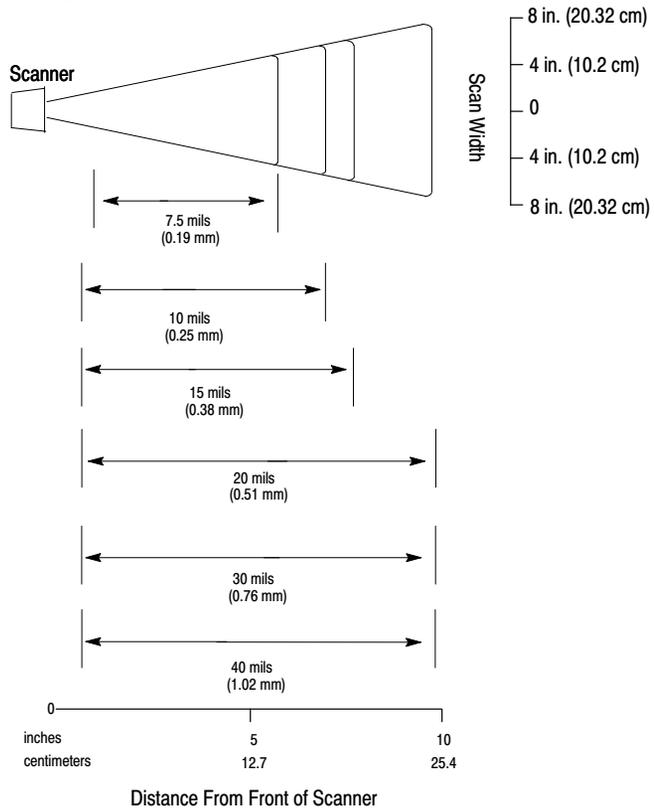
Catalog Number	Minimum Bar Code Width	Read Range	Maximum Scan Width
2755-LS7-SA, 2755-LS7-RA	5.0 mils (0.13 mm)	2.0 to 3.1 in. (5.08 to 7.87 cm)	2.1 in. (5.33 cm)
	7.5 mils (0.19 mm)	2.0 to 4.0 in. (5.08 to 10.2 cm)	3.6 in. (9.14 cm)
2755-LS7-SB, 2755-LS7-RB	7.5 mils (0.19 mm)	2.5 to 5.5 in. (6.35 to 14.0 cm)	4.0 in. (10.2 cm)
	10 mils (0.25 mm)	2.0 to 6.5 in. (5.08 to 16.5 cm)	5.0 in. (12.7 cm)
	15 mils (0.38 mm)	2.0 to 7.5 in. (5.08 to 19.0 cm)	6.0 in. (15.2 cm)
	20 mils (0.51 mm)	2.0 to 10.0 in. (5.08 to 25.4 cm)	7.0 in. (17.8 cm)
	30 mils (0.76 mm)	2.0 to 10.0 in. (5.08 to 25.4 cm)	7.0 in. (17.8 cm)
	40 mils (1.02 mm)	2.0 to 10.0 in. (5.08 to 25.4 cm)	7.0 in. (17.8 cm)
2755-LS7-SBV, 2755-LS7-RBV	7.5 mils (0.19 mm)	1.25 to 4.0 in. (3.18 to 10.2 cm)	4.0 in. (10.2 cm)
	10 mils (0.25 mm)	1.0 to 5.0 in. (2.54 to 12.7 cm)	5.0 in. (12.7 cm)
	15 mils (0.38 mm)	1.0 to 6.0 in. (2.54 to 15.2 cm)	6.0 in. (15.2 cm)
	20 mils (0.51 mm)	1.0 to 8.5 in. (2.54 to 21.6 cm)	7.0 in. (17.8 cm)
	30 mils (0.76 mm)	1.0 to 8.5 in. (2.54 to 21.6 cm)	7.0 in. (17.8 cm)
	40 mils (1.02 mm)	1.0 to 8.5 in. (2.54 to 21.6 cm)	7.0 in. (17.8 cm)

**Note:** The halfway point between the minimum and maximum read range will give you the optimum decode rate.

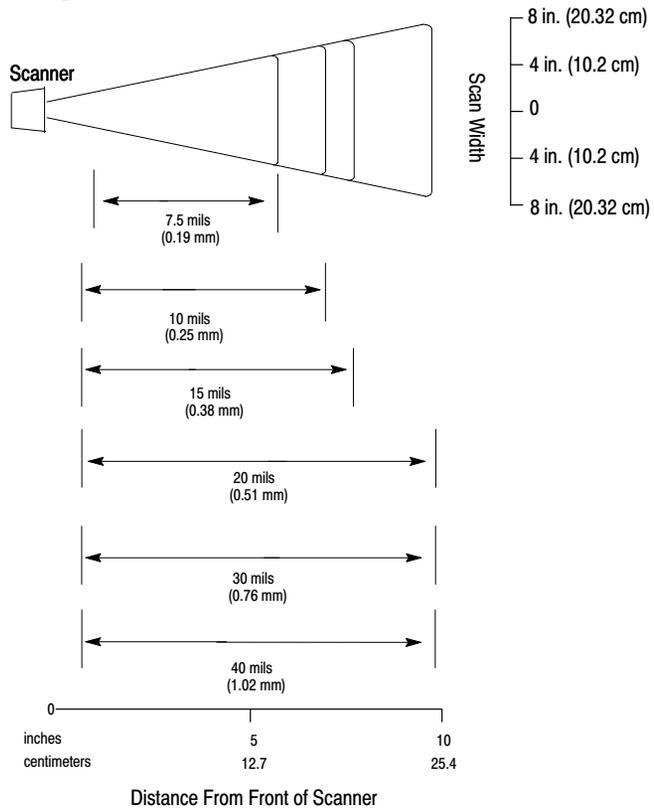
### Catalog Numbers 2755-LS7-SA and 2755-LS7-RA



**Catalog Numbers 2755-LS7-SB and 2755-LS7-RB**



**Catalog Numbers 2755-LS7-SBV and 2755-LS7-RBV**

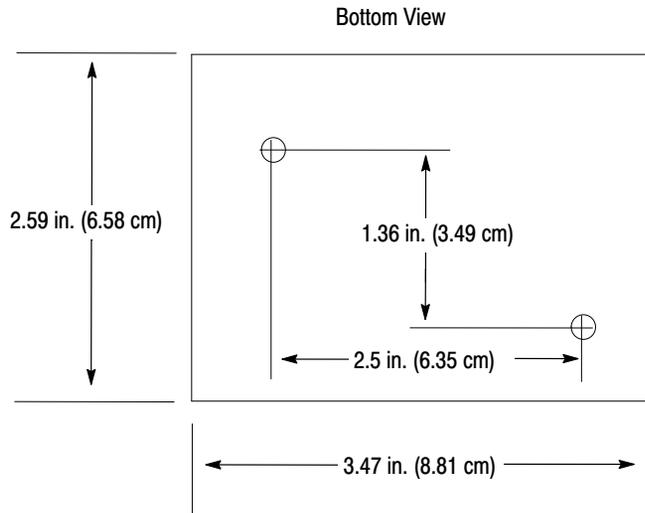


## Reader Specifications

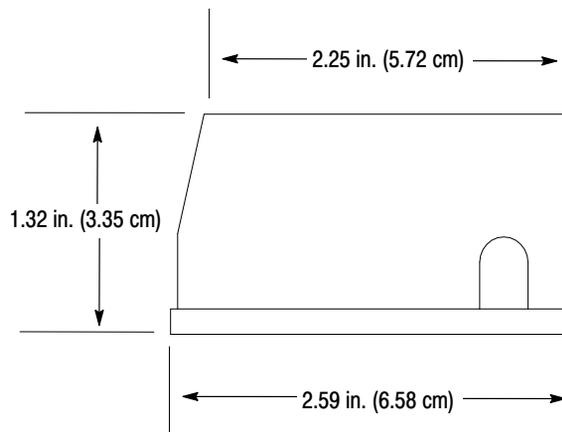
Description	Specification					
	Catalog No. 2755-LS7-SA	Catalog No. 2755-LS7-RA	Catalog No. 2755-LS7-SB	Catalog No. 2755-LS7-RB	Catalog No. 2755-LS7-SBV	Catalog No. 2755-LS7-RBV
Read Range Direction	Straight ahead	Straight ahead	Straight ahead	Straight ahead	Right angle	Right angle
Scan Pattern	Single scan line	Raster pattern	Single scan line	Raster pattern	Single scan line	Raster pattern
Power Requirements	Input + 5V dc $\pm$ 4% regulated @ 480 mA with 200 mV p-p maximum ripple					
Scan Repetition Time	Approximately 300 to 550 scans per second					
Symbologies	UPC-A, UPC-E, EAN-8, EAN-13, Code 39, Code 128, EAN 128, Interleaved 2 of 5, and Codabar					
Laser Cooling	Thermostatically controlled thermocooler					
Primary Mirror Type	Rotating, 10-faceted					
Skew Tolerance	$\pm$ 40° from normal					
Pitch Angle	$\pm$ 50° from normal					
Decode Depth of Field	Refer to page 6.					
Maximum Element Width	7.0 in. (177.8 mm)					
Print Contrast Minimum	25% absolute dark/light reflectance differential, measured @ 670 nm					
Output Wavelength	670 nm nominal					
Ambient Light Immunity						
Artificial Lighting	450 ft candles (indoor: fluorescent, incandescent, mercury vapor, and sodium vapor)					
Sunlight	1800 ft candles					
Housing Rating	NEMA 12, IP 64					
Operating Temperature	32° F to 122° F (0° C to 50° C)					
Storage Temperature	-20° F to 158° F (-29° C to 70° C)					
Humidity	up to 95% noncondensing					
Dimensions (L x W x H)	3.47 x 2.59 x 1.32 in. (8.81 x 6.57 x 3.35 cm)					
CDRH Class	II					
Agency Certification	<ul style="list-style-type: none"> <li>•cUL listed</li> <li>•UL listed</li> <li>•CE marked for all applicable directives.</li> <li>•TUV EN approved</li> </ul>					

## Reader Dimensions

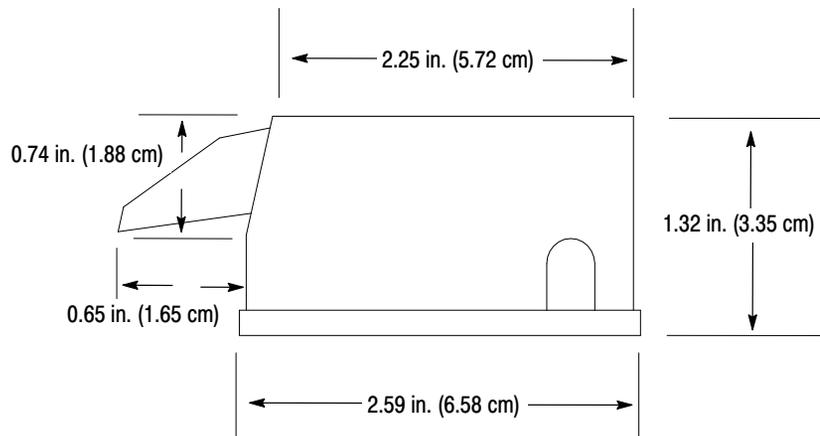
Refer to the drawing below for the scanner dimensions. (The drawings are not to scale.)



Side View (Catalog Nos. 2755-LS7-SA, -SB, -RA, and -RB)

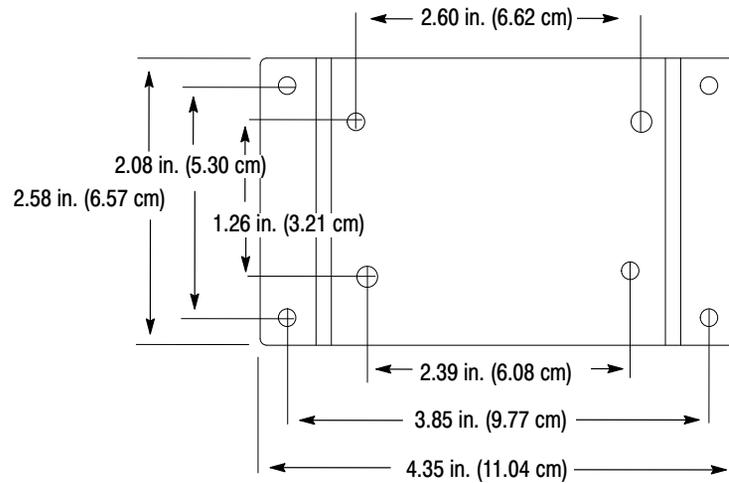


Side View (Catalog Nos. 2755-LS7-SBV and -RBV)



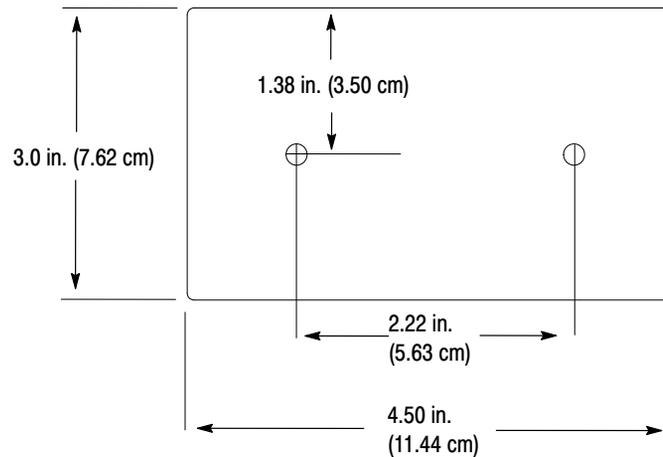
## Mounting Plate Dimensions

Refer to the drawing below for the mounting plate dimensions. (The drawing is not to scale.)



## Interface Box Dimensions

Refer to the drawing below for the interface box dimensions. (The drawing is not to scale.)



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## Allen-Bradley Support

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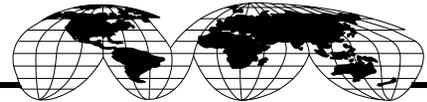
- sales and order support
- product technical training
- warranty support
- support service agreements

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