

Leddar™ IS16 Industrial Solid-State LiDAR Sensor



Industrial
automation



Multi-Segment Flash LIDAR with IP67 Enclosure for Harsh Industrial Environments

Specially designed for the industrial market, the Leddar™ IS16 industrial solid-state sensor is optimized for 0 to 50 m detection and ranging applications, providing both distance and angular positioning while performing fast, continuous, and accurate analysis of the area.

The 48-degree beam, produced by diffused light pulses and processed through innovative algorithms, enables this unique sensor to detect, locate, and measure a wide range of objects under various environmental conditions.

Features

- 16 independent segments with simultaneous acquisition and lateral discrimination capabilities
- 48-degree beam for optimized field of view
- 0 to 50 m detection range
- Fast data refresh rate (up to 50 Hz)
- LCD display for configuring and monitoring ongoing operations
- Fast setup and integration

Benefits

- IP67 weather-resistant enclosure
- Proven reliability in harsh conditions
- Immune to ambient light
- No moving parts, for superior robustness
- Low power consumption

Presence Detection Mode

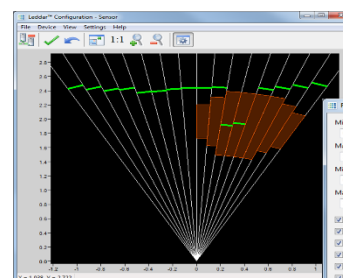
The IS16 software includes Presence Detection mode, where the PNP/NPN outputs can be set according to whether or not there are objects within the configured detection zones (two zones, one per output).

With the “Teach Configuration” feature, the sensor can define the perimeter of its surroundings as a detection zone. In Quick mode, a near limit and a far limit can be easily configured to quickly define detection zones. Alternatively, zones can also be configured manually in Advanced mode, where near and far limits can be set for each segment and unwanted segments, deactivated.

Raw Measurements Mode

The IS16 also provides the capabilities to acquire and log all measurements from all segments in real time through the RS-485 link. Each measurement provides the distance of the detected object, the index of the segment it was detected in, and the intensity of the measurement (indication of how much light was reflected off the object and captured by the sensor).

Presence Detection mode



Raw Measurements mode

Min Amplitude	Max Amplitude	Min Distance	Max Distance	Seg	Distance	Amplitude	Flags
0	100.0	0	100.0	1	2.65	131.04	01
				2	2.58	239.04	01
				3	2.51	289.93	01
				4	2.49	289.92	01
				5	2.42	452.42	00
				6	2.41	439.07	00
				7	2.41	437.32	00
				8	2.41	436.75	01
				9	2.41	433.44	00
				10	2.45	380.39	01
				11	2.48	391.54	01
				12	2.49	336.94	01
				13	2.51	249.25	01
				14	2.55	269.92	01
				15	2.61	219.93	01
				16	2.68	123.46	01

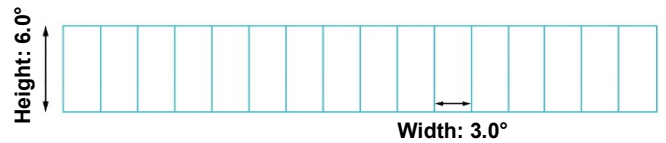
A custom zone can be defined and unneeded segments, disabled

Specifications	
Field of view (°)	Horizontal 48, vertical 6
Discrete output	2 x PNP/NPN
Analog output	4-20 mA ¹ , 0-10 V ¹
Interfaces	USB, RS-485, CAN
Wavelength (nm)	940
Power supply (VDC)	12 to 30
Dimensions (mm)	136 (H) x 86 (W) x 70 (D)
Weight (g)	430
Connector	M12
Display	Optional control panel with LCD and 4 buttons

¹ Provision for future use.



Segmentation of a 48° Beam



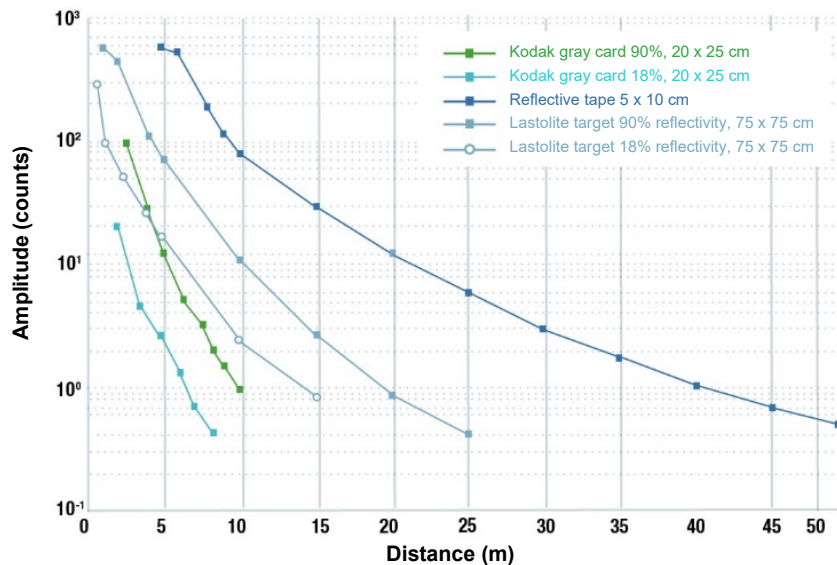
System Performance	
Detection range ² (m)	0 to 50
Accuracy (cm)	±5
Data refresh rate (Hz)	Up to 50
Operating temperature range (°C)	-40 to +50
Eye safety	IEC 62471:2006 (exempt lamp classification)
Acquisition	16 segments simultaneously
Distance precision (mm)	±6
Distance resolution (mm)	±10
Ingress protection rating	IP67
Power consumption (W)	5.6
Regulatory compliance	CE, FCC, RoHS

² Varies according to target.

Configurations

- **IS16-75E0001**
RS-485 & USB with LCD and Advanced Detection mode
- **IS16-75E0003**
RS-485 & USB, no LCD, no Advanced Detection mode
- **IS16-75E0004**
CAN bus & USB, no LCD, no Advanced Detection mode
- **IS16-75E0005**
CAN bus & USB, with LCD and Advanced Detection mode

Amplitude vs. Distance



The chart on the left displays the detection amplitude of a 48° sensor for five reference objects (photography gray cards and reflective tape) of varying size and reflectivity.

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