

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

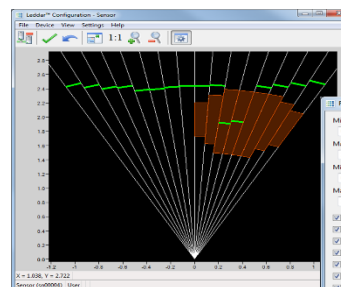
The IS16 software includes Presence Detection mode, where the PNP/NPN outputs can be set according to whether or not there are objects within the configured detection zones (two zones, one per output).

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	0	1	2.65	131.04	03
0	100.0	0	0	2	2.58	239.94	03
0	100.0	0	0	3	2.51	289.93	03
0	100.0	0	0	4	2.49	289.92	03
0	100.0	0	0	5	2.42	452.42	00
0	100.0	0	0	6	2.41	439.97	00
0	100.0	0	0	7	2.42	437.52	00
0	100.0	0	0	8	2.44	436.75	03
0	100.0	0	0	9	2.44	433.44	00
0	100.0	0	0	10	2.45	380.39	03
0	100.0	0	0	11	2.48	391.54	03
0	100.0	0	0	12	2.49	336.94	03
0	100.0	0	0	13	2.51	249.25	03
0	100.0	0	0	14	2.55	269.92	03
0	100.0	0	0	15	2.61	233.93	03
0	100.0	0	0	16	2.68	123.46	03

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

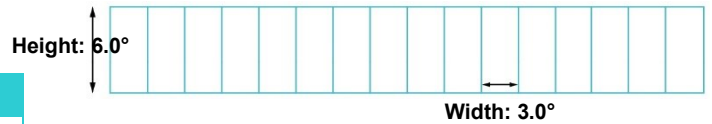
¹ Provision for future use.

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.



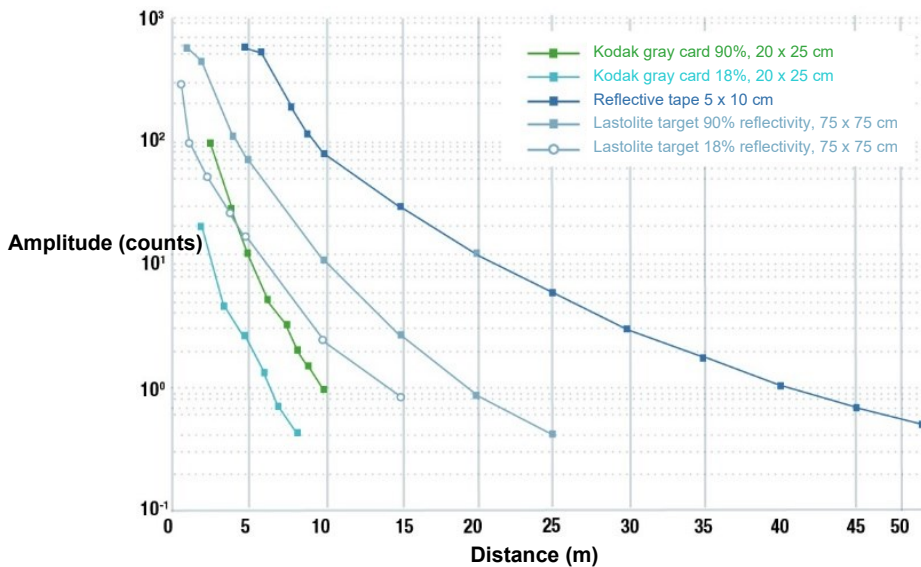
Segmentation of a 48° Beam



Configurations

- **IS16-75E0002** (replaces IS16-75E0001)
RS-485 & USB with LCD and Advanced Detection mode
- **IS16-75E0013** (replaces IS16-75E0003)
RS-485 & USB, no LCD, no Advanced Detection mode
- **IS16-75E0014** (replaces IS16-75E0004)
CAN bus & USB, no LCD, no Advanced Detection mode
- **IS16-75E0015** (replaces 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.

LeddarTech® has made every effort to ensure that the information contained in this document is accurate. Any information herein is provided “AS IS.” LeddarTech shall not be liable for any errors or omissions herein or for any damages arising out of or related to the information provided in this document. LeddarTech reserves the right to modify design, characteristics and products at any time, without notice, at its sole discretion.

LeddarTech does not control the installation and use of its products and shall have no liability if a product is used for an application for which it is not suited. You are solely responsible for (1) selecting the appropriate products for your application, (2) validating, designing and testing your application and (3) ensuring that your application meets applicable safety and security standards.

Furthermore, LeddarTech products are provided only subject to LeddarTech's Sales Terms and Conditions or other applicable terms agreed to in writing. By purchasing a LeddarTech product, you also accept to carefully read and to be bound by the information contained in the User Guide accompanying the product purchased.

LeddarTech®

CANADA – USA – AUSTRIA – FRANCE – GERMANY – ITALY – ISRAEL – HONG KONG – CHINA

Head Office

4535, boulevard Wilfrid-Hamel, Suite 240
Québec (Québec) G1P 2J7, Canada
leddarsensor.com

Phone: + 1-418-653-9000

Toll-free: 1-855-865-9900