Leddar® IS16

MULTI-ELEMENT INDUSTRIAL SENSOR

High-performance, cost-effective, detection and ranging for any environment

Specially designed for the industrial market, the Leddar® IS16 Multi-Element Industrial Sensor is optimized for 0 to 50 meter (165 ft.) detection and ranging applications, providing both distance and angular positioning while performing fast, continuous and accurate analysis of the area.

The 45-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 (solid or liquid) under various environmental conditions.

Features

- 16 independent segments with simultaneous acquisition and lateral discrimination capabilities
- 45-degree beam, for optimized field of view
- 0 to 50 meter detection range (165 ft.)
- Rapid data acquisition time up to 50 Hz
- LCD display for configuring and monitoring ongoing operations

Benefits

- Proven reliability, even in harsh conditions
- Immune to ambient light
- IP67 weather-resistant enclosure
- No moving parts, for ultimate robustness
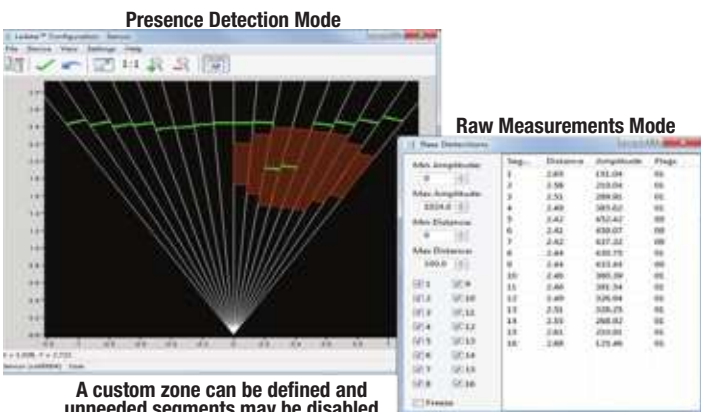- Low power consumption
- Best cost/performance ratio

Presence Detection Mode

The IS16's 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 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 can be 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 of the object and captured by the sensor).

Presence Detection Mode

Raw Measurements Mode

A custom zone can be defined and unneeded segments may be disabled

Features

Beam options	45° [2]
Discrete output	2 x PNP/NPN
Analog output	4-20 mA [3], 0-10 V [3]
Interfaces	USB, RS-485
Wavelength	940 nm
Power supply	12 to 30 VDC
Dimensions	136 mm x 86 mm x 70 mm
Weight	430 g
Connector	M12
Human/machine interface	Optional control panel with LCD and 4 buttons

[2] Contact LeddarTech for other optics options available upon request.
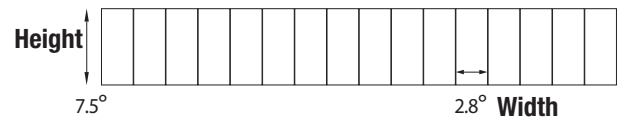
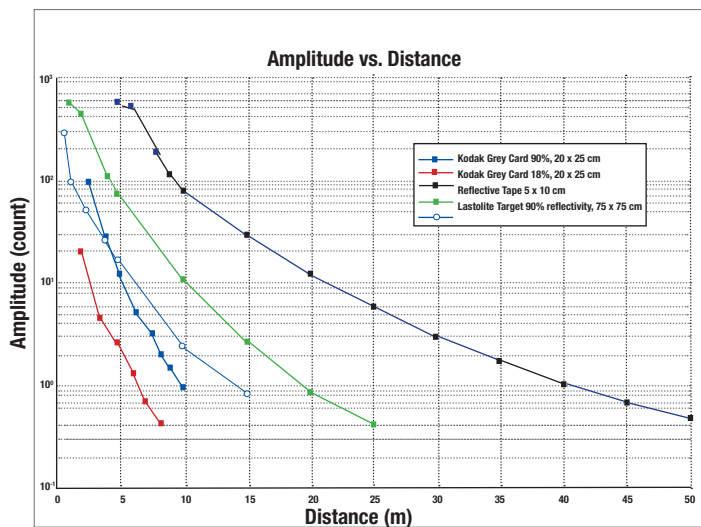[3] Provision for future use.

System performance

Detection range	0 to 50 meters (165 ft.) [1]
Accuracy	5 cm
Data refresh rate	up to 50 Hz
Operating temperature range	-40°C to +50°C
Meets IEC 62471: 2006 criteria	Exempt lamp classification
Acquisition	16 segments simultaneously
Distance precision	6 mm
Distance resolution	10 mm
Ingress protection	IP67
Power consumption	5.6 W

[1] Varies according to target.

Segmentation of a 45° beam

Amplitude vs. Distance

Amplitude vs. Distance

- Kodak Grey Card 90%, 20 x 25 cm
- Kodak Grey Card 18%, 20 x 25 cm
- Reflective Tape 5 x 10 cm
- Lastolite Target 90% reflectivity, 75 x 75 cm

The chart below displays the detection amplitude of a 45° sensor for five reference objects (photography grey cards and reflective tape) of varying size and reflectivity.

Ordering information

LED - S - XX - XX

Interfaces
10 = USB, RS-485
20 = USB, RS-485, 4-20mA, 0-10 V,
NPN/ PNP, LCD, buttons, indicators

Beam selection
45°

Included with the Leddar IS16:
- Leddar Configuration Software CD

LeddarTech®