LeddarTech®

Leddar™ IS16
Industrial Solid-State LiDAR Sensor

Industrial Automation

Multi-Segment Flash LiDAR with IP67 Enclosure for Harsh Industrial Environment

Specially designed for the industrial market, the Leddar® IS16 Industrial solid-state 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 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 meter detection range (165 ft.)
- Rapid data acquisition time 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
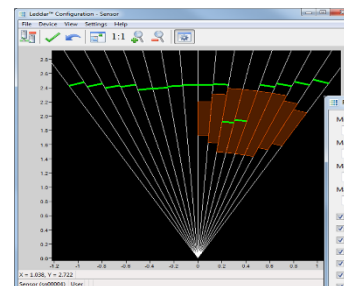
Presence Detection Mode

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 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).

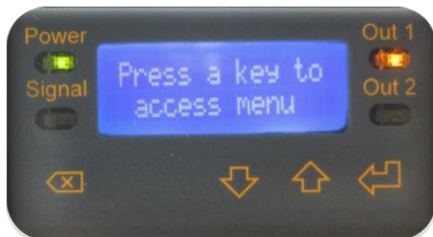Presence Detection Mode

Raw Measurements Mode

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

Features

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

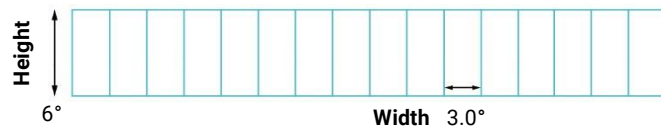*2. Provision for future use.*

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
- **Regulatory compliance** CE, FCC, RoHS

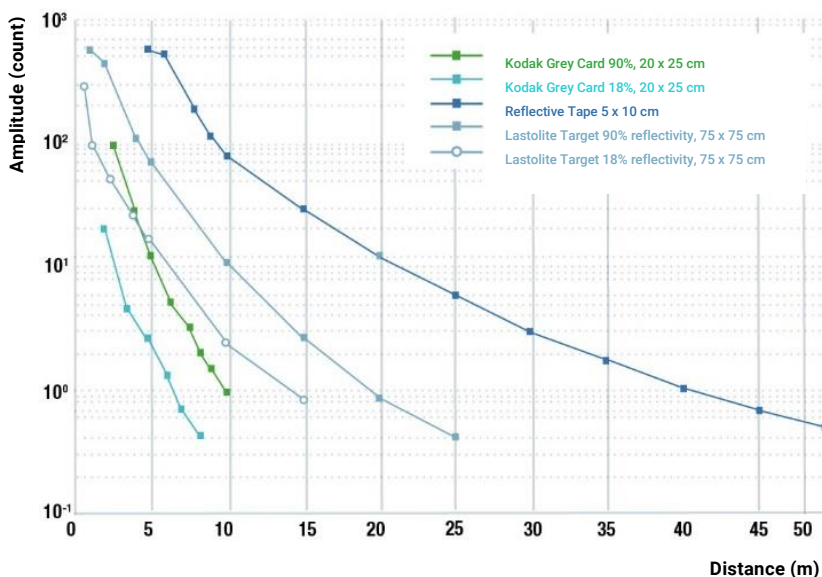*1.Varies according to target.*

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

Segmentation of a 48° beam

Height 6°

Width 3.0°

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
- Lastolite Target 18% reflectivity, 75 x 75 cm

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

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