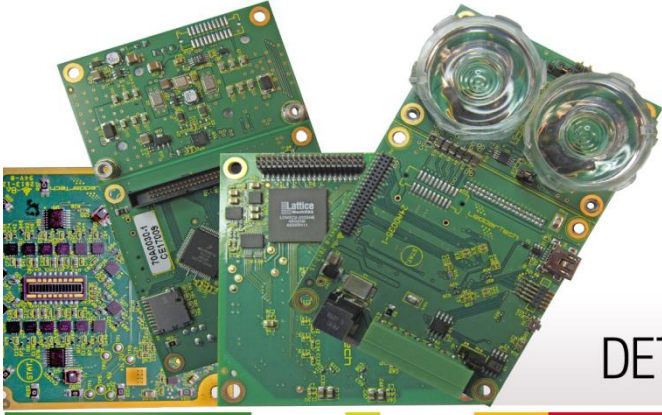


Leddar™ **M16**

Multi-Element Sensing Module

THE UNIQUE LED-BASED DETECTION AND RANGING TECHNOLOGY



Leddar™ M16: Add Sensing Intelligence to Your Product

The Leddar™ Sensor Module can be integrated into any detection and ranging system, enabling developers and integrators to make the most of Leddar™ technology with unmatched flexibility thanks to its compact size and low weight, ease of integration, low power consumption, and high reliability. Combining multiple independent active elements, in this case 16, into a single sensor, Leddar™ provides continuous rapid and accurate detection and ranging — including lateral discrimination — in the entire wide beam, without any moving parts.

Discover Leddar™ Technology

Leddar™ (Light-Emitting Diode Detection and Ranging) is a unique detection and ranging technology created by LeddarTech that performs time-of-flight measurement using pulses from infrared LEDs. The diffused light beam, processed through innovative algorithms, allows for the detection of a wide range of objects under various environmental conditions.

Interfaces

A 3.81 mm x 8 pin male header is provided for interfacing through a cable harness or terminal block. Pin-out is as follows:

Pin	1	2	3	4	5	6	7	8
Function	GND	DCIN	GND	RS-485+	RS-485-	GND	CAN-H	CAN-L

A USB “Mini-B” connector is also provided for use with the Leddar™ Software Development Kit, and a 2 x 20, 0.050” header is provided for custom expansion. Please contact the factory for specific interface requirements.

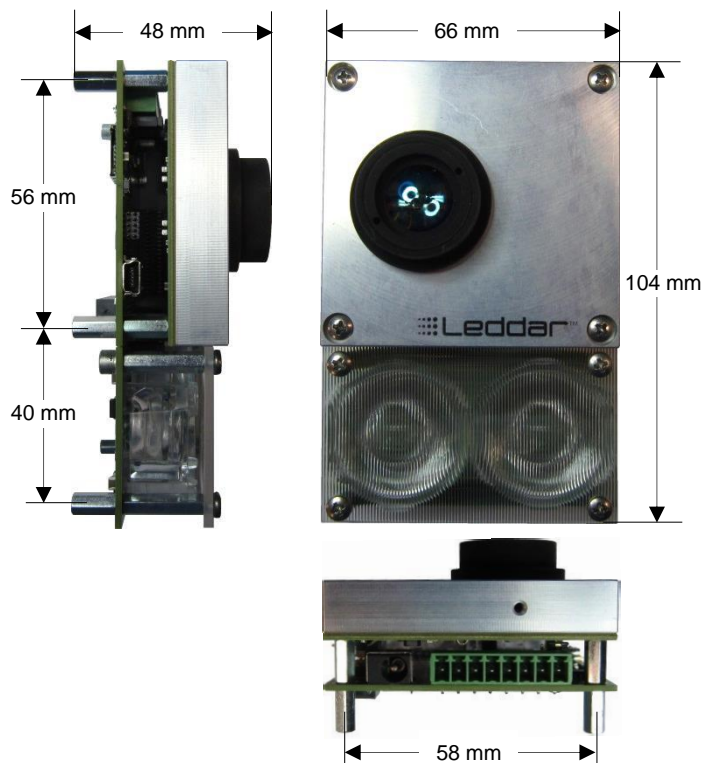
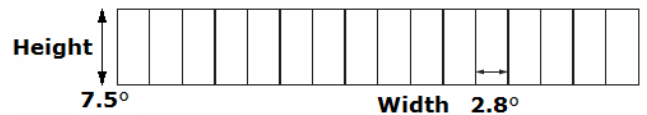
Mounting

The module can be mounted from the back with 6 M3 machine screws.

Leddar™ Receiver Assembly

The Leddar™ receiver includes 16 independent segments with simultaneous acquisition capabilities. Several beam options are available, ranging from 9° to 95° (see back page). The beam width and height depend on the selected beam option (see example below).

Example: 45° beam option



Leddar™ Source and Control Assembly

The Leddar™ source and control assembly includes IR LED emitters with dominant wavelength of 940 nm and incorporates the processing and I/O for the targeted applications. In addition, the beam of the source and control assembly is matched with the Leddar™ receiver assembly.

System Performance

Detection range	0 to 50 meters (165 ft.) [*]
Accuracy	5 cm
Data refresh rate	6.25 Hz to 100 Hz
Operating temperature range	-40°C to +85°C
Acquisition	16 segments simultaneously
Distance precision	6 mm
Distance resolution	10 mm
Power consumption	4 W

^{*}Varies according to optics and target.

Features

Beam options	9° to 95°
Interfaces	USB, RS-485, CAN, UART
Wavelength	940 nm
Meets IEC 62471:2006 criteria	Exempt lamp classification
Power supply	12 or 24 VDC (jumper-selectable)
Dimensions	104 mm x 66 mm x 48 mm [*]
Weight	180 g

^{*}Apply to 45-degree model; different dimensions apply to other models, according to optics.

Amplitude vs. Distance

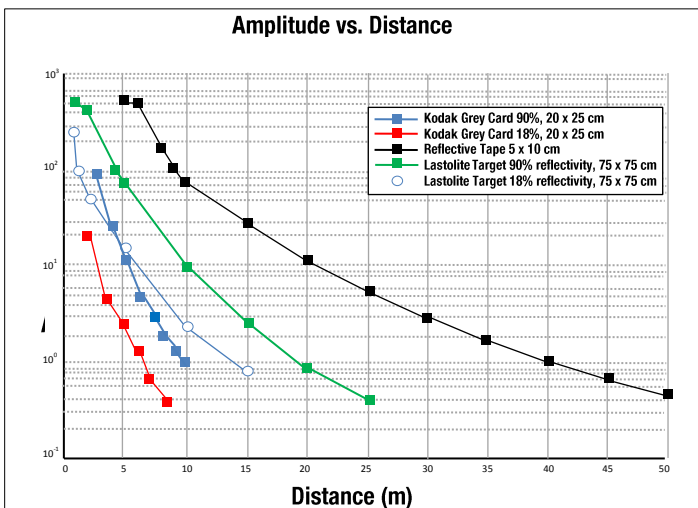


Figure: Detection amplitude of a 45° sensor for five reference objects (photography grey cards and reflective tape) of varying size and reflectivity.

Ordering Information

LED - MOD - XX - XX

Interfaces

10 = USB, RS-485, CAN, UART

Beam

9°, 18°, 24°, 34°, 45°, 95°

Product

MOD = Leddar™ Sensor Module

Included with the Leddar™ Sensor Module:

- Receiver assembly
- Source and control assembly

^{*}Leddar™ is a registered trademark of LeddarTech Inc. Leddar™ technology is covered by one or more of the following U.S. patents: 7635854, 7640122, 7855376, 7895007, 7917320, 8159660, 8242476, 8310655, 8319949, or international equivalents. Other patents pending.