

Lecdar[®] one



Actual size

SINGLE-ELEMENT SENSOR MODULE

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

The LecdarOne Sensor Module brings a whole new dimension to your innovation, adding valuable sensing intelligence to a wide variety of products. As the LecdarOne can be easily integrated, almost any system can benefit from its advanced detection and ranging capabilities. The narrow, yet diffuse beam offers excellent overall range and performance. In addition, the module's compact size, low power consumption and high accuracy gives developers and integrators great flexibility to enhance their own branded products. This single-element sensor module is particularly suitable for applications such as level sensing, security and surveillance and proximity detection, just to name a few.

Features

- 3-degree, diffuse beam
- 0 to 40 meter detection range (130 ft.)
- Rapid data acquisition time up to 70 Hz
- Very compact (2" diameter)

Benefits

- Proven reliability, even in harsh conditions
- Immune to ambient light
- No moving parts, for ultimate robustness
- Easy to integrate, includes Lecdar Enabler SDK
- Low power consumption
- Best cost/performance ratio

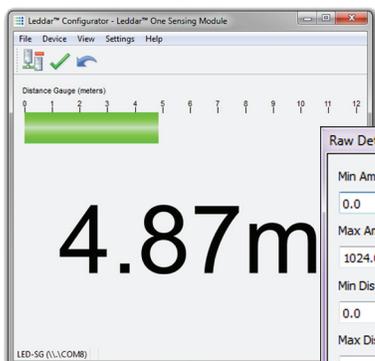
Interfaces

The LecdarOne offers an efficient six-pin interface, including a 3.3 V UART link, or RS-485. The module uses the MODBUS protocol, providing a robust, standard register-access interface for easy configuration and acquisition of measurement data. An interrupt signal is also provided to facilitate low-latency data acquisition. The power and interface signals are included on a six-pin standard 0.1" pitch header. The RS-485 option, in combination with MODBUS, makes it easy to integrate multiple sensors with an RS-485 network.

Additional Interface Options

With the addition of an expansion module, the LecdarOne can be tailored to the specific needs of any application. For example, the module is available upon request with PNP/NPN, 4-20 mA and 0-10 V outputs, and RS-485 link for industrial applications such as level sensing and many others.

Lecdar Configurator Window



Raw Detections Window

Min Amplitude:	Seg	Distance	Amplitude	Flags
0.0	1	2.289	31.8	1
	2			
Max Amplitude:	3			
1024.0	4			
Min Distance:	5			
0.0	6			
Max Distance:	7			
100.0	8			

Configuration Software and Development Kit

To facilitate development and integration, dedicated configuration software (Lecdar Configurator) and a development kit (Lecdar Enabler SDK) are included with the module. The Lecdar Configurator enables users to set up the sensor, as well as view, record and play back sensor measurement data. The Lecdar Enabler SDK includes an example program and complete source code that demonstrates configuration and data acquisition through the serial link and MODBUS protocol. The code can be easily ported to any system, resulting in fast integration in the final application.

Features

Beam	3°
Interfaces	3.3 V UART or RS-485
Wavelength	850 nm
Power supply	5 V
Diameter	50.8 mm
Weight	14 g

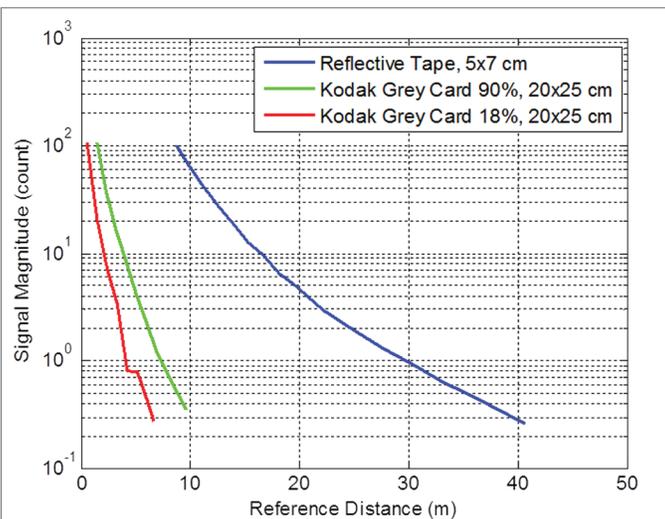
Interface pinouts

1	2	3	4	5	6
GND	IRQ	5 V	RX or RS-485+	TX or RS-485-	RESET_N

Legend:
 RX/TX = 3.3 UART
 RS-485+ / RS-485- = RS-485

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Amplitude vs. Distance



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

System performance

Detection range	0 to 40 meters (130 ft.) ¹
Accuracy	5 cm
Data refresh rate	Up to 70 Hz
Operating temperature range	-45°C to + 85°C
Meets IEC 62471: 2006 criteria	Exempt lamp classification
Distance precision	5 mm
Distance resolution	3 mm
Power consumption	1.3 W

¹Varies according to target.

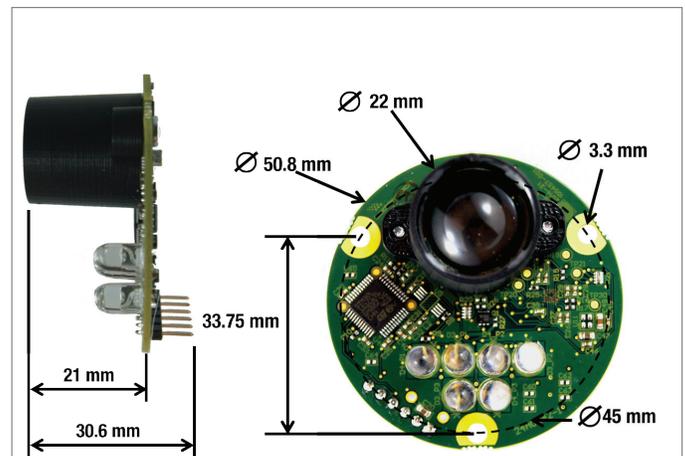
Ordering Information

LED - MOD1 - 3 - XX
 Interfaces
 10 = 3.3 V UART
 20 = RS-485

Optional Accessories:

- USB to 3.3 V UART cable (part number: 74D0002)
- USB to RS-485 cable (part number: 74D0001)
- Bracket for standard tripod mount (1/4" - 20) — (part number: 74D0003)
- Expansion module with PNP/NPN, 4-20 mA, 0-10V, RS-485 (available upon request)

Dimensions



Mechanical Integration

- Easy to install (3 screws)
- Ideal for NPT fitting