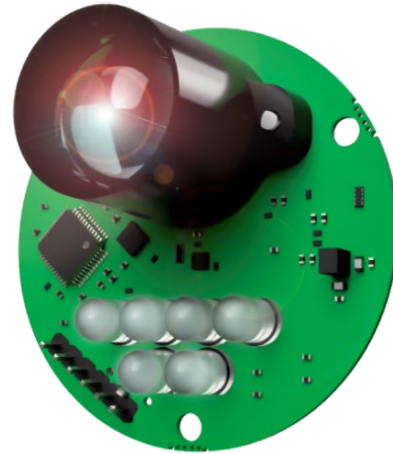# LeddarOne™

Single-Segment LiDAR Sensor Module

Drones

LeddarOne Overview

The LeddarOne single-segment LiDAR sensor module is dedicated to detecting objects and providing precise distance measurements at up to 40 m.

The narrow LED illumination beam offers excellent overall range and performance, supported by Leddar technology's patented digital signal processing algorithms. This single-detection-segment sensor module is particularly suitable for applications such as optical range finding, drone altimetry, level sensing, proximity measurement, security and surveillance, vehicle detection, and height warning.

The module's compact size, low power consumption, and high accuracy gives developers and integrators great flexibility to enhance their own branded products and applications.

Interfaces and Communication

The LeddarOne 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-inch pitch header. The RS-485 option, in combination with MODBUS, makes it easy to integrate multiple sensors with an RS-485 network.

Configuration Software and Development Kit (SDK)

To facilitate development and integration, dedicated configuration software (Leddar Configurator) and a development kit (Leddar Enabler SDK) are included with the module. The Leddar Configurator enables users to set up the sensor and view, record, or play back sensor measurement data. The Leddar 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 rapid integration into the final application.

LeddarOne Features

- 3° diffused beam
- 0 to 40-meter detection range
- Fast data refresh rate (up to 140 Hz)
- Compact (51 mm diameter) and lightweight

Mechanical Integration

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

Specifications

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

System Performance

- Detection range[1] (m): 0 to 40
- Accuracy (cm): ±5
- Data refresh rate (Hz): Up to 140
- Operating temperature range (°C): -45 to +85
- Distance precision (mm): ±5
- Distance resolution (mm): ±3
- Power consumption (W): 1.3
- Eye safety: IEC 62471:2006 (exempt lamp classification)

[1] Varies according to target.

Optional Accessories

- USB to 3.3 V UART cable (P/N 74D0002)
- USB to RS-485 cable (P/N 74D0001)
- Bracket for standard tripod mount, 1/4 in –20 (P/N 74D0003)
- Starter kit, including bracket, screws, and cable

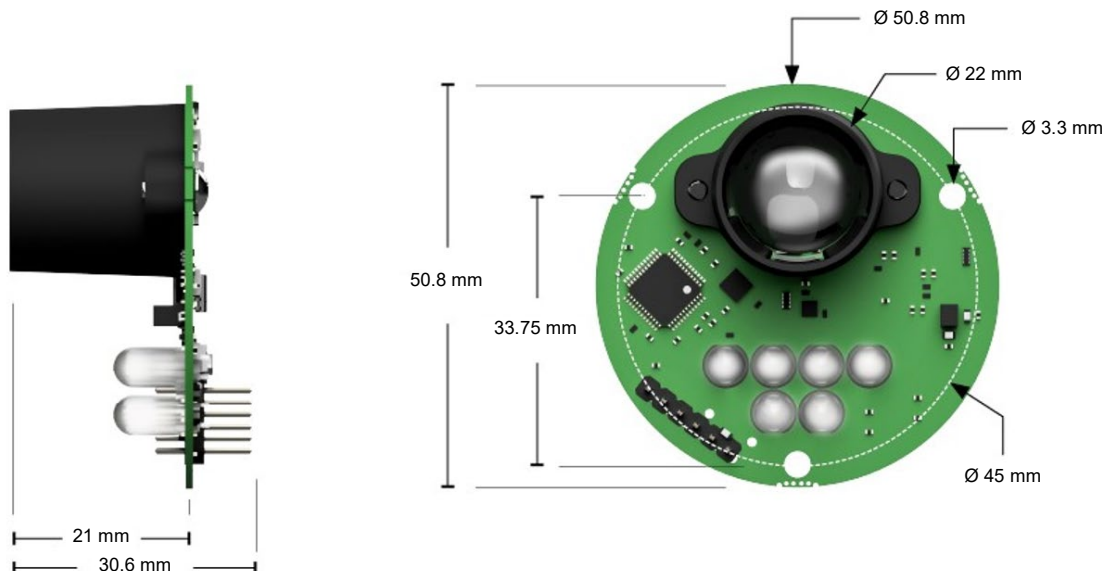| Interface Pinout					
1	2	3	4	5	6
GND	IRQ	5V	RX or RS-485+	TX or RS-485-	RESET_N

Legend:

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

The power and interface signals are included on a six-pin standard 0.1-inch pitch header.
The RS-485 option, in combination with MODBUS, makes it easy to integrate multiple sensors with an RS-485 network.

21 mm
30.6 mm

Ø 50.8 mm
Ø 22 mm
Ø 3.3 mm
50.8 mm
33.75 mm
Ø 45 mm

LeddarTech®

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