Actual size

Leddar™ One
Sensing Module

THE UNIQUE LED-BASED DETECTION AND RANGING TECHNOLOGY

Leddar™One: Innovation in the Palm of Your Hand

The Leddar™One Sensing Module brings a whole new dimension to your innovation, adding valuable sensing intelligence to a wide variety of products. As the Leddar™One can be easily integrated, almost any system can benefit from its advanced detection and ranging capabilities. This single-element sensing module is particularly suitable for applications such as level sensing, security and surveillance and proximity detection, just to name a few.

The focused, yet conic beam offers excellent overall range and performance. In addition, the module's compact size, ease of integration, low power consumption and high accuracy gives developers and integrators great flexibility to enhance their own branded products.

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. Leddar™ continuously provides rapid and accurate detection and ranging, covering narrow and wide beams, in all cases without any moving parts. The diffused light beam, processed through innovative algorithms, allows for the detection of a wide range of objects under various environmental conditions.

Interfaces

The Leddar™One 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 with the following pinout:

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 V UART
RS-485+ / RS-485- = RS-485

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 Leddar™One 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.

Configuration Software and Software Development Kit

To facilitate development and integration, LeddarTech provides dedicated configuration software (Leddar™ Configurator) and a development kit (Leddar™ Enabler SDK) for its module. The Leddar™ Configurator enables users to set up the sensor, as well as view, record and 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 fast integration of the sensor in the final application.

Mechanical Integration

The module's compact form factor and standard connector greatly facilitate integration in systems requiring detection and ranging capabilities. Although not specific to level sensing, it is particularly well suited for NPT enclosures of 2" or more.
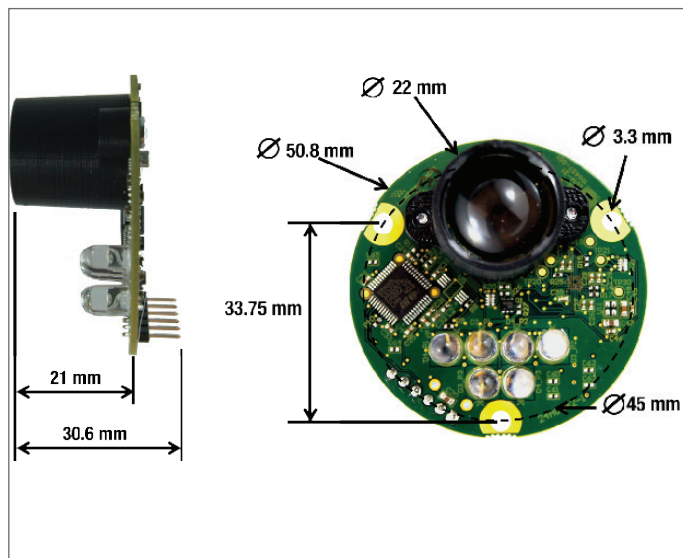
System Performance

Detection range	0 to 20 meters (65 ft)[1]
Accuracy	5 cm
Data refresh rate	100 Hz
Operating temperature range	-45°C to 85°C
Distance precision	6 mm
Distance resolution	10 mm
Power consumption	1.5 W

[1] Varies according to optics and target.

Features

Beam	3°
Interfaces	3.3 V UART or RS-485
Wavelength	850 nm
Meets IEC 62471: 2006 criteria	Exempt lamp classification
Power supply	5 V
Diameter	50.8 mm
Weight	25 g

Dimensions

Ø 22 mm
Ø 50.8 mm
Ø 3.3 mm
Ø 45 mm
33.75 mm
21 mm
30.6 mm

Ordering Information

LED1 - MOD1 - XX - XX

Interfaces
10 = 3.3 V UART
20 = RS-485

Beam
3º

Product
MOD1 = Leddar™One Sensing Module

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)

Creator of the Leddar™ technology
LeddarTech

ADD SENSING INTELLIGENCE TO YOUR PRODUCT

Tel: 1 418 653-9000
TFN: 1 855 865-9900
Fax: 1 418 653-9099

www.leddartech.com

The content of this datasheet is subject to change without notice