The LeddarOne Sensor Module brings a whole new dimension to your innovation, adding valuable sensing intelligence to a wide variety of products. As the LeddarOne 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 Leddar Enabler SDK
- Low power consumption
- Best cost/performance ratio

Interfaces
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 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 LeddarOne 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 Development Kit
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, 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 in the final application.
### Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beam</td>
<td>3°</td>
</tr>
<tr>
<td>Interfaces</td>
<td>3.3 V UART or RS-485</td>
</tr>
<tr>
<td>Wavelength</td>
<td>850 nm</td>
</tr>
<tr>
<td>Power supply</td>
<td>5 V</td>
</tr>
<tr>
<td>Diameter</td>
<td>50.8 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>14 g</td>
</tr>
</tbody>
</table>

### Interface pinouts

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GND</td>
</tr>
<tr>
<td>2</td>
<td>IRQ</td>
</tr>
<tr>
<td>3</td>
<td>5 V</td>
</tr>
<tr>
<td>4</td>
<td>RX or RS-485+</td>
</tr>
<tr>
<td>5</td>
<td>TX or RS-485-</td>
</tr>
<tr>
<td>6</td>
<td>RESET_N</td>
</tr>
</tbody>
</table>

Legend:

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

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.

### System performance

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

Varies 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)

### 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.

### Mechanical Integration

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

### Dimensions

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