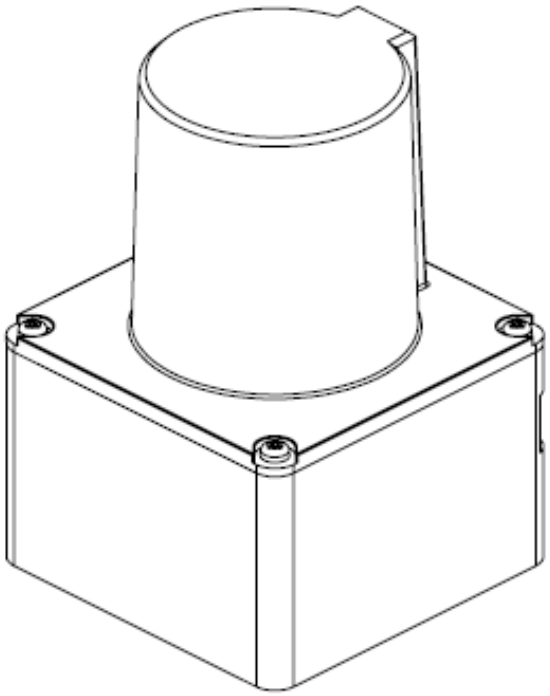
LTME-02 SERIES 2D LIDARS

Product Specifications



Shenzhen Litra Technology Co., Ltd

Version 1.0

1 Overview

The LTME-02 series are the latest generation of 2D LiDARs from Litra Technology. Equipped with a high performance optical measurement engine, the sensor constantly scans the encompassing environment through an internal deflecting mirror in steady rotation, making high frequency distance measurements along the course, and outputs measurement results through Ethernet connection. Such data can be interpreted to reconstruct a map regarding obstacles and their positions in the scan plane, and is well suited for any application requiring real-world geometric information in a maximum of tens of meters' range. Some of the more common usage scenarios are:

- **Mobile platform navigation**: Measurement data from the sensor can be directly converted to 2D occupancy map and consumed by mobile base controller to aid in localization, navigation and obstacle avoidance.
- **Immersive interaction**: For large immersive interaction installations seen in exhibitions and art museums, the sensor can be utilized to turn walls or floor ground into virtual touch screens, providing ample interaction options to create vivid effects.
- **Optical non-contact profiling**: Mostly relevant to logistics and mining, pile of packages or ores can be scanned by the sensor to obtain detailed profiling, facilitating computation of volume in a quick and contactless manner.

This product is highlighted in the following aspects:

- **High performance**: The core optical measurement engine of LTME-02A series is geared towards long range and high repetition rate. As a result, the detection range of targets with 70% reflectivity is guaranteed to be more than 20 meters, and the device is able to carry out 30,000 measurements per second, making it an ideal solution for mobile platforms operating in openness and moving at a higher speed.
- **Dependable reliability**: LTME-02 series are engineered with reliability in mind. The mechanical subsystem is carefully constructed to minimize moving parts, making the overall design more resilient to mechanical vibration or shocking. Electrical components are similarly designed to provide standard-compliant ESD protection and EMC compatibility.
- **Miniature in size**: Benefiting from the rotating deflection mirror design and compact internal arrangement, LTME-02 series are small in size, featuring a height of less than 9 centimeters and each side of the base no more than 6 centimeters. This size can easily fit in situations where installation space is limited, making the sensor more adaptable to various usage scenarios.

2 Specifications

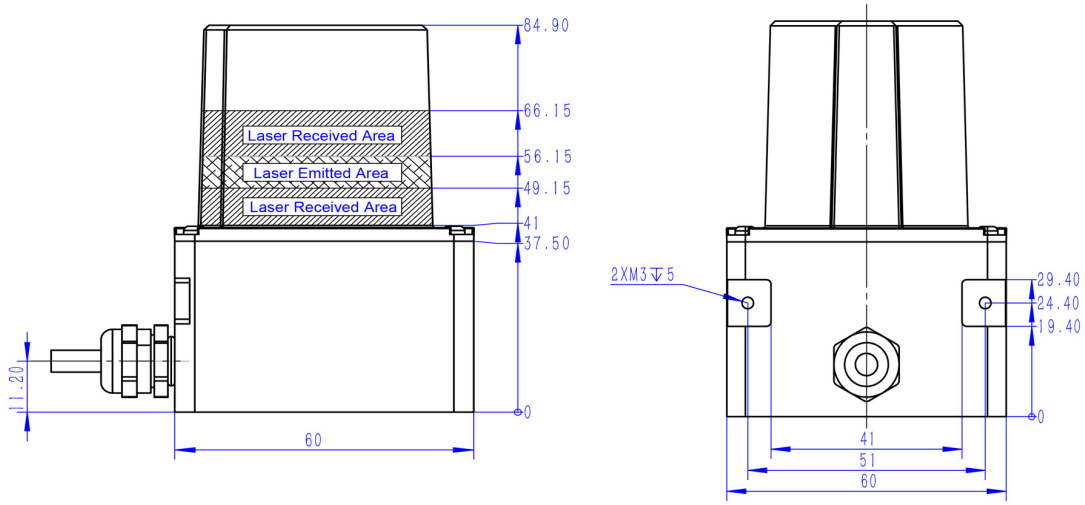
General	
Model	LTME-02A
Measurement Performance	
Ranging Principle	Pulsed ToF
Laser Wavelength	905 nm (infrared/invisible)
Working Range	≥20 m (70% remission)
	≥10 m (10% remission) [1]
Field of View	270°
Repetition Rate	30 kHz
Scan Rate	10 Hz/15 Hz/20 Hz/25 Hz/30 Hz
Angular Resolution	0.12°/0.18°/0.23°/0.35°/0.35°
Distance Resolution	1 cm
Absolute accuracy	±2 cm [2]

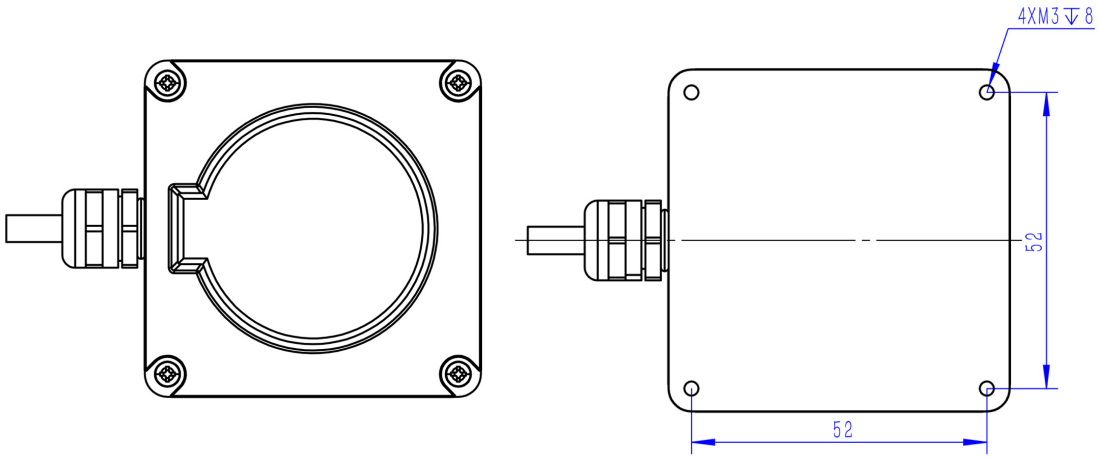
Electrical Characteristics	
Operating voltage	12 V DC
Power Consumption	<4 W / Peak
	<2 W / Typical [3]
Mechanical Characteristics	
Dimensions	84.9(H) × 60(L) × 60(H) mm
Weight	Approx. 250 g
Ambient Conditions	
Operation Temperature	-10°C ~ 60°C
Storage Temperature	-25°C ~ 75°C
Enclosure rating	IP65
Ambient light limit	80,000 Lux
Interface	
Physical Interface	DC 5.5 mm × 2.1 mm (Power)
	RJ45, 10/100 Ethernet (Data)
Communication Protocol	Custom protocol over TCP/UDP, with ranges & intensities
Software	
SDK	C++: https://github.com/LitraTech/ldcp_sdk
ROS Driver	https://github.com/LitraTech/ltme_node

[1] Typical value for targets with 10% remission
[2] Typical value for target remission from 10% to 70%, and ranges up to 10 meters
[3] Power consumption reaches peak upon startup for approx. 10 s, then drops down to typical value

3 Assembly Drawings

3.1 Device Body





3.2 Interface Box