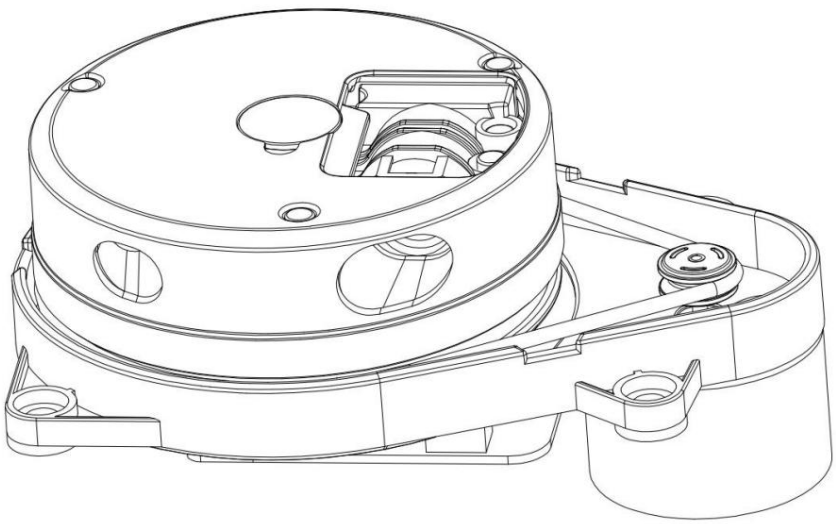
Delta-2A LiDAR Data Sheet

[Model: Delta-2A 5k/s, 8m]



Shenzhen Shanchuan Robotics Co., Ltd.

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1. Introduction

Delta-2A LiDAR is a laser radar developed by Shenzhen Shanchuan Robotics Co., Ltd. and Han's Laser

A new generation of low-cost, low-power two-dimensional laser radar. This product uses the principle of optical triangulation and combines

It combines wireless power transmission and wireless communication technologies, breaking through the life limit of traditional LiDAR and achieving long-term

Reliable and stable operation. Delta-2A LiDAR can achieve 8m radius in 2D plane.

It can scan 360° in all directions with a sampling frequency of 2-5KHz and generate a plane point cloud map signal of the space.

This cloud map information can be used for map surveying, robot positioning and navigation, object/environment modeling, and other practical

In application.

The typical rotation frequency of Delta-2A series laser radar is 4ÿ10hz.

Achieve an angular resolution of 0.3 to 0.8°.

Delta-2A series LiDAR can be used in various indoor environments and outdoor environments without direct sunlight.

At the same time, each laser radar has been strictly tested before leaving the factory to ensure that the laser emitted

The optical power meets FDA Class I eye safety level, ensuring safety for humans and pets.

2. Application scenarios (Robot mapping SLAM obstacle avoidance)

Delta-2A series LiDAR applications include but are not limited to the following areas:

1. Robot SLAM positioning and obstacle avoidance

2. Rapid and accurate industrial mapping

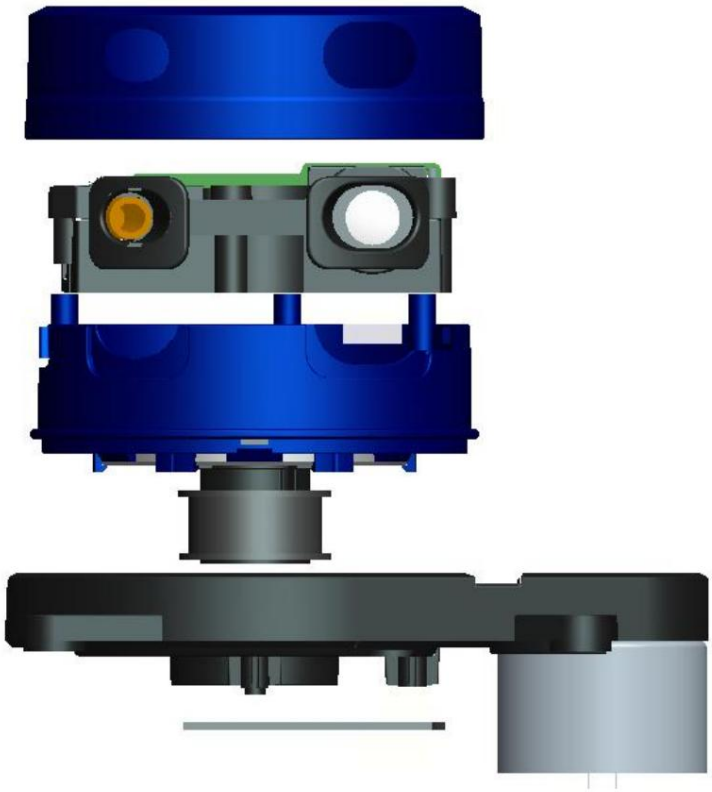
3. Robot ROS development

4. Game Interaction

3. System composition

Delta-2A series laser radar mainly includes laser ranging module, rotating mechanism, wireless power supply module

With wireless communication module.



4. Working Principle

Delta-2A series LiDAR uses optical triangulation ranging technology, combined with self-developed precision optics

The visual acquisition and processing mechanism can perform distance measurement at up to 5KHz per second. During each measurement, the laser

The radar emits a modulated infrared laser signal, which is diffusely reflected by the target object and then reflected by the laser radar.

The optical vision acquisition system receives the data and then processes it in real time through the MCU processor inside the Delta-2A LiDAR.

Data processing, calculate the distance from the target object to the laser radar and the current angle, and output it through the communication interface

Output to external devices.

The Delta-2A series radar is driven by a DC motor mechanism, and the laser radar ranging core will

The needle rotates to achieve a 360° full-scale scan of the surrounding environment, thereby obtaining the plane of the space in which it is located.

Point cloud map information.

5. Specifications

parameter	Delta-2A
Range	0.15mÿ8m(reflectivity 80%)
Sampling rate	5k/s
Scan frequency	4~10Hz
Laser wavelength	780nm
Laser power	4mW (maximum power)
Measurement accuracy	ÿ 1%@8m
Measurement resolution	0.25mm
Angular resolution	0.3~0.8°
Communication interface	UARTÿ5V TTLÿ
Rated power consumption	2W
Operating voltage	Distance measurement part DC 5V Motor drive DC3.3V
Starting current	500mA
Working current	400mA
volume	ÿ108mm*76mm*51mm
weight	185±2g
Levelness	ÿ 1°
Operating temperature	0 ÿ 45ÿ
Ambient light intensity	ÿ 1000 lux
Ambient humidity	ÿ 90%

6. Communication interface

Baud rate	230400
Working Mode	8 data bits, 1 stop bit, no parity
Output high level	4.6-5V
Output low level	ÿ 0.4

7. Mechanical Dimensions