

Benewake AD2-S-X3

Datasheet



The AD2-S-X3 independently developed by Benewake is a high-performance LiDAR that can be used as a core perception sensor in intelligent driving scenarios. It has an equivalent of 256 lines and an ultra-high resolution of up to $0.1^{\circ} \times 0.1^{\circ}$, enabling it to achieve high-definition detection capabilities within the entire field of view. It can accurately detect various targets.

The two-dimensional scanning system and array-based transceiver design adopted by AD2-S-X3 support continuous upgrading and iteration of product performance, better meeting the needs of enhanced scene perception and other applications.

AD2-S-X3 uses 905nm active light source sensing and has full-time sensing capabilities; it has strong environmental adaptability and is not affected by severe cold and heat. It can be widely used in major transportation scenarios such as highways, railways, civil aviation, water and mining trucks transportation.

Product Features



**Long range detection
capability**



**Ultra-high angular
resolution**



**Adjustable ROI in
entire FoV**



**Low power
consumption**

Applications



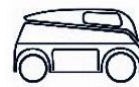
Intelligent driving



Trunk logistics



Intelligent mining

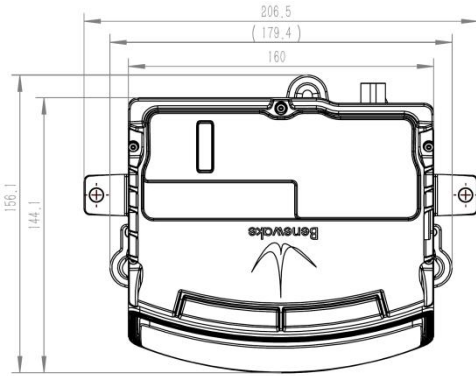


Last mile delivery

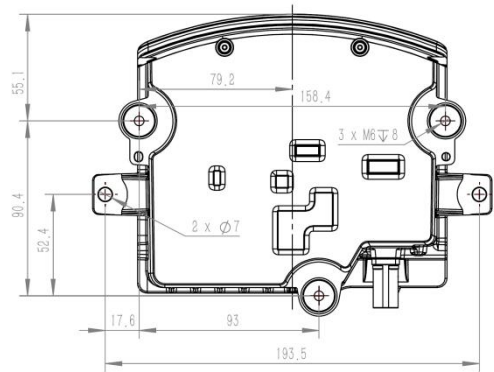
Specifications

Product Performance			
Performance parameters	Detection range	200m @10% reflectivity ^①	
	Minimum range	≤1.2m	
	FoV (H × V)	ROI Region	Non-ROI Region
		120°×8°	120°×25.6°
	Resolution (H × V)	0.1°×0.1°	0.2°×0.1°
	Point cloud data-rate	1.536M pts/s (without ROI) 2.016Mpts/s (with ROI)	
Accuracy ^②	5cm @1 σ		
Frame rate	10Hz		
Echo mode	Single & Dual Echo		
Number of equivalent lines	256		
Laser Parameters			
Laser wavelength	905nm		
Laser safety	Class 1 Eye-safe [IEC60825 - 1:2014]		
Data Output			
Data interface	1000Base-T1 Automotive Ethernet		
Transmission protocol	UDP		
Supported platforms	Windows、Linux (Ubuntu) & ROS drive		
Time synchronization	gPTP PTP NTP		
Mechanical/Electrical			
Average power consumption	≤15W		
Operating voltage	9~32V		
Operating temperature	-40℃ ~ +85℃		
Storage temperature	-40℃ ~ +105℃		
Dimensions (L×W×H)	49 x 160 x 144 mm		
Weight	1.2Kg		
Device interface	Tyco 2446023-1		
Protection level	IP67 & IP6K9K		

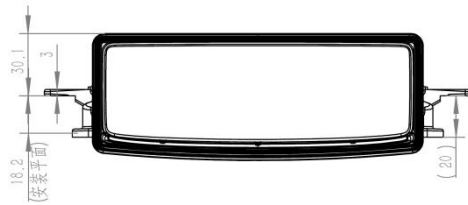
Dimensions (unit: mm)



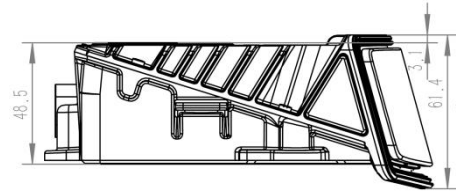
Top view



Bottom view



Front view



Side view

Notes to the specifications:

- ① The detection range is based on outdoor 100Klux ambient light condition, and any changes in environmental conditions may cause changes in the measurement results.
- ② The ranging accuracy is based on measurements taken at an ambient temperature of 25°C and it may vary due to various factors such as detection range, reflectivity, and other environmental conditions.

Declaration: The copyright of this specification belongs to © Benewake (Beijing) Co., Ltd. is not allowed to copy, modify, delete or translate the content of this specification without written permission from Benewake. Our product is constantly improving and updating, so the specifications of AD2-S-X3 products may change. Please refer to the latest version released by Benewake.