

Benewake AD2-S-X3

Datasheet



The AD2-S-X3 is a high-performance LiDAR that could be used as a core perception sensor in various scenarios. It has an equivalent of 128 channels and an high resolution of up to $0.2^{\circ} \times 0.2^{\circ}$, enabling its robust detection capabilities within the entire field of view.

The 2D scanning system and array-based transceiver design adopted by AD2-S-X3 allow a sustainable upgrading LiDAR performance, thus better enhance perception for various applications.

AD2-S-X3 has strong environmental adaptability and is not affected by severe environments. It can be widely used in industrial and transportation scenarios such as highways, railways, civil aviation and so on.

Product Features



**Long range detection
capability**



**Ultra-high angular
resolution**



**Adjustable ROI in
entire FoV**

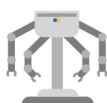


**Low power
consumption**

Applications



ADAS



Smart Industry



Smart Transportation

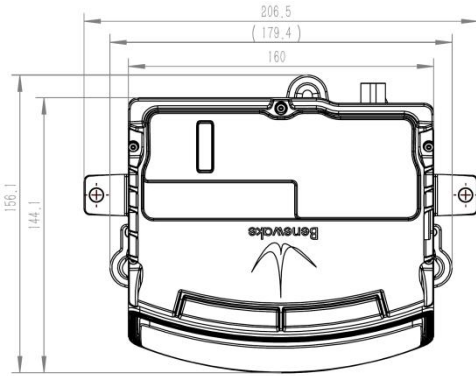


Last mile delivery

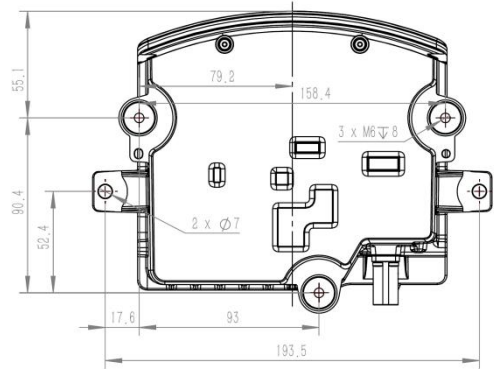
Specifications

Product Performance			
Performance parameters	Detection range	300m @10% reflectivity ^①	
	Minimum range	≤1.2m	
	FoV (H × V)	ROI Region	Non-ROI Region
		120°×8.6°	120°×28°
	Resolution (H × V)	0.1°×0.22°	0.2°×0.22°
	Point cloud data-rate	798Kpts/s (without ROI) 1.02Mpts/s (with ROI)	
Precision ^②	3cm @1 σ		
Frame rate	10Hz		
Echo mode	Single & Dual Echo		
Number of equivalent lines	128		
Laser Parameters			
Laser wavelength	905nm		
Laser safety	Class 1 Eye-safe [IEC60825 - 1:2014]		
Data Output			
Data interface	1000Base-TX 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 (W×D×H)	206.5x 156.1x 61.4mm		
Weight	1.2Kg		
Device interface	Power supply: M12 Acode 4PIN Data interface: M12 Xcode 8PIN		
Protection level	IP67 & IP6K9K		

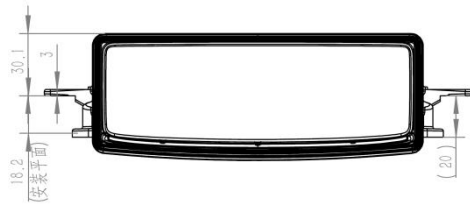
Dimensions (unit: mm)



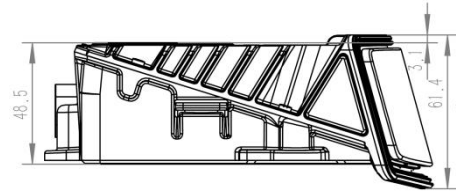
Top view



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 precision 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.

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