

Benewake AD2-X3

— New Generation Automotive Grade LiDAR

Datasheet



The AD2-X3 independently developed by Benewake is a high-performance automotive grade 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-X3 support continuous upgrading and iteration of product performance, better meeting the needs of enhanced scene perception and other applications.

AD2-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, and water 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

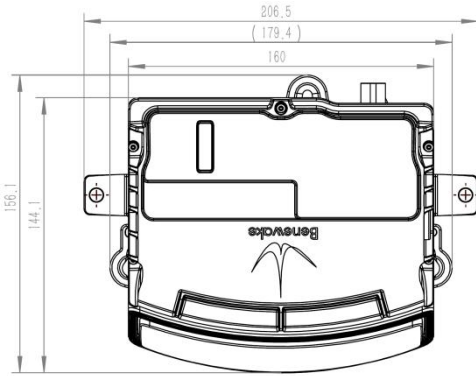


Terminal delivery

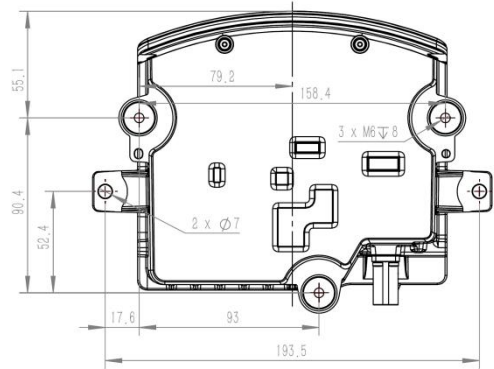
Specifications^①

Product Performance				
Performance parameters	Detection range	200m @10% reflectivity ^②		
	Minimum range	≤0.5m		
	FoV (H x V)	ROI Region	Non-ROI Region	
		120°×8°	120°×25.6°	
	Resolution (H x 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 ^③	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/TCP			
Supported platforms	Windows、Linux (Ubuntu) & ROS drive			
Time synchronization	gPTP 802.1AS			
Mechanical/Electrical				
Average power consumption	≤15W			
Operating voltage	9~32V			
Operating temperature	-40℃ ~ +85℃			
Storage temperature	-40℃ ~ +105℃			
Dimensions (LxWxH)	49 x 160 x 114 mm			
Weight	1.2Kg			
Device interface	Tyco 2446023-1			
Protection level	IP67 & IP6K9K			

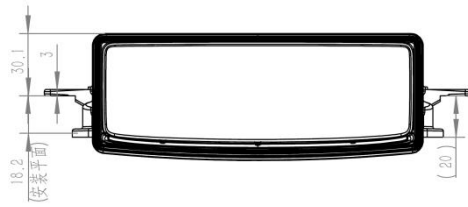
Dimensions (unit: mm)



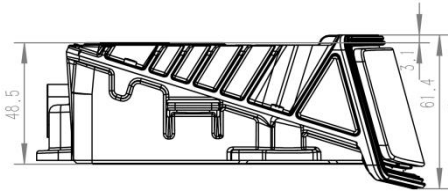
Top view



Bottom view



Front view



Side view

Notes to the specifications:

- ① The above specification parameters are mainly related to SOP. The specifications of the initial samples, prototypes, or pre-production versions of the product may differ from the specifications in this specification. If you would like to know more information, please contact Benewake engineer.
- ② The detection range is based on outdoor 100Klux ambient light condition, and any changes in environmental conditions may cause changes in the measurement results.
- ③ In the field of view angle description, the center of the field of view is used as the reference, with negative values representing the angle downwards and positive values representing the angle upwards.

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