

Leddar™ Pixell

Cocoon LiDAR for Autonomous Vehicles



Robotaxis



Autonomous Delivery Vehicles



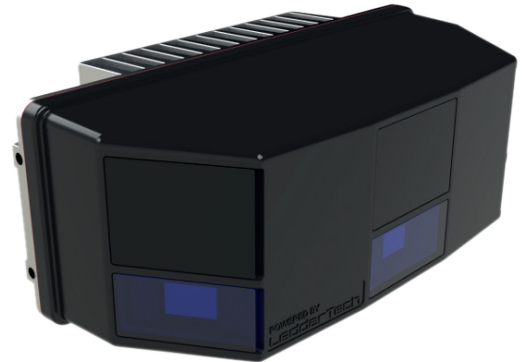
Commercial vehicles



Autonomous Shuttles



Industrial Vehicles



Overview

Introducing the Leddar Pixell, a 3D flash LiDAR with 180-degree field of view (FoV) specifically designed for ADAS and autonomous driving applications. Powered by the LCA2 LeddarEngine, the Leddar Pixell provides reliable detection of pedestrians, cyclists and other obstacles in the vehicle's surrounding and is optimized for use in perception platforms that are meant to enhance detection capabilities of vulnerable road users (VRU). The robust, solid-state Pixell compensates for the limitations of mechanical scanning LiDARs used for geo-positioning which generate blind areas that can reach several meters. The Pixell enables a comprehensive detection cocoon that surrounds the vehicle to provide blind spot coverage without dead zone in the illuminated field of view.

3D Cocoon LiDAR Technology

Using the latest in 3D Flash LiDAR technology, the Pixell provides full-surface illumination over 100% of its field of view, for comprehensive proximity coverage with no deadzones. Thanks to the Pixell's 180° wide FoV, four sensors will cover the entire vehicle surroundings and provide redundancy coverage in its corners. Data provided by Leddar Pixell allow for object tracking and identification of possible collisions based on object position, velocity, and directionality, without overwhelming the vehicle's CPU with massive amounts of unnecessary data.

Superior Robustness and Reliability

Deployments of detection systems on road vehicles require highly durable technologies to ensure high MTBF and to minimize downtime and operational expenditures, all the while providing reliable and secure vehicle operations.

Based on a robust, 100% solid-state LiDAR design with no moving parts for superior reliability, the road-ready Leddar Pixell delivers superior lifespan which makes it ideally suited for autonomous vehicles deployments.

- 100% Solid State
- Vibration and Shock Resistant
- Wide Operating Temperature Range
- IP67 Enclosure
- Impact-Resistant Windows
- Automotive-Grade Connectors

LeddarEngine™ at the Core

The Pixell has been designed using the state-of-the-art LCA2 LeddarEngine, the powerful LiDAR core for automotive and mobility applications, leveraging LeddarTech's patented signal acquisition and processing and highly integrated LiDAR SoC.

Features

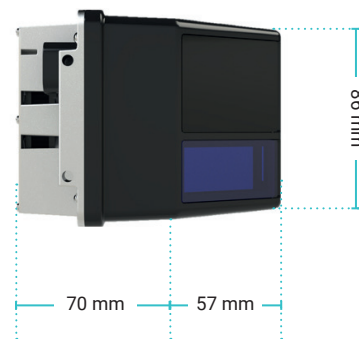
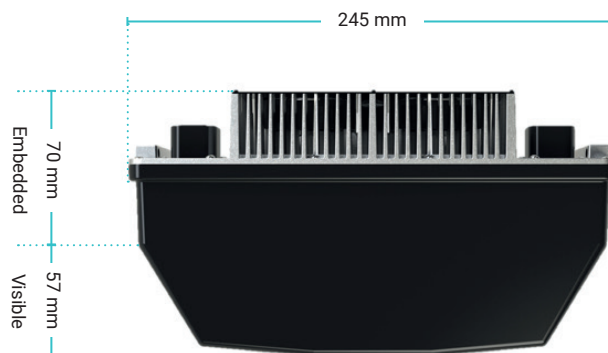
- 96 horizontal and 8 vertical segments providing 768 independent surfaces with simultaneous acquisitions
- 3D flash illumination technology providing 100% scene coverage
- Pedestrian detection range of up to 32 meters
- 100% solid state, vibration and shock resistant
- IP67 enclosure with impact-resistant windows and automotive-grade connectors
- Wide operating temperature range

Key Applications

- Proximity Detection
- Blind Spot Coverage
- Collision Avoidance
- Navigation

Specifications^{a,f}

Field of View (°)	Horizontal: 177,5 Vertical: 16,0
Surface size (°)	Horizontal: 1,9 Vertical: 2,0
Range (m)	Pedestrian ^b : 32 10% reflectivity ^c : 23 50% reflectivity ^c : 36 80% reflectivity ^c : 41
Accuracy (cm) ^d	±5
Operating Wavelength (nm)	905
Power Input (VDC)	11 to 52
Power Consumption (W) ^e	20
Communication Interface	Automotive Ethernet
Frame Rate (Hz)	20
Operating Temperature (°C)	-30 to +65
Weight (Kg)	2,25



Please refer to the instruction manual for more information on Leddar Pixell performances and limitations.

- a. Typical specifications.
 b. Euro NCAP Pedestrian, 50% reflectivity.
 c. Full pixel coverage.
 d. Non saturated signal, without crosstalk for non merged events.
 e. Nominal power consumption at 20°C.
 f. Environmental conditions, weather and reflectivity level of elements in the scene may affect sensor performances.

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Leddar™ technology is covered by one or more of the following U.S. patents: 7855376B2, 7554652, 8319949B2, 8310655, 8242476, 8908159, 8767215B2 or international equivalents. Other patents pending. Find the most recent version of our datasheet on our website. LeddarTech, the LeddarTech logo, Leddar, LeddarCore, LeddarOne, LeddarEngine, are trademarks or registered trademarks of LeddarTech Inc. Copyright © 2018 LeddarTech Inc. All rights reserved. The content of this spec sheet is subject to change without notice. 54C0025-1-EN / Ver. 20191209
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