North America LiDAR - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The North America LiDAR Market size is estimated at USD 0.98 billion in 2024, and is expected to reach USD 2.38 billion by 2029, growing at a CAGR of 19.5% during the forecast period (2024-2029).

Moreover, the growing trends in the automotive industry toward self-driving cars and electric vehicles are expected to be critical drivers for newer applications of LiDAR.

Key Highlights
-North America is one of the major developers of the technology, owing to increasing investments in accelerating innovations in the LiDAR landscape. These types of LiDAR systems are adopted by a growing number of industries, especially for applications in engineering, construction, the environment, and exploration, proving the effectiveness and, therefore, demand for this technology.
-Additionally, the growing demand for platooning in the North American region is also influencing the growth of this market. Following Georgia and Tennessee, Arkansas, North Carolina, South Carolina, and Texas have made commercial platooning legal, which enables freight companies like FedEx to conduct more fuel-efficient operations. As platooning needs technologies like LiDAR, it is therefore expected to contribute to the region's dominance in the automotive space for LiDAR technology.
-According to US Department of Transportation data, 51% of freight miles within the country are available in states that have approved commercial truck platooning. LiDAR technology is used in unmanned aircraft systems (UAS), and the US military and civil government are increasing their operations for UAS, which can increase the growth of this market.
-Moreover, ground-based LiDAR systems are witnessing growth, owing to factors such as low cost and their increasing applications in SUVs. The ground LiDARs provide an exceptional ability to produce 3D images of land in coastal and other areas, as well as ground movements such as landslides.

-However, the high costs associated with the deployment of this technology are restraining the growth of this market, and many manufacturers are looking for substitutes that could replace the functionality of LiDAR systems using RADAR and other optical sensors. Hence, these factors can restrain the growth of this market.
-Furthermore, the COVID-19 pandemic led to lockdowns all over the world, which disrupted the exports of automotive parts and caused large-scale manufacturing interruptions in the US.

North America LiDAR Market Trends

The Demand for Advanced Global Positioning System (GPS) will Drive the Growth of the Market

- The Global Positioning System (GPS) is a satellite-based radio navigation technology, and it is one of the essential components of a LiDAR system, which helps to determine an object's latitude, longitude, and height (altitude) in terms of 3 coordinates while mounted on an airplane or vehicle. One of the major advantages of GPS on the LiDAR system is the ability to remotely map dangerous or inaccessible areas by suppressing the challenge from ground control points.
- Navigation-based GPS applications enable end-users to optimize their daily schedules by offering features such as shortest path selection, approximate time to reach the destination, presence of traffic, and roadblocks along the way, among others. Moreover, owing to the technological advancements and capabilities of mobile devices, there is fast growth in geospatial computing in the automotive sector, which requires GPS data.
- Additionally, the growing demand for sophisticated sensor systems (satellite systems, GNSS/GPS) and the portable nature of the devices that can capture geospatial data and process it are also influencing the growth of the market. However, the creation of maps is one of the major applications of LiDAR systems, where GPS plays a prominent role in their high accuracy and resolution.
- Major vendors in this market are also using innovative strategies to gain some competitive advantage over their other competitors. For instance, in October 2022, Cepton Inc. announced a collaboration with LidarSwiss Solutions GmbH to deploy its lidar technology in a drone-based mapping and analytics solution for infrastructure management and engineering design applications.

Automotive Industry will Hold the Largest Market Share for this Market

- LiDAR has been recently incorporated into the development of a pre-scan system that assesses the surface of the road through a pulse laser to establish ideal suspension levels to ease the consumer's driving experience. Moreover, this provides the smoothest ride by preparing the tires to react to the imperfections in the road and alerting the driver to the presence of potholes and other obstacles.
- LiDAR is primarily used for the advanced driver assistance systems (ADAS) in automobiles for the convenience of the driver, with a human-machine interface for safe guidance and smooth operation. The autonomous nature of the vehicle requires considerably high accuracy and assistance for obstacle detection, avoidance, and safe navigation through the roadways.
- According to the National Highway Traffic Safety Administration, a division of the Department of Transportation, 42,915 people died in motor vehicle traffic crashes in 2021, a 10.5% increase from the 38,824 fatalities in 2020. Hence, the Federal Motor Carrier Safety Administration is committed to accelerating the deployment of ADAS technologies in four categories, which include active braking systems, active steering systems, active warning systems, and camera monitoring systems. These types of government initiatives are expected to definitely support the growth of this market.
- Moreover, the growing demand for electric vehicles is also influencing the growth of this market. In 2022, the US Department of Transportation's (USDOT) Federal Transit Administration announced over USD 1.6 billion in grant selections through the Low- or No-Emission (Low-No) Grant program. It will fund the deployment of transit buses and infrastructure that use enhanced propulsion

technologies, which are fueling the growth of this market.

North America LiDAR Industry Overview

The LiDAR market is fragmented due to the presence of many large and small vendors. The major vendors are investing in their research and development sections to gain a competitive advantage over their competitors. Some major vendors in this market are Sick Ag, Quanergy, Phantom Intelligence, Neptec Technology, etc.

In March 2023, RoboSense, a provider of smart LiDAR sensor systems, announced the launch of an automotive-grade solid-state LiDAR perception solution for L4 autonomous driving, the RS-Fusion-P6 (P6). The P6 provides precise and intelligent environmental perception capabilities, enabling autonomous vehicles to navigate through complex driving scenarios with ease, helping to reduce costs and increase efficiency, and promoting the rapid implementation of large-scale autonomous driving commercial operations.

In November 2022, Velodyne Lidar, Inc. announced a multi-year agreement to provide its lidar sensors to GreenValley International for handheld, mobile, and unmanned aerial vehicle (UAV) 3D mapping solutions, including in GPS-denied environments. Velodyne's power-efficient, versatile sensors allow GreenValley to incorporate their technology into a variety of form factors, from backpacks to drones and UAVs to handheld mobile devices that can be used in a wide range of indoor and outdoor environments, regardless of temperature, lighting, or precipitation.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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