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# Autonomous Emergency Braking System (AEB) Market ? Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Vehicle Type (Passenger Cars v/s Commercial Vehicles), By Technology (Camera-Based, Fusion-Based, Light Detection And Ranging (Lidar)-Based, Radio Detection And Ranging (Radar)), By Component (Actuators, Audible Buzzers, Controllers, Sensors, Visual Indicators), By Operating System (High Speed-Inter Urban AEB Systems, Low Speed-City AEB Systems, Pedestrian-VRU (Vulnerable Road Users) AEB Systems), By Application (Forward Emergency Braking, Reverse Emergency Braking, Multi-directional Braking), By Region & Competition, 2021-2031F

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## Abstracts

The Global Autonomous Emergency Braking System (AEB) Market is projected to experience substantial growth, increasing from USD 54.83 Billion in 2025 to USD 146.29 Billion by 2031, representing a CAGR of 17.77%. AEB technology employs sophisticated sensors to scan the vehicle's surroundings and automatically initiate braking when a collision appears imminent and the driver does not react. This market expansion is fundamentally underpinned by strict government safety regulations and the necessity of AEB systems for achieving high NCAP safety ratings, which serve as

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essential pillars for adoption. Furthermore, insurance incentives aimed at promoting collision avoidance features continue to strengthen demand. In 2024, the Alliance for Automotive Innovation forecasted that the prevalence of front automatic emergency braking would extend to 47% of registered vehicles by 2027.

However, a major obstacle hindering market growth is the significant cost associated with sensor integration and maintenance. Because key AEB components are often mounted in exposed exterior areas, they are prone to damage, leading to high replacement and recalibration costs even after minor accidents. This financial strain, combined with potential performance issues in adverse weather, creates a barrier to universal implementation, particularly within cost-sensitive vehicle segments.

**Market Driver**

The enforcement of rigorous government mandates requiring AEB installation acts as the primary catalyst for the Global Autonomous Emergency Braking System (AEB) Market. Regulatory authorities are moving from voluntary safety recommendations to compulsory standards to guarantee baseline safety levels across all vehicle categories. For instance, the United States has established decisive rules compelling the inclusion of this technology in new passenger cars. In April 2024, the National Highway Traffic Safety Administration (NHTSA) stated in its 'NHTSA Finalizes Key Safety Rule' press release that the new automatic emergency braking standard is expected to save at least 360 lives annually once fully implemented. This legislative drive forces automakers to standardize sensor hardware, ensuring steady revenue for suppliers and accelerating market penetration.

Concurrently, the increasing frequency of global road accidents and pedestrian fatalities is urging the automotive industry to prioritize active collision avoidance capabilities. As urbanization leads to denser environments, dangerous interactions between vehicles and vulnerable road users have intensified, necessitating automated intervention. The Governors Highway Safety Association reported in 'Pedestrian Traffic Fatalities by State' in February 2024 that pedestrian deaths have surged by 77% since 2010, underscoring a safety crisis that manual driving alone cannot resolve. While this reality fuels demand, system effectiveness remains a key area for improvement; the American Automobile Association (AAA) noted in 2024 that reverse AEB systems engaged in 65% of test scenarios, indicating that continued innovation in sensor reliability is crucial to fully mitigate accident risks.

**Market Challenge**

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The significant financial burden related to maintaining, repairing, and recalibrating Autonomous Emergency Braking (AEB) systems presents a major restraint on market growth. Since critical hardware such as cameras and radar is often installed in vulnerable locations like windshields and front bumpers, these components are highly susceptible to damage during even minor traffic incidents. Consequently, vehicle owners face disproportionately expensive repair bills for low-speed collisions that would typically involve only minor bodywork, raising the total cost of ownership and creating a barrier for price-sensitive consumers and fleet operators.

Recent industry data on repair costs highlights this economic pressure. The American Automobile Association reported in 2023 that the average cost to replace components linked to driver assistance systems after a minor front-end collision was approximately $1,540. These elevated expenses complicate the value proposition for economy vehicles, a segment where profit margins are slim and buyers are sensitive to both initial and long-term costs. Furthermore, the need for specialized facilities to conduct precise sensor recalibration increases operational burdens, thereby restricting market reach in regions lacking advanced automotive service infrastructure.

**Market Trends**

The market is being transformed by the adoption of deep learning algorithms for improved object classification, which allows single-sensor solutions to meet strict safety standards. Unlike traditional rule-based programming, advanced neural networks enable vision-based AEB systems to identify complex situations, such as pedestrians in low-contrast environments, without always requiring expensive radar or LiDAR hardware. This software-centric approach is gaining commercial traction because it achieves regulatory compliance through extensive real-world data training rather than hardware proliferation. For example, an October 2025 article by SAE International titled 'Mobileye ready to meet FMVSS 127 with vision-only system' noted that Mobileye's AI-driven AEB technology was validated over roughly 200,000 driving hours covering 11 million kilometers to demonstrate adherence to tighter regulations.

Conversely, the premium vehicle segment is seeing accelerated deployment of solid-state LiDAR and 4D imaging radar sensors to provide physical redundancy and enhanced long-range detection. Manufacturers are increasingly integrating these high-fidelity sensors to overcome camera limitations in adverse weather and to facilitate higher levels of autonomy where exact depth precision is critical. This hardware expansion is fueled by the arrival of cost-effective solid-state architectures that are now

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reaching mass production. According to Luminar Technologies' 'Q4 2024 Business Update' from March 2025, the company expects its LiDAR shipments to at least triple in 2025 as integration widens across consumer models like the Volvo EX90.

**Key Market Players**

Robert Bosch GmbH

Continental AG

ZF Friedrichshafen AG

DENSO Corporation

Hyundai Mobis Co., Ltd

Aptiv PLC

Autoliv Inc.

Valeo SA

Magna International Inc.

Mobileye Global Inc.

**Report Scope**

In this report, the Global Autonomous Emergency Braking System (AEB) Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Autonomous Emergency Braking System (AEB) Market, By Vehicle Type

Passenger Cars v/s Commercial Vehicles

Autonomous Emergency Braking System (AEB) Market, By Technology

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Camera-Based

Fusion-Based

Light Detection And Ranging (Lidar)-Based

Radio Detection And Ranging (Radar)

Autonomous Emergency Braking System (AEB) Market, By Component

Actuators

Audible Buzzers

Controllers

Sensors

Visual Indicators

Autonomous Emergency Braking System (AEB) Market, By Operating System

High Speed-Inter Urban AEB Systems

Low Speed-City AEB Systems

Pedestrian-VRU (Vulnerable Road Users) AEB Systems

Autonomous Emergency Braking System (AEB) Market, By Application

Forward Emergency Braking

Reverse Emergency Braking

Multi-directional Braking

Autonomous Emergency Braking System (AEB) Market, By Region

North America

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United States

Canada

Mexico

Europe

France

United Kingdom

Italy

Germany

Spain

Asia Pacific

China

India

Japan

Australia

South Korea

South America

Brazil

Argentina

Colombia

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Middle East & Africa

South Africa

Saudi Arabia

UAE

**Competitive Landscape**

Company Profiles: Detailed analysis of the major companies present in the Global Autonomous Emergency Braking System (AEB) Market.

**Available Customizations:**

Global Autonomous Emergency Braking System (AEB) Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

**Company Information**

Detailed analysis and profiling of additional market players (up to five).

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