+357 96 030922
info@marketpublishers.com

Global 3D Sensors Market - Types, Technologies and Applications

https://marketpublishers.com/r/GCEB37312B91EN.html
Date: January 2025
Pages: 370
Price: US$ 4,500.00 (Single User License)
ID: GCEB37312B91EN

Abstracts

3D Sensors Market Size, Trends and Outlook

3D sensors are advanced devices capable of capturing spatial data, including depth, distance, and shape, by using techniques such as time-of-flight, structured light, or stereoscopic vision. These sensors play a vital role in various industries due to their ability to create accurate three-dimensional representations of environments and objects. In manufacturing and robotics, they enhance automation by enabling precise object detection and manipulation. In healthcare, 3D sensors are used in medical imaging and prosthetics design, improving diagnosis and patient care. The automotive industry employs them for advanced driver-assistance systems (ADAS) to enhance safety and autonomous driving capabilities. Additionally, in retail and entertainment, 3D sensors enable immersive experiences through augmented reality (AR), virtual reality (VR), and personalized customer interactions. Their versatility and precision make them indispensable tools across sectors, driving innovation and efficiency.

The global 3D Sensors market size is estimated at US$6.4 billion in 2024 and is projected to reach US$21.7 billion by 2030 at a high CAGR of 22.5% over 2024-2030. Some of the primary factors driving the demand for 3D Sensors include growing use in virtual and augmented reality solutions, wider application in security & surveillance devices to enhance threat detection and continuing growth of industrial automation that needs accuracy in measurements & quality control as provided by 3D Sensors. Research & development efforts in this area have led to making sensors with improved accuracy and miniaturization in a cost-effective manner. In addition, several industries, such as consumer electronics, automotive, manufacturing and logistics are now heavily dependent on automation and robotics, which further require precise 3D sensing components for object detection and quality control.

+357 96 030922
info@marketpublishers.com

Although 3D Sensors are highly advanced devices with a range of applications, certain factors are instrumental in curbing their wider adoption. These include high initial deployment costs, possibility of limited integration options with other devices and prohibitive maintenance & replacement. Further, small- and medium-scale enterprises are usually wary to acquire and use advanced technological solutions due to budgetary limitations, for which it is necessary that 3D Sensors be made affordable and practicable for all types of operations. Moreover, technological backwardness about the significant role that 3D Sensors play in improving operations can also be a deterring factor that obstructs market growth.

3D Sensors Regional Market Analysis

On a regional basis and given the end-use sectors where 3D Sensors are used, there is a close race between North America, Europe and Asia-Pacific as to the leading global market. Here, Asia-Pacific is just a nose ahead in terms of both size and growth, since the region has a dominant presence in a few of the major areas where these devices are used, including automotive, consumer electronics and industrial applications. In other sectors, too, Asia-Pacific has been striving to achieve worldwide status, especially in aerospace & defense and healthcare, thereby stimulating demand for technologies, such as 3D Sensors. China has emerged as a global powerhouse in a number of fields, with India closely following in its footsteps. Japan and South Korea are also contributing to this success, making the overall region a center for manufacturing and distributing advanced technological solutions. The market for 3D Sensors in North America and Europe would also maintain a healthy rate of growth, owing to the fact that numerous industries making use of these devices are well-established there.

3D Sensors Market Analysis by Sensor Type

Among the various types of 3D Sensors used, the worldwide demand for Image Sensors is the largest and will also maintain the fastest growth, as they are adaptable across a wide variety of applications and sectors. These sensors are essential components to enable the capture of visual data, rendering them fundamental to 3D sensing technology in the acquisition of precise depth perception and spatial mapping. Image Sensors play a critical role in consumer electronics for applications, such as facial recognition and augmented reality (AR), other than for advancing the operational ability of cameras in smartphones, tablets and gaming consoles. The automotive industry is another area where Image Sensors are extensively employed for advanced driver assistance systems (ADAS) and autonomous vehicles. In industrial automation,

+357 96 030922
info@marketpublishers.com

these sensors find wide application in robotics, machine vision and quality control processes, all of which are contributing to demand for Image Sensors. Healthcare & Medical systems, such as imaging and surgical robotics, are incorporating these sensors for providing accurate results, which is also driving demand for the same.

3D Sensors Market Analysis by Technology

Structured Light Sensors lead the market for 3D Sensors by technology, since they provide the optimal precision in depth sensing, which is a vital aspect of 3D sensing, other than length and width sensing, the latter two of which are readily ascertained using other sensors. In stationary 3D scanners, the capturing unit is installed on a solid surface, although it is feasible to add an automated rotary turntable to the scanner that expedites the scanning process by eliminating the need to physically turn the object to scan it from all angles. A Structured Light 3D Scanner equipped with 3D Sensors can capture the overall three-dimensional aspects and angles for creating a perfect digital model of any object. These sensors are of particular importance in the fields of aerospace & defense, automotive, healthcare and industrial automation, all of which require components having highly accurate dimensions for efficient functioning. However, the market for Time-of-Flight (ToF) Sensors is slated to clock the fastest growth over the analysis period at the expense of Structured Light technology. In automobiles, imagers based on 3D time-of-flight (ToF) technology can provide accurate and robust depth sensing capabilities within, as well as beyond the vehicle. In-cabin sensing cameras using 3D ToF technology allow capturing and processing data that ensures high degree of passive safety in cases, such as driver monitoring, occupant detection and smart airbag systems.

3D Sensors Market Analysis by Connectivity

The global demand for 3D Sensors by connectivity is larger and also faster growing for the Wireless variety. These self-configured and infrastructure-free sensors can efficiently transmit data from environmental or physical elements, such as temperature, sound, vibration, pressure, motion or pollutants to a centralized receiver for analysis and further action. Networks employing wireless 3D sensors are widely used in the healthcare, military, environmental and industrial sectors, to name a few.

3D Sensors Market Analysis by End-Use Sector

The Consumer Electronics sector leads the global market for 3D Sensors, as they are essential components for enhancing user experience in devices such as smartphones,

+357 96 030922
info@marketpublishers.com

gaming consoles and augmented reality (AR) devices, as also for gesture recognition, facial recognition and creating immersive experiences. Smartphones use 3D Sensors in facial recognition systems and AR applications, with gaming consoles employing them for improving interactivity and realism through gesture recognition and depth sensing. 3D Sensors' use in AR devices involves obtaining accurate spatial rendering of AR objects. Fastest growth in demand for 3D Sensors, however, is expected from the Automotive sector. These devices form the basis of advanced driver-assistance systems (ADAS), autonomous driving technologies, adaptive cruise control, lane-keeping assistance and automated parking systems in ADAS. In autonomous driving, 3D Sensors are used for object detection, mapping and navigation, thereby ensuring that vehicles are driven safely with minimal or zero human intervention. Using these sensors in in-cabin monitoring ensures driver alertness and passenger safety by tracking movements and detecting potential hazards.

3D Sensors Market Report Scope

This global report on 3D Sensors analyzes the global and regional market based on sensor type, technology, connectivity and end-use sector for 2021-2030 period with forecasts from 2024 to 2030 in terms of value in US$. In addition to providing profiles of major companies operating in this space, the latest corporate and industrial developments have been covered to offer a clear panorama of how and where the market is progressing.

Key Metrics

Historical Period: 2021-2023

Base Year: 2024

Forecast Period: 2024-2030

Units: Value market in US$

Companies Mentioned: 30+

3D Sensors Market by Geographic Region

North America (The United States, Canada and Mexico)

+357 96 030922
info@marketpublishers.com

Europe (France, Germany, Italy, Russia, Spain, The United Kingdom and Rest of Europe)

Asia-Pacific (China, Japan, India, South Korea and Rest of Asia-Pacific)

South America (Argentina, Brazil and Rest of South America)

Middle East & Africa

3D Sensors Market by Sensor Type

Accelerometer Sensors

Acoustic Sensors

Image Sensors

Magnetometers

Position Sensors

Pressure Sensors

Proximity Sensors

Temperature Sensors

3D Sensors Market by Technology

Infrared

Stereoscopic Vision

Structured Light

Time-of-Flight (ToF)

+357 96 030922
info@marketpublishers.com

Ultrasound

Other Technologies (Incl. Capacitive, Electric Field, Hall, Laser, LiDAR & MEMS)

3D Sensors Market by Connectivity

Wired Network Connectivity

Wireless Network Connectivity

3D Sensors Market by End-Use Sector

Aerospace & Defense

Automotive

Consumer Electronics

Healthcare & Medical Devices

Industrial

Other End-Use Sectors (Primarily incl. Media & Entertainment and Security & Surveillance)

+357 96 030922
info@marketpublishers.com

Contents

PART A: GLOBAL MARKET PERSPECTIVE

1. Introduction
Sensor Type Outline
3D Sensors Defined
3D Sensors Market by Type
Accelerometer Sensors
Acoustic Sensors
Image Sensors
Magnetometers
Position Sensors
Pressure Sensors
Proximity Sensors
Temperature Sensors
3D Sensors Market by Technology
Infrared
Stereoscopic Vision
Structured Light
Time-of-Flight (ToF)
Ultrasound
Other Technologies (Incl. Capacitive, Electric Field, Hall, Laser, LiDAR & MEMS)
3D Sensors Market by Connectivity
Wired Network Connectivity
Wireless Network Connectivity
3D Sensors Market by End-Use Sector
Aerospace & Defense
Automotive
Consumer Electronics
Healthcare & Medical Devices
Industrial
Other End-Use Sectors (Primarily incl. Media & Entertainment and Security & Surveillance)
2. Key Market Trends
3. Key Global Players
ams-OSRAM AG
ASUSTeK Computer Inc.
Basler AG

+357 96 030922
info@marketpublishers.com

Cognex Corp
FARO Technologies, Inc.
Finisar Corp
IFM Electronic GmbH
Infineon Technologies AG
Intel Corp
Keyence Corp
Leuze Electronic GmbH + Co KG
LMI Tchnology, Inc
Lumentum Operations LLC
Melexis
Microchip Technology, Inc.
Micro-Epsilon
Microsoft Corp
Occipital, Inc.
OmniVision Technologies, Inc. (OVT)
Orbbec 3D Technology International, Inc.
Panasonic Corporation
Photoneo s. r. o.
pmdtechnologies AG
PrimeSense
Qualcomm Technologies, Inc.
Samsung Electronics Co Ltd
Sick AG
SmartRay GmbH
Sony Corp
Sony Depthsensing Solutions (Formerly SoftKinetic Systems SA)
STMicroelectronics NV
Teledyne DALSA, Inc.
Texas Instruments, Inc.
Velodyne Lidar, Inc.
XYZ Inteactive Technologies, Inc.
Zivid AS
4. Key Business & Product Trends
5. Global Market Overview
Global 3D Sensors Market Overview by Sensor Type
3D Sensors Type Market Overview by Global Region
Accelerometer Sensors
Acoustic Sensors

+357 96 030922
info@marketpublishers.com

Image Sensors
Magnetometers
Position Sensors
Pressure Sensors
Proximity Sensors
Temperature Sensors
Global 3D Sensors Market Overview by Technology
Infrared
Stereoscopic Vision
Structured Light
Time-of-Flight (ToF)
Ultrasound
Other Technologies (Incl. Capacitive, Electric Field, Hall, Laser, LiDAR & MEMS)
Global 3D Sensors Market Overview by End-Use Sector
Aerospace & Defense
Automotive
Consumer Electronics
Healthcare & Medical Devices
Industrial
Other End-Use Sectors (Primarily incl. Media & Entertainment and Security & Surveillance)

PART B: REGIONAL MARKET PERSPECTIVE

Global 3D Sensors Market Overview by Geographic Region
REGIONAL MARKET OVERVIEW
6. North America
North American 3D Sensors Market Overview by Geographic Region
North American 3D Sensors Market Overview by Sensor Type
North American 3D Sensors Market Overview by Technology
North American 3D Sensors Market Overview by Connectivity
North American 3D Sensors Market Overview by End-Use Sector
Country-wise Analysis of North American 3D Sensors Market
The United States
United States' 3D Sensors Market Overview by Sensor Type
United States' 3D Sensors Market Overview by Technology
United States' 3D Sensors Market Overview by Connectivity
United States' 3D Sensors Market Overview by End-Use Sector
Canada

+357 96 030922
info@marketpublishers.com

Canadian 3D Sensors Market Overview by Sensor Type
Canadian 3D Sensors Market Overview by Technology
Canadian 3D Sensors Market Overview by Connectivity
Canadian 3D Sensors Market Overview by End-Use Sector
Mexico
Mexican 3D Sensors Market Overview by Sensor Type
Mexican 3D Sensors Market Overview by Technology
Mexican 3D Sensors Market Overview by Connectivity
Mexican 3D Sensors Market Overview by End-Use Sector
7. Europe
European 3D Sensors Market Overview by Geographic Region
European 3D Sensors Market Overview by Sensor Type
European 3D Sensors Market Overview by Technology
European 3D Sensors Market Overview by Connectivity
European 3D Sensors Market Overview by End-Use Sector
Country-wise Analysis of European 3D Sensors Market
France
French 3D Sensors Market Overview by Sensor Type
French 3D Sensors Market Overview by Technology
French 3D Sensors Market Overview by Connectivity
French 3D Sensors Market Overview by End-Use Sector
Germany
German 3D Sensors Market Overview by Sensor Type
German 3D Sensors Market Overview by Technology
German 3D Sensors Market Overview by Connectivity
German 3D Sensors Market Overview by End-Use Sector
Italy
Italian 3D Sensors Market Overview by Sensor Type
Italian 3D Sensors Market Overview by Technology
Italian 3D Sensors Market Overview by Connectivity
Italian 3D Sensors Market Overview by End-Use Sector
Russia
Russian 3D Sensors Market Overview by Sensor Type
Russian 3D Sensors Market Overview by Technology
Russian 3D Sensors Market Overview by Connectivity
Russian 3D Sensors Market Overview by End-Use Sector
Spain
Spanish 3D Sensors Market Overview by Sensor Type
Spanish 3D Sensors Market Overview by Technology

+357 96 030922
info@marketpublishers.com

Spanish 3D Sensors Market Overview by Connectivity
Spanish 3D Sensors Market Overview by End-Use Sector
The United Kingdom
United Kingdom 3D Sensors Market Overview by Sensor Type
United Kingdom 3D Sensors Market Overview by Technology
United Kingdom 3D Sensors Market Overview by Connectivity
United Kingdom 3D Sensors Market Overview by End-Use Sector
Rest of Europe
Rest of Europe 3D Sensors Market Overview by Sensor Type
Rest of Europe 3D Sensors Market Overview by Technology
Rest of Europe 3D Sensors Market Overview by Connectivity
Rest of Europe 3D Sensors Market Overview by End-Use Sector
8. Asia-Pacific
Asia-Pacific 3D Sensors Market Overview by Geographic Region
Asia-Pacific 3D Sensors Market Overview by Sensor Type
Asia-Pacific 3D Sensors Market Overview by Technology
Asia-Pacific 3D Sensors Market Overview by Connectivity
Asia-Pacific 3D Sensors Market Overview by End-Use Sector
Country-wise Analysis of Asia-Pacific 3D Sensors Market
China
Chinese 3D Sensors Market Overview by Sensor Type
Chinese 3D Sensors Market Overview by Technology
Chinese 3D Sensors Market Overview by Connectivity
Chinese 3D Sensors Market Overview by End-Use Sector
India
Indian 3D Sensors Market Overview by Sensor Type
Indian 3D Sensors Market Overview by Technology
Indian 3D Sensors Market Overview by Connectivity
Indian 3D Sensors Market Overview by End-Use Sector
Japan
Japanese 3D Sensors Market Overview by Sensor Type
Japanese 3D Sensors Market Overview by Technology
Japanese 3D Sensors Market Overview by Connectivity
Japanese 3D Sensors Market Overview by End-Use Sector
South Korea
South Korean 3D Sensors Market Overview by Sensor Type
South Korean 3D Sensors Market Overview by Technology
South Korean 3D Sensors Market Overview by Connectivity
South Korean 3D Sensors Market Overview by End-Use Sector

+357 96 030922
info@marketpublishers.com

Rest of Asia-Pacific
Rest of Asia-Pacific 3D Sensors Market Overview by Sensor Type
Rest of Asia-Pacific 3D Sensors Market Overview by Technology
Rest of Asia-Pacific 3D Sensors Market Overview by Connectivity
Rest of Asia-Pacific 3D Sensors Market Overview by End-Use Sector
9. South America
South American 3D Sensors Market Overview by Geographic Region
South American 3D Sensors Market Overview by Sensor Type
South American 3D Sensors Market Overview by Technology
South American 3D Sensors Market Overview by Connectivity
South American 3D Sensors Market Overview by End-Use Sector
Country-wise Analysis of South American 3D Sensors Market
Argentina
Argentine 3D Sensors Market Overview by Sensor Type
Argentine 3D Sensors Market Overview by Technology
Argentine 3D Sensors Market Overview by Connectivity
Argentine 3D Sensors Market Overview by End-Use Sector
Brazil
Brazilian 3D Sensors Market Overview by Sensor Type
Brazilian 3D Sensors Market Overview by Technology
Brazilian 3D Sensors Market Overview by Connectivity
Brazilian 3D Sensors Market Overview by End-Use Sector
Rest of South America
Rest of South American 3D Sensors Market Overview by Sensor Type
Rest of South American 3D Sensors Market Overview by Technology
Rest of South American 3D Sensors Market Overview by Connectivity
Rest of South American 3D Sensors Market Overview by End-Use Sector
10. Middle East & Africa
Middle East & Africa 3D Sensors Market Overview by Sensor Type
Middle East & Africa 3D Sensors Market Overview by Technology
Middle East & Africa 3D Sensors Market Overview by Connectivity
Middle East & Africa 3D Sensors Market Overview by End-Use Sector

PART C: GUIDE TO THE INDUSTRY

PART D: ANNEXURE

1. RESEARCH METHODOLOGY
2. FEEDBACK

+357 96 030922
info@marketpublishers.com

I would like to order

Product name: Global 3D Sensors Market - Types, Technologies and Applications
Product link: https://marketpublishers.com/r/GCEB37312B91EN.html
Price: US$ 4,500.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:
info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/GCEB37312B91EN.html