

Global Dosimeters Market 2023

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Abstracts

Description

The Dosimeter Market is anticipated to witness substantial growth, with a projected increase from USD 3.09 billion in 2022 to USD 4.59 billion by 2029, reflecting a commendable compound annual growth rate (CAGR) of 5.6% during the period from 2023 to 2029. Dosimeters, scientific instruments utilized for measuring the energy emitted by ionizing radiation and estimating the dose received by the human body, find extensive application across various industries, including medicine and manufacturing.

In the manufacturing sector, dosimeters play a crucial role in monitoring radiation exposure over time, primarily due to the escalating utilization of radioactive sources and X-ray machines. Passive dosimeters, such as film badges and thermoluminescent dosimeters, are commonly employed for routine monitoring purposes. Additionally, government regulations pertaining to emissions control and labor safety serve as key drivers for the demand of dosimeters in the industrial domain.

However, the active dosimeter market faces certain challenges that may impede its growth trajectory. Factors such as high cost, susceptibility to electromagnetic fields, and mechanical instability pose potential limitations. Despite these challenges, the dosimeter market has witnessed a surge in demand during the COVID-19 pandemic, particularly in disinfection settings utilizing UV light. Dosimeters play a critical role in measuring UV exposure and ensuring the safety of workers engaged in disinfection activities. Industries involved in pandemic response, such as personal protective equipment (PPE) manufacturing, may also require dosimeters to monitor radiation exposure.

Market Segmentation

The market is segmented based on various factors, including product type, application, end user, and geography.

Segmentation by Product Type

Electronic Personal Dosimeters (EPD)

Thermo Luminescent Dosimeters (TLD)

Optically Stimulated Luminescence Dosimeters (OSL)

Film Badge Dosimeters

Others

Segmentation by Application

Active

Passive

Segmentation by End User

Healthcare

Oil and Gas

Mining

Nuclear Plants

Industrial

Manufacturing

Others

Segmentation by Geography

North America

Europe

Asia Pacific

Rest of the World

Radioisotopes are widely used in science and industry for various applications, including monitoring fluid flow, filtration, leak detection, and assessing engine wear and process equipment corrosion. The IAEA estimates hundreds of thousands of operational gauges worldwide that measure radiation absorption in materials. Radioisotopes are also used in studying mixing and flow rates, inspecting metal parts, evaluating weld integrity, and conducting industrial gamma radiography. They serve as fuel in nuclear reactors, control sheet thickness in manufacturing, and contribute to luminescent paints and radio-luminant objects.

India's industrialization has increased radiation and harmful gas emissions, leading to the installation of dosimetry systems in industries and hospitals to prevent excessive radiation exposure. This is expected to drive the dosimeter market in India. The Asia-Pacific region is set to dominate the global dosimeter market due to the increasing adoption of radiation in various industries. The region will experience significant revenue growth due to the focus on nuclear power for electricity generation, meeting energy demands, and adhering to strict safety regulations in countries like China, Japan, and India. China, in particular, is expected to surpass the United States as the leading producer of nuclear energy by 2030, with the construction of more nuclear power plants. This growth will drive the demand for dosimeters in the region. China's emphasis on nuclear safety research and development, the establishment of a National Research and Development Center for Nuclear and Radiation Safety Regulation, and ongoing research on radiation environment monitoring and safety enhancement will further contribute to the demand for dosimeters in the country.

Competitive Landscape

The Dosimeter Market is moderately fragmented, with key players including Arrow-Tech Inc., ATOMTEX SPE, automess %li%Automation und Messtechnik GmbH, Fortive Corporation (Unfors RaySafe AB, Landauer Inc.), Freiberg Instruments GmbH, Fuji Electric Co., Ltd., GRAETZ Stahlungsme?technik GmbH, Johnson Matthey Plc (Tracerco Limited), Ludlum Measurements, Inc. (James Fisher Nuclear GmbH), Mirion

Technologies, Inc. (Canberra Industries Inc.), Mitech Co., Ltd., PCE Deutschland GmbH, Polimaster Inc., S.E. International, Inc., Thermo Fisher Scientific Inc., among others. These players are implementing strategies like partnerships and acquisitions to improve their product offerings and gain competitive advantages.

Recent Industry Developments

In September 2022, Hungary's ELKH Center for Energy Research (CER) Space Research Division developed a dosimeter to support the construction of the US lunar colony and study NASA's Artemis program. The dosimeter aims to provide crucial data on cosmic radiation for the advancement of human spacecraft and lunar outposts.

In April 2022, the European Space Agency (ESA) used radiation detectors from the DOSIS 3D experiment to monitor radiation exposure in the International Space Station and the Artemis I mission. The growing development of end-use industries globally is expected to drive significant demand for dosimeters.

Why Choose This Report

Gain a reliable outlook of the global dosimeters market forecasts from 2023 to 2029 across scenarios.

Identify growth segments for investment.

Stay ahead of competitors through company profiles and market data.

The market estimate for ease of analysis across scenarios in Excel format.

Strategy consulting and research support for three months.

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