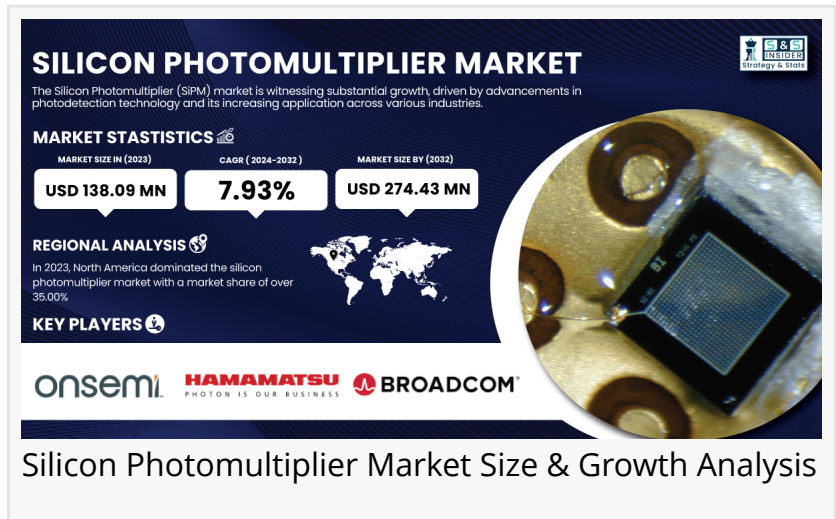


# Silicon Photomultiplier Market to Grow USD 274.43 million by 2032 | SNS INSIDER

*The Silicon Photomultiplier Market is expanding with demand for high-sensitivity, low-light detection in medical imaging, LiDAR, and nuclear detection.*

AUSTIN, TX, UNITED STATES, February 18, 2025 /EINPresswire.com/ -- Market Size & Industry Insights

As Per the SNS Insider, "The [Silicon Photomultiplier market](#) was valued at USD 138.09 million in 2023 and is expected to grow to USD 274.43 million by 2032, at a CAGR of 7.93% over the forecast period of 2024-2032."



Due to increasing demand for high-sensitivity photon detection in applications such as medical imaging, particle physics, and security systems, the Silicon Photomultiplier market is growing. Compared to traditional photomultiplier tubes, single-photon avalanche photodiodes (SiPMs) have small sizes and low voltage, as well as high photon detection efficiency. Their robustness against harsh conditions and room temperature operation further improves the utilization of organic radical batteries.

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SWOT Analysis of Key Players as follows:

- ON Semiconductor
- Hamamatsu Photonics
- KETEK
- Cremat
- Philips
- TE connectivity
- Broadcom
- First Sensor

- AdvanSiD
- Excelitas Technologies
- Radiation Monitoring Devices

#### Key Market Segmentation:

**By Offering:** The Red, Green, Blue (RGB) Silicon Photomultiplier segment accounted for the largest market share in 2023 owing to the application of these semiconductors in several fields including medical imaging, industrial sensors, and security systems amongst others. These SiPMs have an excellent susceptibility to light corresponding with the visible spectrum making them an ideal candidate for systems in need of relatively accurate, high-sensitivity detection of photons over a range of wavelengths.

The Near Ultraviolet (NUV) Silicon Photomultipliers segment is projected to witness growth at a high rate during the forecast period from 2024 to 2032. Such a booming growth where advanced scientific research such as particle detection and astronomy is being propelled behind the growth. NUV SiPMs DOI are capable of light detection in the ultraviolet range, thus enabling new applications concerning bioimaging on a fluorescence basis, environmental monitoring, or chemical detection.

**By Type:** The digital Silicon Photomultiplier segment accounted for the largest share of the market in 2023, as it offers enhanced performance by offering accurate, high-resolution, detection of photons. Digital SiPMs provide advanced signal processing, lower noise, and increased dynamic range, which is ideal for medical imaging, particle physics, and security systems. Their high market share was due to their efficiency in delivering accurate real-time data.

The analog SiPM segment is projected to register the highest compound annual growth rate (CAGR) from 2024 and 2032. The high speed and efficiency of the analog SiPM enable attractive industrial and automotive applications, where cost and simplicity are required. The rising deployment of electronic devices and reduced form factor devices & parts are major factors boosting the market growth.

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**By Application:** BioPhotonics and Medical Imaging dominated in 2023. One reason is that Silicon Photomultipliers have made their way into medical devices (e.g., positron emission tomography (PET) scanner) needing high sensitivity and accuracy. Higher market share for imaging applications the light output from scintillators was lower than the detection limit of PMTs, and the low working field of SiPMs and their miniaturized designs were perfect to be used in imaging applications.

The Lidar and 3D Ranging is expected to witness the fastest CAGR between 2024 and 2032. This

growth is being driven by the greater uptake of LiDAR technology in autonomous vehicles, robotics, and environmental monitoring. With high sensitivity and fast response times, SiPMs are the perfect fit for the high-performance standards of LiDAR systems.

**By End Use:** The healthcare sector held the SiPM market share in 2023, owing to an increased need for improved medical imaging systems. For high sensitivity and high resolution enabling precise diagnostics, SiPMs (Silicon Photomultipliers) are needed, and in applications like positron emission tomography (PET) scanners, they are essential. They were further adopted in the healthcare sector because of their smallness in size, effortlessly low power requirement, and capability of functioning at room temperature.

The automotive segment is likely to witness the fastest growth during the forecast period between 2024 to 2032. The burgeoning adoption of LiDAR technology in autonomous vehicles for enhanced navigation and safety accounts for this growth. These advanced automotive applications require high sensitivity and fast response times, both of which are provided by SiPMs, and drive rapid expansion within this segment.

#### KEY MARKET SEGMENTS:

##### By Offering

Near Ultraviolet Silicon Photomultiplier

Red, Green, Blue (RGB) Silicon Photomultiplier

##### By Type

Analog Silicon Photomultiplier

Digital Silicon Photomultiplier

##### By Application

LiDAR And 3D Ranging

High Energy Physics

Flow Cytometry

BioPhotonics and Medical Imaging

Radiation Detection & Monitoring

##### By End User

Healthcare

Consumer Electronics and Telecommunications

Oil & Gas

Automotive

Aerospace

Others

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## North America Leads SiPM Market in 2023 with Asia Pacific Set for Fastest Growth

North America held the largest share of the Silicon Photomultiplier (SiPM) market in 2023, attributed to its well-developed advanced technology industries, especially in healthcare, and high-energy physics & medical imaging. In particular, the SiPM-based technology has been rapidly adopted in the U.S., resulting in the subsequent rising demand for high-resolution imaging systems and radiation detection equipment. Additional factors that helped propel the region to the largest market share were the existing and well-established infrastructure for research and development in aerospace and defense segments.

The Asia Pacific will be the fastest-growing CAGR during the forecast period from 2024 to 2032. This phenomenon is fueled by fast-paced technological development, especially in countries such as China, Japan, and South Korea. Increasing adoption of SiPMs across automotive, consumer electronics, and industrial sectors coupled with a growing number of research programs in particle physics and medical imaging is driving the growth of this region.

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