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Global 4G Image Intensifier Tube Market 2026 by Manufacturers, Regions, Type and Application, Forecast to 2032

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Abstracts

According to our (Global Info Research) latest study, the global 4G Image Intensifier Tube market size was valued at US$ 790 million in 2025 and is forecast to a readjusted size of US$ 1996 million by 2032 with a CAGR of 14.9% during review period.

4G image intensifier tube is a type of technology grade product of high-performance night vision image enhancement tube, mainly used to convert and amplify weak visible light and near-infrared light at night into observable images. It is the core component of individual night vision devices, helmet night vision systems, weapon sights, vehicle night vision equipment, and border defense photoelectric detection systems. Its working principle is that weak light first enters the photocathode and is converted into electrons. The electrons are multiplied and amplified by the microchannel plate, and then bombard the fluorescent screen to form a visible image, which is then output by the eyepiece or imaging system. 4G image enhancement tubes typically emphasize wide spectral response, high signal-to-noise ratio, high resolution, small halo, fast automatic gating, and strong light protection capabilities. Their performance is higher than that of ordinary second-generation and some third-generation image enhancement tubes, and they can maintain clear image quality in low light, strong weak light switching, complex backgrounds, and rapidly moving scenes. Its main costs are concentrated in the areas of photocathode, microchannel board, vacuum packaging, high-voltage power supply, fluorescent screen, testing and screening, and yield loss. Downstream demand mainly comes from military and police equipment, night vision machines, border monitoring, unmanned reconnaissance, security patrols, and research low light imaging. In 2025, global 4G Image Intensifier Tube production reached approximately 298,762 Units, with an average global market price of around US$ 2,570 per unit.

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4G image intensifier tube belong to high-end optoelectronic devices with high barriers, small batches, and high unit prices. Although the market size is not large, their technological content and strategic value are relatively high. With the increasing demand for night combat, border patrol, counter-terrorism law enforcement, unmanned platform reconnaissance, and complex environmental security, high-performance night vision equipment is upgrading from a single observation function to high-definition, lightweight, low-power, wide spectrum, and digital fusion. This will continue to drive the growth of demand for 4G image enhancement tubes and high-performance chips of the same level. From the supply side, this field is limited by the preparation of photocathodes, microchannel plate consistency, vacuum packaging yield, FOM value screening, and military certification system. The number of enterprises that can stably supply in bulk worldwide is relatively small, the market concentration is high, and the price is not easy to quickly decline. In the medium to long term, pure digital low light sensors, thermal imaging, and multispectral fusion systems will exert some substitution pressure on traditional image enhancement tubes. However, high-performance image enhancement tubes still have significant advantages in real-time performance, low latency, low power consumption, passive imaging, and individual wearing experience. Therefore, 4G image enhancement tubes are more likely to be integrated with digital night vision, thermal imaging, and augmented reality display modules in the future, rather than being completely replaced by a single technology. The market opportunities mainly focus on high FOM value products, lightweight 16mm tubes, automatic door control tubes, low halo tubes, and overall system upgrades.

This report is a detailed and comprehensive analysis for global 4G Image Intensifier Tube market. Both quantitative and qualitative analyses are presented by manufacturers, by region & country, by Type and by Application. As the market is constantly changing, this report explores the competition, supply and demand trends, as well as key factors that contribute to its changing demands across many markets. Company profiles and product examples of selected competitors, along with market share estimates of some of the selected leaders for the year 2025, are provided.

Key Features:

Global 4G Image Intensifier Tube market size and forecasts, in consumption value ($ Million), sales quantity (Units), and average selling prices (US$/Unit), 2021-2032

Global 4G Image Intensifier Tube market size and forecasts by region and country, in consumption value ($ Million), sales quantity (Units), and average selling prices (US$/Unit), 2021-2032

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Global 4G Image Intensifier Tube market size and forecasts, by Type and by Application, in consumption value ($ Million), sales quantity (Units), and average selling prices (US$/Unit), 2021-2032

Global 4G Image Intensifier Tube market shares of main players, shipments in revenue ($ Million), sales quantity (Units), and ASP (US$/Unit), 2021-2026

The Primary Objectives in This Report Are:

To determine the size of the total market opportunity of global and key countries

To assess the growth potential for 4G Image Intensifier Tube

To forecast future growth in each product and end-use market

To assess competitive factors affecting the marketplace

This report profiles key players in the global 4G Image Intensifier Tube market based on the following parameters - company overview, sales quantity, revenue, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include L3Harris, Exosens(Photonis Defense), Elbit Systems, Northern Night Vision Technology Group, Katod, Harder Digital, 3E, etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Market Segmentation

4G Image Intensifier Tube market is split by Type and by Application. For the period 2021-2032, the growth among segments provides accurate calculations and forecasts for consumption value by Type, and by Application in terms of volume and value. This analysis can help you expand your business by targeting qualified niche markets.

Market segment by Type

16mm

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18mm

25mm

Other

Market segment by Fluorescent Screen Material

P45

P43

Market segment by Sales Model

Direct Selling

Distribution

Market segment by Application

Night Vision Equipment

Weapon Sights

Other

Major players covered

L3Harris

Exosens(Photonis Defense)

Elbit Systems

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Northern Night Vision Technology Group

Katod

Harder Digital

3E

Market segment by region, regional analysis covers

North America (United States, Canada, and Mexico)

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

Asia-Pacific (China, Japan, Korea, India, Southeast Asia, and Australia)

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

Middle East & Africa (Saudi Arabia, UAE, Egypt, South Africa, and Rest of Middle East & Africa)

The content of the study subjects, includes a total of 15 chapters:

Chapter 1, to describe 4G Image Intensifier Tube product scope, market overview, market estimation caveats and base year.

Chapter 2, to profile the top manufacturers of 4G Image Intensifier Tube, with price, sales quantity, revenue, and global market share of 4G Image Intensifier Tube from 2021 to 2026.

Chapter 3, the 4G Image Intensifier Tube competitive situation, sales quantity, revenue, and global market share of top manufacturers are analyzed emphatically by landscape contrast.

Chapter 4, the 4G Image Intensifier Tube breakdown data are shown at the regional level, to show the sales quantity, consumption value, and growth by regions, from 2021 to 2032.

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Chapter 5 and 6, to segment the sales by Type and by Application, with sales market share and growth rate by Type, by Application, from 2021 to 2032.

Chapter 7, 8, 9, 10 and 11, to break the sales data at the country level, with sales quantity, consumption value, and market share for key countries in the world, from 2021 to 2026.and 4G Image Intensifier Tube market forecast, by regions, by Type, and by Application, with sales and revenue, from 2027 to 2032.

Chapter 12, market dynamics, drivers, restraints, trends, and Porters Five Forces analysis.

Chapter 13, the key raw materials and key suppliers, and industry chain of 4G Image Intensifier Tube.

Chapter 14 and 15, to describe 4G Image Intensifier Tube sales channel, distributors, customers, research findings and conclusion.

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