

Land-based Military Electro-optical and Infrared Systems Market Size & Share Analysis - Growth Trends & Forecasts (2025 - 2030)
Industry: Aerospace & Defense
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Land-based Military Electro-optical And Infrared Systems Market Size and ShareMarket Overview

Study Period | 2019 - 2030 |
Forecast Data Period | 2025 - 2030 |
Market Size (2025) | USD 1.66 Billion |
Market Size (2030) | USD 1.93 Billion |
Growth Rate (2025 - 2030) | 3.05 % |
Fastest Growing Market | Asia Pacific |
Largest Market | North America |
Major Players*Disclaimer: Major Players sorted in no particular order

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Land-based Military Electro-optical And Infrared Systems Market Analysis by Mordor IntelligenceThe Land-based Military Electro-optical And Infrared Systems Market size is estimated at USD 1.66 billion in 2025, and is expected to reach USD 1.93 billion by 2030, at a CAGR of 3.05% during the forecast period (2025-2030).

The land-based military electro-optical and infrared systems industry is experiencing significant transformation driven by increasing global security concerns and technological advancements. Global military expenditure reached USD 2,240 billion in 2022, representing a 6% growth from 2021, reflecting the growing investment in advanced defense capabilities. Military forces worldwide are increasingly focusing on enhancing their combat effectiveness through advanced optronic systems that provide superior situational awareness and target acquisition capabilities. The integration of thermal imaging, panoramic vision, and enhanced driver vision capabilities has become essential for modern military operations, particularly in challenging environmental conditions.

The industry is witnessing a notable shift towards unmanned and autonomous systems integration with advanced EO/IR capabilities. Military organizations are increasingly investing in unmanned ground vehicles (UGVs) equipped with sophisticated electro-optical sensors for reconnaissance and surveillance missions. The development of next-generation combat vehicles with reduced crew requirements and enhanced autonomous capabilities is driving innovation in sensor technologies. These systems are being designed to operate effectively in diverse environmental conditions, providing military forces with improved tactical advantages while reducing risk to personnel.

Vehicle modernization programs are emerging as a significant trend across major military powers, with a focus on upgrading existing platforms with advanced EO/IR systems. The US Army's ambitious modernization efforts include plans to procure over 49,000 vehicles of various configurations, all requiring advanced electro-optical and infrared systems for enhanced operational capabilities. Military forces are increasingly demanding integrated solutions that combine multiple sensor technologies, including thermal imagers, day/night cameras, and laser rangefinders, to provide comprehensive battlefield awareness and targeting capabilities.

Recent technological developments have focused on improving the integration and effectiveness of EO/IR systems in military platforms. Advanced sensor suites are

being developed with enhanced capabilities in target detection, recognition, and identification across varying environmental conditions. The industry is witnessing increased emphasis on developing systems with improved size, weight, and power (SWaP) characteristics, while maintaining or enhancing performance capabilities. These advancements are enabling military forces to operate more effectively in complex battlefield environments, with improved ability to detect, track, and engage threats under all weather conditions and lighting scenarios.

Global Land-based Military Electro-optical And Infrared Systems Market Trends and Insights
Rising Defense ExpendituresThe profound changes in the international strategic landscape have led to significant increases in global military spending, driven by growing hegemonism, unilateralism, and power politics that have fueled several ongoing global conflicts. The configuration of the international security system has been undermined by these factors, compelling nations to enhance their military capabilities and ISR systems. Uncertainties in territorial rights between many countries, like the Saudi-Iran tensions in the Middle East, are among the major causes disturbing the geopolitical climate, leading governments to increase military spending to improve their security situation.

Military powerhouses have been focusing intensively on augmenting their military firepower and ISR capabilities through increased defense budgets. According to the Stockholm International Peace Research Institute (SIPRI), the United States, China, India, Russia, and Saudi Arabia had the highest military expenditures globally, accounting for 62% of the global expenditure. This increased spending has directly translated into procurement programs aimed at enhancing the situational awareness of armed forces, particularly in the domain of military surveillance systems and military targeting systems for land-based platforms.

Understand The Key Trends Shaping This Market
Download PDFMilitary Modernization and Advanced Technology IntegrationAdvanced optronic systems have become essential components in enhancing armored vehicles' combat effectiveness, with military forces worldwide focusing on thermal imaging, 360-degree vision, and enhanced night vision capabilities for both land vehicles and dismounted infantrymen. The integration of cutting-edge technologies is evidenced by recent major contracts, such as the September 2023 US Army award to Kongsberg worth USD 94 million for 409 Commonly Remotely Operated Weapon Stations (CROWS), featuring advanced day cameras, thermal imagers, and laser range finders with fire-on-the-move capabilities. Similarly, in July 2023, the US Army awarded a USD 117.5 million contract to RTX Corporation for 3rd Generation Forward Looking Infrared (3GEN FLIR) B-Kit sensors, demonstrating the military's commitment to advancing their optical capabilities.

The modernization of Remote Weapon Systems (RWS) has seen significant technological advancement with the incorporation of sophisticated features like automatic target tracking, laser range finder for accurate ballistics, last-round warning, and manual backup capabilities. These developments are complemented by the integration of advanced vehicle protection systems, where manufacturers are developing sensors that provide expanded visibility, enhanced situational awareness, and improved threat warning capabilities to military armored vehicles and crews. The trend is further exemplified by the US Army's initiative to procure Microsoft's militarized HoloLens 2 augmented reality system, announced in March 2022, showcasing the military's commitment to incorporating cutting-edge visualization technologies for enhanced combat effectiveness, including military imaging systems and military night vision systems.

Segment Analysis: Type
Vehicle Mounted Segment in Land-based Military EO/IR Systems MarketThe vehicle-mounted segment dominates the land-based military electro-optical and infrared systems market, accounting for approximately 86% of the total

1 market share in 2024. This segment's prominence is driven by the increasing integration of advanced optronic systems to enhance armored vehicles' combat effectiveness. The segment encompasses various technologies, including thermal imaging, 360-degree vision capabilities, and enhanced military night vision systems that are essential for modern military operations. Vehicle-mounted EO/IR systems have become crucial components in modern military vehicles, providing expanded visibility, situational awareness, and threat warning capabilities to military armored vehicles and crews. These systems typically include high-definition uncooled cameras, extended-view multifunction capabilities, and sophisticated sensor suites that can operate effectively in adverse weather conditions, both during day and night operations. The integration of these systems with remote weapon stations (RWS) and other vehicle defense systems has further solidified their importance in modern military operations.

Image © Mordor Intelligence. Reuse requires attribution under CC BY 4.0. Man Portable Segment in Land-based Military EO/IR Systems Market The man-portable segment of the land-based military electro-optical and infrared systems market represents a critical component of modern infantry operations. These systems are primarily utilized in perimeter security, surveillance, force protection, and short to mid-range threat detection, tracking, and targeting, as well as training and testing applications. The segment's growth is driven by technological advancements in reducing the size and weight of EO/IR equipment while maintaining high-performance capabilities. Modern man-portable systems are being developed with enhanced features such as adjustable diopters, manual gain adjustment, individually rotating monocular capabilities, and integrated infrared illuminators. The integration of multiple systems into single units, coupled with ongoing efforts to improve battery capacity and reduce overall system weight, continues to drive innovation in this segment. These developments are particularly focused on addressing the challenges of battery life, weight, and size of the equipment, which remain crucial factors in determining the effectiveness of man-portable military imaging systems in field operations.

Land-based Military Electro-optical And Infrared Systems Market Geography Segment Analysis Land-based Military Electro-optical and Infrared Systems Market in North America North America represents a dominant force in the land-based military electro-optical and infrared systems market, driven by substantial defense modernization programs and technological advancements. The region's market is characterized by significant investments in next-generation combat vehicles, soldier modernization programs, and enhanced surveillance capabilities. The United States and Canada are the key contributors to the regional market, with both countries focusing on upgrading their existing military platforms with advanced EO/IR systems. The presence of major defense contractors and continuous research and development activities further strengthens the region's market position.

Image © Mordor Intelligence. Reuse requires attribution under CC BY 4.0. Land-based Military Electro-optical and Infrared Systems Market in the United States The United States maintains its position as the largest market in North America, commanding approximately 86% of the regional market share in 2024. The country's dominance is attributed to its extensive military modernization initiatives and substantial defense budget allocations. The U.S. Army's focus on enhancing its combat vehicle capabilities through programs like the Next Generation Combat Vehicle (NGCV) and Optionally Manned Fighting Vehicle (OMFV) continues to drive market growth. The integration of advanced EO/IR systems in various platforms, from main battle tanks to infantry fighting vehicles, demonstrates the country's commitment to maintaining technological superiority in land warfare. The adoption of military surveillance systems and military targeting systems further underlines the strategic advancements in the U.S. defense sector.

Land-based Military Electro-optical and Infrared Systems Market Growth in the United States The United States is also experiencing the highest growth rate in Nor

th America, with a projected CAGR of approximately 3% during 2024-2029. This growth is fueled by ongoing military modernization programs and increasing adoption of advanced targeting and surveillance systems. The U.S. military's emphasis on enhancing night vision capabilities, thermal imaging systems, and integrated vehicle protection systems continues to drive market expansion. The development of multi-function EO/IR systems and their integration with artificial intelligence and machine learning technologies further supports this growth trajectory. The focus on military night vision systems and military imaging systems is pivotal in maintaining the technological edge.

Competitive LandscapeTop Companies in Land-based Military Electro-optical and Infrared Systems MarketThe market is characterized by established players such as BAE Systems, Elbit Systems, FLIR Systems, Israel Aerospace Industries, Rheinmetall AG, Saab AB, Thales Group, HENSOLDT AG, L3Harris Technologies, and Leonardo S.p.A. These companies demonstrate a strong commitment to innovation through the continuous development of advanced sensor technologies, enhanced imaging capabilities, and integrated solutions. The industry witnesses regular product launches focusing on size reduction, improved performance, and multi-functionality integration. Companies are actively pursuing strategic partnerships and collaborations to strengthen their technological capabilities and market presence. Geographic expansion, particularly in emerging markets, remains a key focus area, with companies establishing local manufacturing facilities and service centers to better serve regional defense requirements.

High Barriers Shape Competitive Market StructureThe market structure is dominated by large defense conglomerates with established relationships with military organizations and governments worldwide. These incumbents leverage their extensive R&D capabilities, manufacturing infrastructure, and long-standing industry expertise to maintain their market positions. The industry exhibits moderate to high consolidation, with major players controlling significant market share through their comprehensive product portfolios and global presence. Many of these companies operate as both prime contractors and subcontractors, enabling them to participate in various defense programs at different levels.

The competitive landscape is further shaped by ongoing merger and acquisition activities, as companies seek to expand their technological capabilities and market reach. Strategic acquisitions focus on gaining access to complementary technologies, entering new geographic markets, and strengthening existing product portfolios. Local players in various regions maintain their relevance through specialized offerings and strong domestic relationships, though they often collaborate with global leaders for technology access and market expansion.

Innovation and Integration Drive Future SuccessSuccess in this market increasingly depends on companies' ability to develop integrated solutions that combine multiple sensing technologies while reducing size, weight, and power consumption. Players must focus on developing products that offer enhanced battlefield situational awareness, improved target detection capabilities, and seamless integration with existing military platforms. The ability to provide comprehensive after-sales support, regular upgrades, and customization options has become crucial for maintaining long-term customer relationships and securing repeat orders. Companies need to invest in emerging technologies like artificial intelligence, sensor fusion, and advanced materials to stay competitive.

Market participants must navigate complex regulatory environments while maintaining strong relationships with defense procurement agencies. Companies that can demonstrate reliable supply chains, cybersecurity compliance, and domestic manufacturing capabilities will have competitive advantages. The increasing emphasis on indigenous defense capabilities in various countries creates opportunities for local partnerships and technology transfer agreements. Success also depends on the ability to anticipate and adapt to evolving military requirements, particularly

ally in areas like counter-drone capabilities, hypersonic threat detection, and network-centric warfare integration. Additionally, the development of military surveillance systems and military targeting systems is crucial for enhancing operational effectiveness and ensuring strategic superiority.

Land-based Military Electro-optical And Infrared Systems Industry Leaders* BAE Systems plc

* Leonardo S.p.A

* Teledyne Technologies Incorporated

* L3Harris Technologies, Inc.

* THALES

* *Disclaimer: Major Players sorted in no particular order

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Recent Industry DevelopmentsIn June 2023, the US Air Force Life Cycle Management Center and RTX Corporation successfully tested the Air Force's first palletized high-energy laser weapon that can protect against short-range aerial threats.

In June 2023, Leonardo DRS Inc, a subsidiary of Leonardo S.p.A. was awarded a contract worth USD 94 million to supply next-generation infrared weapon sights for US Army infantry snipers. Under the contract, Leonardo DRS is expected to develop the family of weapon sights – sniper, improved night/day observation device block III.

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Global Land-based Military Electro-optical And Infrared Systems Market Report Scope Electro-optical and infrared systems, also referred to as EO/IR systems, cover a wide range of distinct technologies, based on targets and their missions. These sensors include both visible spectrum and infrared sensors, due to which EO/IR systems provide total situational awareness during both day and night, even in low light conditions. Land-based military EO/IR sensors can be deployed in many ways. They are mounted on vehicles and can be man-portable.

The land-based military electro-optical and infrared systems market is segmented by type and geography. By type, the market is segmented into vehicle-mounted and man-portable. The report also covers the market sizes and forecasts for land-based military electro-optical and infrared systems in major countries across different regions. For each segment, the market size is provided in terms of value (USD).

Type	Vehicle-mounted
	Man-portable
Geography	North America United States
	Canada
	Europe United Kingdom
	France
	Germany
	Russia
	Rest of Europe
	Asia-Pacific China

- | India |
- | Japan |
- | South Korea |
- | Rest of Asia-Pacific |
- Latin America | Brazil |
- | Rest of Latin America |
- Middle-East and Africa | Saudi Arabia |
- | United Arab Emirates |
- | Israel |
- | Rest of Middle-East and Africa |
- Type | Vehicle-mounted |
- | Man-portable |
- |
- Geography | North America | United States |
- | Canada |
- |
- | Europe | United Kingdom |
- | France |
- | Germany |
- | Russia |
- | Rest of Europe |
- |
- | Asia-Pacific | China |
- | India |
- | Japan |
- | South Korea |
- | Rest of Asia-Pacific |
- |
- | Latin America | Brazil |
- | Rest of Latin America |
- |
- | Middle-East and Africa | Saudi Arabia |
- | United Arab Emirates |
- | Israel |
- | Rest of Middle-East and Africa |

Key Questions Answered in the ReportHow big is the Land-based Military Electro-optical And Infrared Systems Market? The Land-based Military Electro-optical And Infrared Systems Market size is expected to reach USD 1.66 billion in 2025 and grow at a CAGR of 3.05% to reach USD 1.93 billion by 2030.

What is the current Land-based Military Electro-optical And Infrared Systems Market size? In 2025, the Land-based Military Electro-optical And Infrared Systems Market size is expected to reach USD 1.66 billion.

Who are the key players in Land-based Military Electro-optical And Infrared Systems Market? BAE Systems plc, Leonardo S.p.A, Teledyne Technologies Incorporated, L3Harris Technologies, Inc. and THALES are the major companies operating in the Land-based Military Electro-optical And Infrared Systems Market.

Which is the fastest growing region in Land-based Military Electro-optical And Infrared Systems Market? Asia Pacific is estimated to grow at the highest CAGR over the forecast period (2025-2030).

Which region has the biggest share in Land-based Military Electro-optical And Infrared Systems Market? In 2025, the North America accounts for the largest market share in Land-based Military Electro-optical And Infrared Systems Market.

What years does this Land-based Military Electro-optical And Infrared Systems Market cover, and what was the market size in 2024? In 2024, the Land-based Military

ry Electro-optical And Infrared Systems Market size was estimated at USD 1.61 billion. The report covers the Land-based Military Electro-optical And Infrared Systems Market historical market size for years: 2019, 2020, 2021, 2022, 2023 and 2024. The report also forecasts the Land-based Military Electro-optical And Infrared Systems Market size for years: 2025, 2026, 2027, 2028, 2029 and 2030.

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