Military Electro-optical And Infrared Systems - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-06-01 | 130 pages | Mordor Intelligence

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Report description:

Military Electro-optical And Infrared Systems Market Analysis

The military electro-optical and infrared (EO/IR) systems market size reached USD 9.09 billion in 2025 and is forecasted to expand to USD 10.54 billion by 2030, reflecting a 3.00% CAGR. Stable top-line growth stems from sustained geopolitical tensions, NATO re-armament, and Indo-Pacific force modernization, all of which keep procurement pipelines for sensors, optics, processors, and integrated payloads active. Elevated defense outlays-USD 2.7 trillion in 2024-continue to pull demand toward advanced long-range targeting, counter-drone, and mast-mounted maritime solutions, while incremental improvements in size, weight, and power (SWaP) broaden adoption in soldier-wearable equipment. Competition remains moderate as entrenched primes defend their share through R&D and long-term contracts. Yet, start-ups employing artificial intelligence (AI) and quantum sensing capture niche programs, nudging the industry toward software-defined capabilities. Regionally, the United States, China, Japan, and key European members drive spending momentum, keeping North America in the lead while Asia-Pacific registers the highest growth.

Global Military Electro-optical And Infrared Systems Market Trends and Insights

Rising Demand for Long-Range Targeting Capabilities Driven by Strategic Rivalries

Strategic competition forces militaries to detect, track, and engage threats beyond visual range. China's radar program claims ballistic-missile detection at 4,500 km, spurring reciprocal Western sensor upgrades. The US Army awarded Raytheon USD 117.5 million for 3GEN FLIR sensors that pair high-definition, dual-band arrays with harsh-weather performance. France and the United

Kingdom now earmark deep-strike and long-range ISR funds, while Japan's USD 59 billion FY 2025 budget devotes USD 323.2 billion to orbital threat-tracking constellations. Boeing's IRST Block II on the F/A-18E/F allows passive cueing without radio-frequency emission, a decisive tactic inside contested electromagnetic spectra. Emergent beyond-visual-range missiles featuring AESA seekers raise the bar for precise EO/IR fire-control, compelling sustained investment.

Proliferation of Low-Cost UAS Driving Need for Counter-UAS EO/IR Payloads

Cheap drones now populate every battlespace tier, compelling rapid counter-UAS adoption. Teledyne FLIR's Cerberus XL unites radar, EO/IR, and effectors in a mobile mast to protect forward bases. Ophir's continuous-zoom IR lenses shorten the kill chain by sharpening drone ID at extended ranges. The US Navy warns that "Hellscape" swarms of one-way attack drones will saturate Indo-Pacific flashpoints, inflating demand for integrated EO/IR interceptors. Electro Optic Systems stresses directed-energy precision to neutralize swarms, underscoring how beam control and thermal sensors converge. Surface Optics Corporation's SBIR award to track hypersonic glide vehicles shows counter-air applications spreading beyond basic quadcopters.

Supply-Chain Bottlenecks in Cooled FPA Manufacturing

Cooled focal plane arrays rely on chalcogenide glass, vacuum dewars, and miniature cryocoolers that face intermittent shortages. Trade frictions on germanium exports from China intensified lead times, compelling vendors to explore substitutes such as LightPath's BDNL4 glass that mimics germanium's refractive index at a lower cost. European supplier Lynred broke ground on an EUR 85 million clean-room expansion in Grenoble to lift bolometer throughput 50% by 2025 and cushion allied programs from US International Traffic in Arms Regulations delays. Until capacity normalizes, militaries defer certain cooled sights in favor of uncooled microbolometers, dampening near-term revenue expansion.

Other drivers and restraints analyzed in the detailed report include:

Advancements in SWaP-Optimized Sensor Miniaturization Expanding Soldier-Wearable EO/IR Capabilities / Adoption of AI-Enabled ISR Processing for Real-Time Target Recognition / ITAR and Export-License Restrictions Hindering International Sales /

For complete list of drivers and restraints, kindly check the Table Of Contents.

Segment Analysis

The military EO/IR systems market remains heavily weighted toward aerial fleets, with the air-based segment holding a 54.30% revenue share in 2024. Fixed-wing fighters integrate infrared search-and-track pods that let pilots locate stealth aircraft without radar emissions, while modern rotorcraft adopt all-weather gimbals for rescue and overwater patrol. The United States Coast Guard ordered 125 ESS-M turrets for MH-60 and MH-65 helicopters, underscoring airborne persistence. Rapid proliferation of Group 2-5 drones adds incremental sensor demand as each platform carries EO/IR balls sized to its payload capacity. Across NATO air arms, cooled mid-wave arrays dominate new acquisitions because their higher sensitivity extends identification beyond 30 km under desert haze.

Though starting from a smaller base, land-based solutions are projected to grow at 5.49% CAGR. Here, soldier-portable sights and armored vehicle periscopes drive procurement. L3Harris's USD 263 million ENVG-B order illustrates how dismounted warfighters now expect fused thermal and image-intensified feeds. Heavy brigades retrofit third-generation FLIR modules so gunners can detect enemy armor past 6,000 m at night. Meanwhile, turreted counter-UAS sensors protect forward operating bases, replacing legacy radars with EO-verified tracks that limit fratricide. Sea-based demand remains steady as navies deploy shipboard panoramas such as SPEIR to protect surface combatants from sea-skimming missiles.

Sensors accounted for 32.76% of the military EO/IR systems market size in 2024, thanks to continuous innovation in focal plane architectures. Manufacturers now deploy strained-layer superlattice detectors operating at 150 K, trimming size and power budgets by 40% compared with legacy mercury-cadmium-telluride variants. Lens makers pursue metamaterial designs printed through additive processes, reducing mass while supporting on-the-fly field-of-view changes. Stabilization blocks incorporate MEMS gyros that cancel 4 g vibration, which is vital for small UAVs.

Processors are the fastest-growing component at 3.11% CAGR as AI refines onboard exploitation. Open standards such as SOSA promote card-level plug-and-play, letting services upgrade algorithms without re-certifying optics. HENSOLDT's software-defined front end demonstrates that margins increasingly migrate from glass to code. Human-machine interfaces also advance. Thermoteknix ARTIM overlays intuitive symbology onto night-vision images so troops can share bearings and target spots without radio chatter.

The Military Electro-Optical and Infrared (EO/IR) Systems Market Report is Segmented by Platform (Air-Based, Land-Based, and Sea-Based), Component (Human-Machine Interfaces, Stabilization Units, Control Systems, Sensors, Optics, and Processors), Imaging Technology (Cooled and Uncooled), End User (Army, Air Force, and Navy), and Geography (North America, Europe, and More). The Market Forecasts are Provided in Terms of Value (USD).

Geography Analysis

North America led the military EO/IR systems market with a 30.49% share in 2024, anchored by the United States' USD 920 billion defense budget. Washington prioritizes research, development, testing, and evaluation spending, funneling funds toward third-generation FLIR and AI-enabled target recognition. Canada supplements sensor demand through NORAD modernisation, adding a persistent EO/IR watch along Arctic approaches. Mexico invests selectively in border-security cameras and anti-cartel drone detection.

Europe recorded 17% year-over-year defense growth to USD 693 billion in 2024, the region's sharpest surge since the Cold War. Germany accelerates electronic-warfare sensor upgrades after committing to a special fund of EUR 100 billion. France directs spending toward long-range surveillance pods for Rafale fighters, while the United Kingdom trials cooled IRST on its Typhoon fleet. Eastern allies Poland and Romania channel EU funds into counter-UAS optics defending ammunition depots.

Asia-Pacific is the fastest-growing regional cluster at a 3.93% CAGR. China's modernization push aims to allocate USD 360 billion to sensors and effectors by 2030. Japan set its highest-ever budget at USD 59 billion, earmarking orbital EO/IR satellites for missile warning. Australia's 2024 Defence Strategy boosts naval SPEIR demand, while India scales handheld imagers for Himalayan surveillance. In parallel, Middle Eastern forces spend USD 243 billion, with Israel lifting budgets 65% to counter drone and rocket threats, creating near-term export openings.

List of Companies Covered in this Report:

BAE Systems plc / Elbit Systems Ltd. / Teledyne FLIR LLC / L3Harris Technologies Inc. / RTX Corporation / Lockheed Martin Corporation / Leonardo S.p.A / Saab AB / Rheinmetall AG / Israel Aerospace Industries Ltd. / HENSOLDT AG / Northrop Grumman Corporation / Safran SA / Thales Group / Ultra Electronics Holdings Limited / CACI International Inc. / Optikos Corporation / Navitar, Inc. / Anduril Industries, Inc. /

Additional Benefits:

 The market estimate (ME) sheet in Excel format /
3 months of analyst support /

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