

Thermal Imaging Systems - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-04-28 | 120 pages | Mordor Intelligence

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Report description:

The Thermal Imaging Systems Market is expected to register a CAGR of 7.78% during the forecast period.

Key Highlights

- Companies have also miniaturized IR and thermal imaging sensors due to technological advancements, making them highly efficient, thereby increasing their ease of use. Handheld IR and thermal imaging systems gain traction for their portability and find their applications in various industry verticals, such as hospitals, saving repair times and heating costs.
- Further, automotive applications are expected to gain traction in the next five years. The increasing use of thermal imaging systems such as thermal cameras in the automotive sector to reduce the risks in driving, especially at night, is a significant reason for this application's thermal imaging market growth.
- Moreover, recent developments in cooled mercury cadmium telluride (MCT or HgCdTe) infrared detector technology have made the development of high-performance infrared cameras possible for various demanding thermal imaging applications.
- The factors, such as rising demand for surveillance across various verticals, gradually decreasing thermal cameras cost, and rapid development of high-speed infrared cameras, lead to increased demand for IR cameras, consequently driving the market growth.
- However, inaccurate measurements and image color issues associated with the cameras are challenging market growth. The industries heavily relying on IR cameras are military, defense, and automotive.
- The COVID-19 Pandemic has increased demand for thermal imaging solutions across various industries, including healthcare, life science, transportation, and others. Several firms have reduced the transmission of illness at their locations. Authorities in nations such as China use thermal cameras and eyewear to identify pedestrians in high temperatures. Personnel addition, police are scanning and identifying persons with elevated body temperatures using AI-powered thermal smart helmets.

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Thermal Imaging Systems Market Trends

Applications in Military? to Drive the Market Growth

- Military and defense were the first applications of IR and thermal imaging systems. With the defense sector's rising investments in surveillance, IR, and thermal imaging systems, adoption is expected to increase further.
- In the military sector, governments worldwide invest in improving next-generation technology by providing military personnel with improved and accurate information. This has impacted the growth of especially short-wavelength IR cameras, as the adoption of IR thermography devices has increased in the defense sector.
- Globally, there is a growing trend of rising crimes and violence. This factor has raised the homeland security forces' budgets to procure advanced protective systems and gadgets. Modern warfare has become more asymmetric, with increasing non-lethal and lethal weapons.
- The key players in the market are constantly working on thermal imaging systems to introduce technological advancements. For instance, in June 2021, Raytheon Technologies Research Center is working with the Collins Aerospace and Pratt & Whitney businesses to break new ground on power and thermal management technologies that will enable future military aircraft while supporting updates to the present fleet.
- The combined number of military personnel among NATO member countries was approximately 3.3 million in 2021, increasing from 3.27 million the previous year. NATO nations' total defense spending in 2021 was approximately USD 1.17 trillion, the maximum amount NATO members have collectively spent on defense from 2014 to 2021.

North America to Hold the Significant Market Share

- North America is expected to hold a significant market share for the thermal imaging systems market during the forecast period due to the increasing adoption of infrared imaging products and services by organizations in the region for applications such as surveillance, threat detection, automotive, predictive maintenance, and others.
- Companies in the region are developing new products or solutions to leverage the growing opportunity. For instance, in February 2021, the FLIR Boson-based thermal camera premiered in Veoneer's fourth-generation Night Vision System as an option on the all-new Cadillac Escalade, identical to the FLIR Thermal Automotive Development Kit (ADK). The new thermal-vision system offers a broader field of view with four times the resolution compared to the previous generation, extending road coverage, improving situational awareness, and displaying a sharper image to the driver.
- According to a survey conducted by NATO, in 2021, the United States is estimated to spend 3.52% of its gross domestic product on defense expenditures. This makes them the country with the highest share of GDP spent on the defense budget in 2021. Such investments in the region drive the market.
- Most companies are keen on developing an advanced IR camera to provide detailed infrared information to gain a competitive edge over others. For instance, in April 2021, Seek Thermal launched Reveal FirePro X, the latest personal thermal imaging camera (TIC) for firefighters. The upgraded handheld thermal imaging camera provides a new charging port, making it even more durable and easier to access when needed.
- Autonomous cars have been witnessing significant adoption in Canada. In addition, companies such as Uber have also tested driverless technology in Phoenix, Arizona, and Pittsburgh, Pennsylvania.

Thermal Imaging Systems Industry Overview

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The thermal imaging system market is fragmented during the forecast period, with a considerable number of regional and global players. The major players in the market, such as Flir Systems Inc., Opgal Optronics Ltd, Fluke Corporation, Testo Inc., and Seek Thermal Inc., are trying to gain more market share with product innovations. In June 2022, Teledyne FLIR Systems Inc. announced the addition of an E52 camera to their Exx thermal Imaging device line, which now includes the E54, E96, E86, and E76 versions. The new E52 camera features professional-level thermal resolution to guarantee photos are simple to see and on-camera routing functionality to boost field survey efficiency.

Additional Benefits:

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

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