USD 22.2 Billion Directed Energy Weapons Market Value Cross by 2032 | Top Players - Northrop Grumman and BAE Systems

The Directed Energy Weapons market research is offered along with information related to key drivers, restraints, and opportunities.

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> *Allied Market Research*

WILMINGTON, DE, UNITED STATES, January 6, 2025 /EINPresswire.com/ -- According to a new report published by Allied Market Research, titled, “Directed Energy Weapons Market," The directed energy weapons market was valued at $4.9 billion in 2022, and is estimated to reach $22.2 billion by 2032, growing at a CAGR of 16.4% from 2023 to 2032.

A high-Energy Laser (HEL) technology in a weapon system essentially functions as a concentrated stream of optical radiation, serving the purpose of transmitting heat onto a target's surface. The concept involves a high-energy laser weapon that releases a substantial amount of thermal energy, effectively incapacitating a target without using traditional ammunition.

Currently, researchers and companies are advancing three distinct categories of high-energy lasers: chemical lasers, solid-state lasers, and free-electron lasers (FELs). The functionality of the system hinges on maintaining a clear and unobstructed line of sight to the intended target. This necessitates a favorable visibility condition for effective operation. The HEL system imparts thermal energy onto the target's surface over a substantial period. This avoids the transfer of momentum, shockwaves, high-velocity fragments, or immediate consequences.

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There is a rise in demand for high-energy lasers owing to their capability to serve as a cost-efficient and impactful addition to kinetic energy methods. These lasers exhibit the potential to offer heightened effectiveness in countering various threats, including rockets, artillery, mortars, RAM threats, unmanned aircraft systems, and cruise missiles. For instance, the HELIOS system

offered by Lockheed Martin, an aerospace and defense company, represents a High Energy Laser with Integrated Optical-Dazzler and Surveillance functionalities. This innovative system enhances the directed energy capabilities of the U.S. Navy by seamlessly integrating high-energy laser and optical dazzler technologies into both the ship and its combat system.

Moreover, companies develop and supply high-energy laser weapons to defense forces of various countries for aerial threats of various ranges including short and long distances. For instance, in June 2023, Raytheon Technologies, a prominent aerospace and defense company successfully delivered the fourth combat-ready high-energy laser weapon to the U.S. Air Force. This laser weapon is a palletized 10-kilowatt laser that can be transported and mounted in various locations, offering flexibility in deployment. Itis the first laser weapon of this kind built to U.S. military specifications, designed to address short-range aerial threats. Such developments highlight the advancement and practical application of high-energy laser technology and promote the adoption of high-energy laser weapon systems.

LAMEA is studied across Latin America, Middle East, and Africa. The increase in the demand for countering dangerous threats and modernizing armed forces with advanced capabilities is expected to drive the growth of the directed energy weapons market. The interest in high-energy lasers has grown due to the rise in asymmetric airborne threats such as rockets, mortars, and suicide drones. Numerous nations within the LAMEA region are proactively upgrading their military forces and making substantial investments in cutting-edge military capabilities.

Moreover, there is a rise in the trend of defense firms developing and showcasing innovative solutions that address the evolving security challenges. For instance, in February 2023, Lockheed Martin and Raytheon Technologies showcased their high-energy laser (HEL) technology as prominent offerings at the international arms expo IDEX 2023 held in Abu Dhabi. The goal of the companies is to attract potential foreign partners or buyers interested in advanced defense technologies. Such developments are expected to propel the growth of the market in the region during the forecast period.

High microwave weapon technology uses electromagnetic radiation in the microwave band to disrupt, degrade or destroy electronic systems or circuits of the enemy. High-power microwave weapons use higher energy for their operation and are used in a directional manner for their operation. A High-Power Microwave (HPM) directed-energy weapon employs electromagnetic waves with peak power spanning from 100 megawatts to 100 gigawatts, operating within a frequency range of 1 to 300 gigahertz. This technology is utilized to generate electromagnetic interference, strategically aimed at disrupting enemy electronic equipment. These weapons induce a disruptive voltage surge in the circuits of electronic and electrical devices, leading to the impairment of semiconductor components. These weapons possess the capability to engage underground targets that are typically impervious to conventional explosive-based damage.

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KEY FINDINGS OF THE STUDY

By technology, the high power microwave segment is anticipated to exhibit significant growth in the near future.
By platform, the airborne is anticipated to exhibit significant growth in the near future.
By product, the non-lethal segment is anticipated to exhibit significant growth in the near future.
By region, LAMEA is anticipated to register the highest CAGR during the forecast period.

Key players operating in the global directed energy weapons market include Northrop Grumman
BAE Systems
Rheinmetall AG
Thales Group
Leonardo S.p.A.
MBDA
Boeing
RTX
QinetiQ
Lockheed Martin Corporation

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