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Nota di contenuto	Intro; Optoelectronics for Low-Intensity Conflicts and Homeland Security; Contents; Preface; 1 Optoelectronics for Homeland Security: An Overview; 1.1 Low-Intensity Conflicts; 1.2 Technology for Homeland Security; 1.3 Less-Lethal Laser Weapons; 1.3.1 Laser Dazzler; 1.3.2 Applications of Laser Dazzlers; 1.3.3 Choice of Parameters; 1.3.4 Representative Laser Dazzler Devices; 1.4 Directed Energy Lasers; 1.4.1 Laser Countermeasures; 1.4.2 Lasers for Ordnance Disposal; 1.5 Protection of Critical Infrastructure; 1.6 Sighting, Observation, and Surveillance Devices; 1.7 Night Vision Technologies 1.7.1 Basic Approaches to Night Vision 1.7.2 Different Generations of Night Vision Technologies; 1.8 Detection and Identification of Explosives; 1.9 Detection and Identification of CBRN Agents; 1.9.1 Detection and Identification of Chemical Agents; 1.9.2 Detection and Identification of Biological Agents; 1.9.3 Radiation Detectors; 1.10 Detection of Concealed Weapons; Selected Bibliography; 2 Lasers and Optoelectronics Fundamentals; 2.1 Laser Basics; 2.1.1 Operational Principle; 2.2 Laser Characteristics; 2.2.1 Monochromaticity; 2.2.2 Coherence; 2.2.3 Directionality 2.3 Characteristic Parameters 2.3.1 Wavelength; 2.3.2 Power; 2.3.3 Pulse Energy; 2.3.4 Repetition Rate; 2.3.5 Pulse Width; 2.3.6 Rise and Fall Times; 2.3.7 Irradiance; 2.3.8 Radiance; 2.3.9 Beam Divergence; 2.3.10 Spot Size; 2.3.11 M2 Value; 2.3.12 Wall-Plug Efficiency; 2.4

Solid-State Lasers; 2.4.1 Operational Basics; 2.4.2 Types of Solid-State Lasers; 2.5 Fiber Lasers; 2.5.1 Basic Fiber Lasers; 2.5.2 Applications; 2.6 Gas Lasers; 2.6.1 Operational Basics; 2.6.2 Types and Applications; 2.7 Semiconductor Diode Lasers; 2.7.1 Operational Basics; 2.7.2 Types; 2.7.3 Applications; 2.8 Photosensors  
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## Sommario/riassunto

This authoritative new resource provides an overview of the deployment of various devices in systems in actual field conditions and efficacy established in warfare. The book covers laser and optronic technologies that have evolved over the years to build practical devices and systems for use in Homeland Security and low-intensity conflict scenarios. Readers will be able to assess combat and battle-worthiness of various available devices and systems. This book covers state-of-the-art and emerging trends in various optoelectronics technologies having applications in Homeland Security. It provides information on operational aspects, deployment scenarios, and actual usage of laser and optoelectronics based technologies for low intensity conflicts, offering insight into the utility of each technology/device for a given operational requirement. This book evaluates the merits of various laser and optoelectronic sensor based technologies intended for low intensity conflict operations, including counter-insurgency and anti-terrorist operations. It is a useful reference for those specializing in defense electronics and optronics and professionals in the defence industry involved in operation and maintenance of laser based security equipment. Packed with tables, photographs, and a comprehensive list of references in every chapter, this is the only book that covers all topics related to Laser and Optoelectronics devices intended for low intensity conflict operations in a single volume.

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