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Titolo	Hot Matter from High-Power Lasers [[electronic resource]] : Fundamentals and Phenomena // by Peter Mulser
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Descrizione fisica	1 online resource (XVI, 735 p. 169 illus., 33 illus. in color.)
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Disciplina	621.36
Soggetti	Lasers Photonics Plasma (Ionized gases) Quantum optics Optics, Lasers, Photonics, Optical Devices Plasma Physics Quantum Optics
Lingua di pubblicazione	Inglese
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Nota di contenuto	Hot Matter from High-Power Lasers -- Single particle motion -- Laser induced fluid dynamics -- Hot matter in thermal equilibrium -- Waves in the ideal plasma -- Unstable fluids and plasmas -- Transport in plasma -- Radiation from hot matter -- Applications of high power lasers.
Sommario/riassunto	This book offers an introduction to the booming field of high-power laser-matter interaction. It covers the heating of matter to super-high temperatures and pressures, novel schemes of fast particle acceleration, matter far from thermal equilibrium, stimulated radiation scattering, relativistic optics, strong field QED, as well as relevant applications, such as extreme states of matter, controlled fusion, and novel radiation sources. All models and methods considered are introduced as they arise and illustrated by relevant examples. Each chapter contains a selection of problems to test the reader's understanding, to apply the models under discussion to relevant situations and to discover their limits of validity. The carefully chosen

illustrations greatly facilitate the visualization of physical processes as well as presenting detailed numerical results. A list of useful formulas and tables are provided as a guide to quantifying results from experiments and numerical simulations. Each chapter ends with a description of the state of the art and the current research frontiers.
