

1. Record Nr.	UNINA9910634041503321
Titolo	High-Power Diode Lasers [[electronic resource]] : Fundamentals, Technology, Applications // edited by Roland Diehl
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2000
ISBN	3-540-47852-3
Edizione	[1st ed. 2000.]
Descrizione fisica	1 online resource (XIV, 416 p.)
Collana	Topics in Applied Physics, , 0303-4216 ; ; 78
Disciplina	621.36/6
Soggetti	Lasers Photonics Optics, Lasers, Photonics, Optical Devices
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"With 260 figures and 20 tables."
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	to Power Diode Lasers -- Dynamics of High-Power Diode Lasers -- Epitaxy of High-Power Diode Laser Structures -- GaAs Substrates for High-Power Diode Lasers -- High-Power Broad-Area Diode Lasers and Laser Bars -- Properties and Frequency Conversion of High-Brightness Diode-Laser Systems -- Tapered High-Power, High-Brightness Diode Lasers: Design and Performance -- Cooling and Packaging of High-Power Diode Lasers -- High-Power Diode Lasers for Direct Applications -- New Concepts for Diode-Pumped Solid-State Lasers.
Sommario/riassunto	Methods of design and fabrication of high-power diode lasers using proven semiconductor technologies are presented in a comprehensive fashion making this book an invaluable source of information for all scientists and engineers designing laser systems and applying the laser as a reliable and economic tool in a multitude of environments. It summarizes the prerequisites to set up state-of-the-art high-power diode-laser sources and how to use them in various applications. The available information, until now scattered worldwide in the scientific and technical literature, has been collected and compiled by the authors to give a complete overview of the principles of high-power diode lasers and design aspects for achieving high optical output power at high efficiency, low threshold current density, high reliability, and for reducing production costs. Special features are the development of

high-brightness diode lasers for application in direct materials processing, technologies of alloying single lasers and laser bars to sophisticated heat sinks and direct applications of high-power diode-laser systems with coherent and incoherent beam combining and also new concepts for diode-pumped solid-state lasers such as the fiber laser and the disc laser which become feasible through diode pumping.
