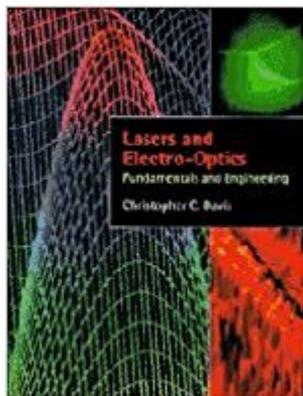


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# Lasers And Electro-optics: Fundamentals And Engineering



## Synopsis

This comprehensive book provides a detailed introduction to the basic physics and engineering aspects of lasers, as well as to the design and operational principles of a wide range of optical systems and electro-optic devices. Throughout, the author gives full details of important derivations and results, as well as many practical examples of the design, construction, and performance characteristics of different types of lasers and electro-optic devices. Covering a broad range of topics in modern optical physics and engineering, this book will be invaluable to those taking undergraduate courses in laser physics, optoelectronics, photonics, and optical engineering. It will also act as a useful reference for graduate students and researchers in these fields.

## Book Information

Paperback: 742 pages

Publisher: Cambridge University Press; 1 edition (May 31, 1996)

Language: English

ISBN-10: 0521484030

ISBN-13: 978-0521484039

Product Dimensions: 7.4 x 1.6 x 9.7 inches

Shipping Weight: 3.4 pounds (View shipping rates and policies)

Average Customer Review: 3.9 out of 5 stars 8 customer reviews

Best Sellers Rank: #735,572 in Books (See Top 100 in Books) #114 in [Books > Science & Math > Physics > Light](#) #267 in [Books > Science & Math > Physics > Optics](#) #293 in [Books > Engineering & Transportation > Engineering > Civil & Environmental > Acoustics](#)

## Customer Reviews

"...this book can be warmly recommended." Miles Padgett, Nature "...a comprehensive undergraduate text that provides a broad but detailed introduction to the basic underpinnings of lasers and modern optical systems." Physics Today

Full details of important derivations and results are included throughout this detailed introduction to the basic physics and engineering aspects of lasers, as well as to the design and operational principles of a wide range of optical systems and electro-optic devices.

This book is intended for a graduate-level course on lasers. While covering a number of subjects in depth, there are a large number of mistakes. There has been two reprintings with corrections, so I

would hate to have seen the first printing. There are many mistakes in the equations (usually easily ferreted out) as well as in the problems. The problems can be very frustrating as they are often as clear as mud. Overall however, the book does do a good job of covering most topics, but if you are looking for a better lasers book, I would go with Verdeyen's Laser Electronics (ISBN:013706666X) or Siegman's Lasers (ISBN: 0935702113)

This book is the kind of book that I have been looking for in the subject of laser. The book is very clear and well-written about the material. This book contains not many problems, but the problems in the book are mostly good problems. This book is appropriate for the advanced undergraduate and beginning graduate students in the electro-optics, photonics areas. The backgrounds necessary for this book are very flexible, since the author explain most of the idea behind the quantum mechanics that he used in the text. But the knowledge of electromagnetics and quantum mechanics would be helpful, not necessary.

Starting from Einstein's coefficients in Chapter 1 for stimulated emission this book tries to cover optical system, resonators, Solid-state Lasers, Gas Lasers and so on. Later Chapters deals with Coherence Theory, Laser Applications including holography and Laser Plasma generation. As a Laser Engineer I recommend this book for its efforts in trying to cover all the subfields in Lasers starting from the very beginning and taking complex issues one by one in a systematic way. Professor Davis surely deserves much kudos for writing materials in a easy and reader friendly way. Overall a very good intermediate level text on Laser!

This book is intended for first-year graduate and senior-level undergraduate students in physics and electrical engineering. It is clearly written with a good balance between depth and breadth, and will serve well either as a text or a reference. The first half covers laser fundamentals while the second half is more application-oriented. The math is at a level appropriate for the intended audience and is mostly fairly straightforward. At over 700 pages this book is a good value for the money.

You have no use for this book. It lacks consistent notation and clear organization. I strongly recommend you use Verdeyen's "Laser Electronics" or Siegman's "Lasers" instead.

This book consists primarily of a series of overwhelming and under-explained formulae and is clearly designed to be intimidating to all but the most nerdy of undergraduate students. Homework

problems are extremely complicated-little help comes directly from the chapter's content. This book seems to throw out conventions such as clearly identify the variables immediately following the VAST number of equations. The end result is page after page of garbled numbers and symbols which seek to intimidate, rather than enlighten. As a teaching tool, this text is of the worst I have ever seen. I used to have a genuine love of lasers., I was so passionate about them that I undertook much training and became the laser safety officer at my place of employment. However, since struggling with this textbook through only five chapters, I am thoroughly sick of the entire subject! Thanks, Davis!

I highly recommend this text. As a student under Prof Davis in 1995-96 I used his text extensively and found it to be extremely well designed and though in all regards.

As a graduate student majoring optics, this is the kind of book that I always want to keep near me. This book combines important topics of laser, electro-optics, and more in a well organized manner. So anyone involved in laser, eletro-optics, and photinics can refer to only one book for the basic principles. The math is not so difficult and every derivation is worked out quite thoroughly. There are many useful examples of latest systems, elements too. However, the early part covering laser is not so detailed as the other laser books, although the second half dealing with electro-optics is excellent in every aspect. I had a quite hard time with Yariv's book of optical electronics, but feel pretty comfortable with this book. Highly recommendable to anyone majoring the field of laser, photonics.

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