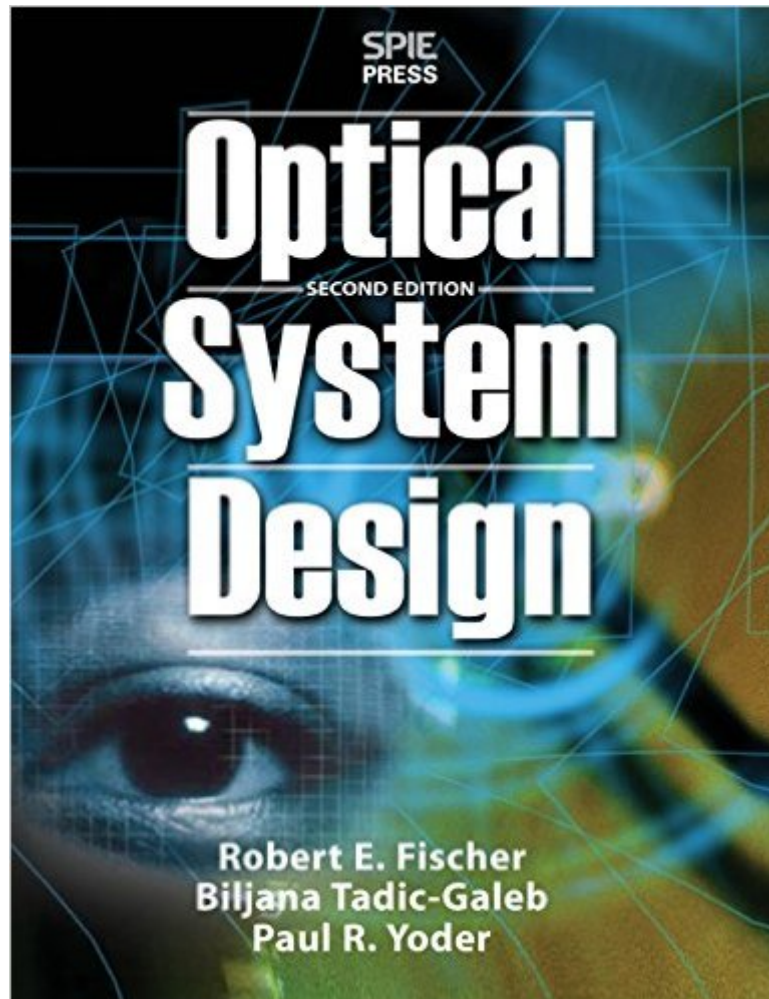


The book was found

Optical System Design, Second Edition



Synopsis

Learn advanced optical design techniques from the field's most respected guide Honed for more than 20 years in an SPIE professional course taught by renowned optical systems designer Robert E. Fischer, *Optical System Design, Second Edition* brings you the latest cutting-edge design techniques and more than 400 detailed diagrams that clearly illustrate every major procedure in optical design. This thoroughly updated resource helps you work better and faster with computer-aided optical design techniques, diffractive optics, and the latest applications, including digital imaging, telecommunications, and machine vision. No need for complex, unnecessary mathematical derivations-instead, you get hundreds of examples that break the techniques down into understandable steps. For twenty-first century optical design without the mystery, the authoritative *Optical Systems Design, Second Edition* features: Computer-aided design use explained through sample problems Case studies of third-millennium applications in digital imaging, sensors, lasers, machine vision, and more New chapters on optomechanical design, systems analysis, and stray-light suppression New chapter on polarization including lots of really useful information New and expanded chapter on diffractive optics Techniques for getting rid of geometrical aberrations Testing, tolerancing, and manufacturing guidance Intelligent use of aspheric surfaces in optical design Pointers on using off-the-shelf optics Basic optical principles and solutions for common and advanced design problems

Book Information

Hardcover: 809 pages

Publisher: McGraw-Hill Education; 2 edition (February 14, 2008)

Language: English

ISBN-10: 0071472487

ISBN-13: 978-0071472487

Product Dimensions: 7.7 x 1.8 x 9.4 inches

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

Average Customer Review: 4.1 out of 5 stars See all reviews (14 customer reviews)

Best Sellers Rank: #509,097 in Books (See Top 100 in Books) #31 in Books > Engineering & Transportation > Engineering > Electrical & Electronics > Electronics > Optoelectronics #163 in Books > Science & Math > Physics > Optics #354 in Books > Arts & Photography > Architecture > Landscape

Customer Reviews

In the acknowledgements the authors state they "wanted to create a book in the field of optical system design that was clear and easy to understand" - Mission accomplished! This book is indeed easy to understand but nevertheless provides detailed explanations of how to design an optical system. While not deeply mathematical there are sufficient formulae provided (with examples) so you can understand what to do and how to do it. If you were puzzled as to why achromatic lenses are used you won't be after you read this book. The book also explains how distortion occurs and how to get rid of it. Also there are sections on mechanical components such as lens mounting etc. The book also explains how to use typical optical design software. My only (slight) disappointment was the relatively few descriptions of typical systems - but using the book you could design these from first principles. Also to be fair there are so many designs out there that this is probably asking too much. I bought this book because as an electronics engineer I did not know enough about optical systems to be able to design one. Reading this book and downloading some freeware optical design software (and using the book to help understand the outputs) has solved that problem.

Having studied the comments on four other books before holding my breath and purchasing "Optical System Design," I was still worried that it would turn out to be a physics-oriented treatment of the subject despite the comments. I was happily surprised. Not only is this book well- and often humorously-written (to me at least), it has memorable explanations which make applying the knowledge easier. In particular, the excellent treatment throughout the book on the six major third-order aberrations' causes has helped me use my optical design tools more correctly. I do not guess about specific changes, I know what to expect when making a change in the design. I have found over the years that purchasing two texts on a topic is a good strategy. One must be a "thick book," like "Optical System Design," and the other a "thin book" which serves as a map. I'm still looking for the "thin" compliment to OD, but its layout and index are good enough that I will probably not follow my normal pattern.

Although well-written and understandable, this is not a textbook for beginners but a valuable reference guide for the semi-experienced. It provides great overviews and summaries on key optical technologies. However, the index and glossary are a bit incomplete to allow quick referencing. Nonetheless, I highly recommend this book for anyone who is interested in photonics.

This book explains the concept of geometrical optics and opto-mechanics. Without formula, they use a lot of figures which are very helpful to understand. The English is also very clear and

understandable for foreigners. Really good text book.

Based on other reviews, you expect a highly polished product - full of glossy enlightening diagrams and explanations. The book is OK and conveys many important notions of optics adequately, especially if you have some background knowledge. However, at times, it feels like a potpourri, too wide to be under control and lacking in rigor. The authors present a few formulas at times and assure us that they could write many more "if they wanted to". However, this book really feels like the work of practitioners - a bit thin on the theory side. Many figures have a printing quality too low to be readable (so much for the Nyquist criteria, which by no coincidence is presented quite poorly) and the chapter on diffractive optics is a didactic catastrophe. Just because a book has been around for a long time and is respected in the field doesn't mean that it can't be improved upon. Still, I find myself reading the book time and again. The book will complement nicely Born and Wolf, which lies at the other extreme.

This book provides an excellent starting point for most optical system designs, as well as a good set of foundational material. Being able to have this book on my phone as a quick reference has replaced most of the "Field Guide" books I once used.

I love this book. Great practical explanations.

[Download to continue reading...](#)

Handbook of Optical Fibers and Cables, Second Edition (Optical Science and Engineering) Optical System Design, Second Edition Fatasticas ilusiones opticas / Fantastic optical illusions: Alrededor De 150 Imagenes Con Trucos Visuales Y Puzles Opticos / About 150 Images With Visual Tricks and Optical Puzzles (Spanish Edition) Introduction to Optical Communication, Lightwave Technology, Fiber Transmission, and Optical Networks Troubleshooting Optical Fiber Networks: Understanding and Using Optical Time-Domain Reflectometers Photonics Rules of Thumb: Optics, Electro-Optics, Fiber Optics, and Lasers (Optical and Electro-Optical Engineering Series) Optical System Design Laser Safety: Tools and Training, Second Edition (Optical Science and Engineering) Feng Shui: Wellness and Peace- Interior Design, Home Decorating and Home Design (peace, home design, feng shui, home, design, home decor, prosperity) High-Frequency Analog Integrated Circuit Design (Wiley Series in Microwave and Optical Engineering) Design of Integrated Circuits for Optical Communications Practical MEMS: Design of microsystems, accelerometers, gyroscopes, RF MEMS, optical MEMS, and microfluidic systems Computer Design of Diffractive Optics

(Woodhead Publishing Series in Electronic and Optical Materials) Optical Network Design and Implementation
Diffraction Optics: Design, Fabrication, and Test (SPIE Tutorial Texts in Optical Engineering Vol. TT62)
Assessment, Evaluation, and Programming System for Infants and Children (AEPS[®]), Second Edition, Curriculum for Three to Six Years (AEPS: Assessment, Evaluation, and Programming System (Unnumbered))
Assessment, Evaluation, and Programming System for Infants and Children (AEPS[®]), Second Edition, Test: Birth to Three Years and Three to Six Years ... and Programming System (Unnumbered))
System Analysis & Design with Case Studies: start system presentation
ARM System Developer's Guide: Designing and Optimizing System Software (The Morgan Kaufmann Series in Computer Architecture and Design)
Computers as Components, Third Edition: Principles of Embedded Computing System Design (The Morgan Kaufmann Series in Computer Architecture and Design)

[Dmca](#)