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Field Guide To Geometrical Optics (SPIE Vol. FG01)





Synopsis

This Field Guide derives from the treatment of geometrical optics that has evolved from both the undergraduate and graduate programs at the Optical Sciences Center at the University of Arizona. The development is both rigorous and complete, and it features a consistent notation and sign convention. This volume covers Gaussian imagery, paraxial optics, first-order optical system design, system examples, illumination, chromatic effects, and an introduction to aberrations. The appendices provide supplemental material on radiometry and photometry, the human eye, and several other topics.

Book Information

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Customer Reviews

This little book is an excellent optics reference book. It collects together the basic concepts and formulas of geometric optics in a clear and concise form, and also defines and explains common optical terminology (pupils, rays, FOV, NA, etc.). It reviews common optical systems like telescopes and microscopes, and has sections on aberrations and chromatic effects. If you do optics, you want to have a copy of this on your desk. The book is particularly useful for those of us who learned basic optics from a book like Hecht's Optics, but now need to actually put what we learned into practice. Beware, though: the sign conventions used may be unfamiliar and may take some getting used to.

When I took the course this Field Guide is based on, I walked away with a binder full of hand-written notes, which I probably never looked at again. 15 years later, I keep this (and about 4 other Field

Guides from the same series) within arm's reach in case I don't feel like deriving a paraxial equation or searching for the scotopic response function or digging up some other not-quite-trivial piece of information. One nice feature is that each page is self-contained and devoted to a single topic. Another nice feature is the spiral binding, so it stays open.

I have extensively used this text as both an optics student and while interning in the industry. Every optical engineer and student should have this book handy. Well organized and comprehensive, it packs a surprising amount of information and equations for the small size. It is a bit flimsy but the spiral bound does help it stay open, as someone else mentioned.

I had this book as a text for a class and as a text book it stinks, I give it 1 star. However it isn't a text book but rather a reference book. As a reference book I give this 5 stars. It is great if you need a little refresher on optics but this is not something to learn optics from.

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