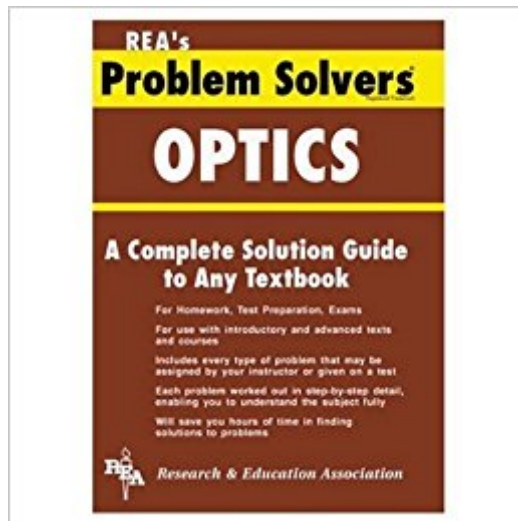


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Optics Problem Solver (Problem Solvers Solution Guides)



Synopsis

For students in engineering and physics. Comprehensive problems are provided in waves, refraction, interference, diffraction, scattering, polarization, mirrors, and lenses. Among other topics treated in detail are prisms, dispersion, aberration, photometry, color, and holography.

Book Information

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Customer Reviews

That's an odd thing to say about a Problem Solver book, but it is true -it's a delight considering the standard I'm accustomed to in optics textbooks. They're all like pieces of a jigsaw puzzle. Get enough of them and read them all and there's a chance you can see the big picture. This study guide has virtually every kind of optics problem you could imagine, especially in a classroom setting, with detailed solutions better than any textbook. The following is the table of contents.

1. Waves
2. Velocity of Light
3. Physical Properties of Light
4. Rectilinear Propagation of Light
5. Refraction
6. Refraction at Curved Surfaces
7. Dioptrics
8. Ophthalmic Optics
9. Interference
10. Applied Interferometry
11. Diffraction
12. Resolution
13. Absorption and Scattering
14. Polarization
15. Ray Tracing
16. Plane Mirrors
17. Curved Mirrors
18. Lenses
19. Optical Instruments
20. Aperture and Field of Optical Instruments
21. Aberration
22. The Prism
23. Dispersion
24. Photometry
25. Color, Illuminance, and Alphanumeric Displays
26. Lasers and Holography
27. Atomic Spectrum and Thermal Radiation

I keep a copy at work in case I forget something - I always do. If you read Hecht's Optics (4th Edition) and in parallel work the problems in Schaum's Outline of Optics, then come to this book. Understanding Schaum's proves you understand how to work along the

rules of optics. Understand the problems in this book and you've proved to yourself you can take those rules and think outside of the box. However, this study guide is particularly weak on Fourier optics. For that subject I recommend *Linear Systems, Fourier Transforms, and Optics* (Wiley Series in Pure and Applied Optics). It's expensive, but worth it for a good understanding of that particular part of optics.

I found this book to be an excellent resource for the topic. The author has covered the major subtopics in the field. His examples are varied and well worded. I was impressed with the number of different problem types. His solutions are thorough, and he uses diagrams throughout the book. The math is sufficient and not oversimplified and requires an advanced knowledge of math techniques. This book is written for a serious student of optics, and is an excellent supplement for such students.

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