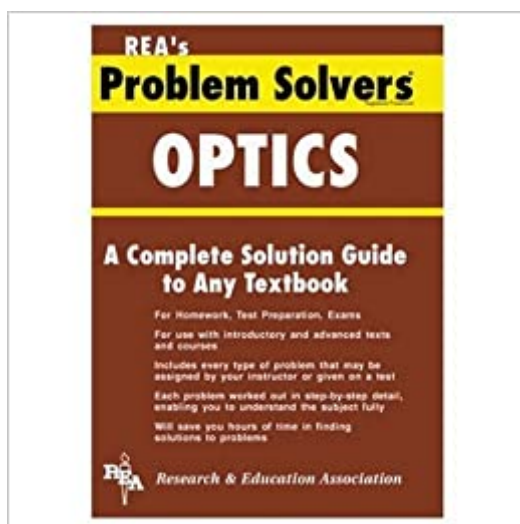


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Optics Problem Solver (Problem Solvers Solution Guides)



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. Waves2. Velocity of Light3. Physical Properties of Light4. Rectilinear Propagation of Light5. Refraction6. Refraction at Curved Surfaces7. Dioptrics8. Ophthalmic Optics9. Interference10. Applied Interferometry11. Diffraction12. Resolution13. Absorption and Scattering14. Polarization15. Ray Tracing16. Plane Mirrors17. Curved Mirrors18. Lenses19. Optical Instruments20. Aperture and Field of Optical Instruments21. Aberration22. The Prism23. Dispersion24. Photometry25. Color, Illuminance, and Alphanumeric Displays26. Lasers and Holography27. Atomic Spectrum and Thermal RadiationI 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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