Record Nr. UNINA9911004814003321 The new physical optics notebook: tutorials in Fourier optics // **Titolo** George O. Reynolds ... [et al.] Pubbl/distr/stampa Bellingham, Wash., : SPIE Optical Engineering Press, c1989 **ISBN** 1-61583-733-7 0-8194-8103-3 Descrizione fisica 1 online resource (572 p.) Collana SPIE Press monograph;; PM01 Altri autori (Persone) ReynoldsGeorge O ParrentGeorge B Disciplina 535/.2 Soggetti Physical optics Lingua di pubblicazione Inglese **Formato** Materiale a stampa Monografia Livello bibliografico Rev. ed. of: Physical optics notebook / George B. Parrent, Brian J. Note generali Thompson. "Copublished by SPIE--The International Society for Optical Engineering and American Institute of Physics." Includes bibliographical references and index. Nota di bibliografia Nota di contenuto Preface -- Chapter 1. Huygens' principle. 1.1. Light as a wave disturbance; 1.2. Wave propagation; References -- Chapter 2. Fourier transforms. 2.1. Introduction; 2.2. Diffraction problems; 2.3. Conclusion -- Chapter 3. Array theorem. 3.1. Introduction; 3.2. The array theorem; 3.3. Applications of array theorem; 3.4. Some examples; 3.5. Appendix: The convolution theorem: Reference -- Chapter 4. Image formation: the impulse response. 4.1. Introduction; 4.2. Impulse response; 4.3. Image of a point object; 4.4. Conclusions; 4.5. Appendix: The relationship to geometrical optics -- Chapter 5 Image formation in terms of the impulse response. 5.1. Introduction; 5.2. Impulse response for a cylindrical lens; 5.3. Image of a bar; 5.4. Image of two bars; 5.5. Image of three bars; 5.6. Experimental illustrations; Reference -- Chapter 6. Resolution in terms of the impulse response. 6.1. Introduction; 6.2. Two-point resolution; 6.3. Image of two points: one dimensional; 6.4. Image of two points: two dimensional; 6.5. Conclusions -- Chapter 7. Image formation: the transfer function.7.1

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## Sommario/riassunto

Approaches the topic of physical optics with examples drawn from the physical processes described. Includes chapters on Fourier transforms, image formation, optical coherence, diffraction, interference, holography, interferometry, analog optical computing, synthetic aperture imaging, and others. Contains more than 600 photographs and line drawings and more than 650 references.