Record Nr. UNINA9910820712103321 Autore Kaschke Michael Titolo Optical devices in ophthalmology and optometry: technology, design principles and clinical applications / / Michael Kaschke, Karl-Heinz Donnerhacke, and Michael Stefan Rill; cover design, Simone Benjamin Weinheim, Germany:,: Wiley-VCH,, 2014 Pubbl/distr/stampa ©2014 **ISBN** 3-527-64898-4 3-527-64896-8 3-527-64899-2 9783527410682 Descrizione fisica 1 online resource (639 p.) Altri autori (Persone) DonnerhackeKarl-Heinz RillMichael Stefan **BenjaminSimone** Disciplina 617.70028 Soggetti Oftalmologia - Aparells i instruments Optometria - Aparells i instruments Ophthalmology - Equipment and supplies Optometry - Equipment and supplies Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Includes bibliographical references and index. Nota di bibliografia Nota di contenuto Cover; Title page; Contents; Preface; Part One; 1 Structure and Function; 1.1 Anatomy of the Human Eye; 1.2 Retina: The Optical Sensor; 1.2.1 Retinal Structure; 1.2.2 Functional Areas; 1.3 Recommended Reading; References; 2 Optics of the Human Eye; 2.1 Optical Imaging; 2.1.1 Entrance and Exit Pupils; 2.1.2 Cardinal Points; 2.1.3 Eye Axes; 2.1.4 Accommodation; 2.1.5 Resolution; 2.1.6 Adaption; 2.1.7 Stiles-Crawford Effect; 2.1.8 Depth of Field; 2.1.9 Binocular Vision; 2.1.10 Spectral Properties; 2.2 Schematic Eye Models; 2.2.1 Paraxial Model: The Gullstrand Eye; 2.2.2 Finite Wide-Angle Models 2.2.3 Applications of Eye Models 2.3 Color Vision; 2.4 Recommended

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## Sommario/riassunto

Medical technology is a fast growing field. This new title gives a comprehensive review of modern optical technologies alongside their clinical deployment. It bridges the technology and clinical domains and will be suitable in both technical and clinical environments. It introduces and develops basic physical methods (in optics, photonics, and metrology) and their applications in the design of optical systems for use in medical technology with a special focus on ophthalmology. Medical applications described in detail demonstrate the advantage of utilizing optical-photonic methods. Exercises an