1. Record Nr. UNISALENTO991002076079707536 Autore Johnsen, Sönke Titolo The optics of life: a biologist's guide to light in nature / Sönke Johnsen Princeton, NJ: Princeton University Press, c2012 Pubbl/distr/stampa **ISBN** 9780691139906 (hardback) 9780691139913 (paperback) Descrizione fisica x, 336 p., [8] p. of plates : ill. (some col.) : 24 cm Classificazione LC QH515 617.7 Disciplina 571.4/55 Soggetti Photobiology Physiological optics Polarization (Light) Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di bibliografia Includes bibliographical references and index Nota di contenuto Units and geometry -- Emission -- Absorption -- Scattering --Scattering with interference -- Fluorescence -- Polarization --Measuring light -- What is light, really? -- Appendix A. Converting spectral irradiance to lux -- Appendix B. Calculating the absorbance spectrum of a visual pigment -- Appendix C. Refractive indices of common subtances -- Appendix D. Optical properties of very clear water -- Appendix E. Optical properties of natural waters -- Appendix F. Useful formulas -- Appendix G. Equipment and software suppliers "Optics--a field of physics focusing on the study of light--is also Sommario/riassunto central to many areas of biology, including vision, ecology, botany, animal behavior, neurobiology, and molecular biology. The Optics of Life introduces the fundamentals of optics to biologists and nonphysicists, giving them the tools they need to successfully incorporate optical measurements and principles into their research. S©ænke Johnsen starts with the basics, describing the properties of light and the units and geometry of measurement. He then explores how light is created and propagates and how it interacts with matter. covering topics such as absorption, scattering, fluorescence, and

polarization. Johnsen also provides a tutorial on how to measure light as well as an informative discussion of quantum mechanics. The Optics

of Life features a host of examples drawn from nature and everyday life, and several appendixes that offer further practical guidance for researchers. This concise book uses a minimum of equations and jargon, explaining the basic physics of light in a succinct and lively manner. It is the essential primer for working biologists and for anyone seeking an accessible introduction to optics"