1. Record Nr. UNINA9910821830203321 Autore Oleari Claudio Titolo Standard colorimetry: definitions, algorithms, and software // Claudio Oleari Pubbl/distr/stampa West Sussex, England:,: Wiley,, 2016 ©2016 **ISBN** 1-118-89447-2 1-118-89446-4 1-118-89445-6 Descrizione fisica 1 online resource (645 p.) Collana SDC-Society of Dyers and Colourists 543/.55 Disciplina Soggetti Colorimetry Reflection (Optics) Light absorption Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Series: Title page: Copyright: Dedication: Society of Dyers and Colourists: Preface: 1 Generalities on Colour and Colorimetry: 1.1 Colour; 1.2 Colorimetry; References; Bibliography; 2 Optics for Colour Stimulus: 2.1 Introduction: 2.2 Electromagnetic Waves: 2.3 Photons: 2.4 Radiometric and Actinometric Quantities; 2.5 Inverse Square Law; 2.6 Photometric Quantities; 2.7 Retinal Illumination; References; Bibliography; 3 Colour and Light-Matter Interaction; 3.1 Introduction; 3.2 Light Sources; 3.3 Planckian Radiator; 3.4 Light Regular Reflection and Refraction; 3.5 Light Scattering 3.6 Light Absorption and Colour Synthesis 3.7 Fluorescence; 3.8 Transparent Media; 3.9 Turbid Media; 3.10 Ulbricht's Integration Sphere; References; Bibliography; 4 Perceptual Phenomenology of Light and Colour; 4.1 Introduction; 4.2 Perceived Colours, Categorization and Language; 4.3 Light Dispersion and Light Mixing; 4.4 Unique Hues, Colour Opponencies and Degree of Resemblance: 4.5 Colour Similitude: 4.6 Unrelated and Related Colours; 4.7 Colour Interactions; References;

Formation; 5.3 Eye and Pre-retina Physics

5 Visual System; 5.1 Introduction; 5.2 Eye Anatomy and Optical Image

5.4 Anatomy of the Retina5.5 From the Retina to the Brain; 5.6 Visual System and Colorimetry: Bibliography: References: 6 Colour-Vision Psychophysics: 6.1 Introduction: 6.2 Adaptation: 6.3 Absolute Thresholds in Human Vision; 6.4 Absolute Threshold and Spectral Sensitivity in Scotopic and Photopic Visions; 6.5 Luminous Efficiency Function; 6.6 Light Adaptation and Sensitivity; 6.7 Weber's and Fechner's Laws; 6.8 Stevens' Law; 6.9 Fechner's and Stevens' Psychophysics; 6.10 Wavelength Discrimination; 6.11 Saturation Discrimination and Least Colorimetric Purity 6.12 Rushton's Univariance Principle and Scotopic Vision6.13 Tristimulus Space; 6.14 Lightness Scales; 6.15 Helmholtz-Kohlrausch Effect; 6.16 Colour Opponencies and Chromatic Valence; 6.17 MacAdam's Chromatic Discrimination Ellipses; 6.18 Perceived Colour Difference; 6.19 Abney's and Bezold-Brucke's Phenomena; 6.20 Chromatic Adaptation and Colour Constancy; 6.21 Colour-Vision Psychophysics and Colorimetry: References: 7 CIE Standard Photometry: 7.1 Introduction; 7.2 History of the Basic Photometric Unit; 7.3 CIE 1924 Spectral Luminous Efficiency Function 7.4 CIE 1924 and CIE 1988 Standard Photometric Photopic Observers7. 5 Photometric and Radiometric Quantities; 7.6 CIE 1951 Standard Scotopic Photometric Observer: 7.7 CIE 2005 Photopic Photometric Observer with 10° Visual Field; 7.8 CIE Fundamental Photopic Photometric Observer with 2°/10° Visual Field; References; 8 Light Sources and Illuminants for Colorimetry: 8.1 Introduction; 8.2 Equal-Energy Illuminant; 8.3 Blackbody Illuminant; 8.4 CIE Daylights; 8.5 CIE Indoor Daylights; 8.6 CIE Standard Illuminants; 8.7 CIE Light Sources: A, B and C: 8.8 CIE Sources for Colorimetry 8.9 CIE Illuminants: B, C and D