1. Record Nr. UNINA9910139248803321

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| Autore | Fairchild Mark D |
| Titolo | Color appearance models / / Mark D. Fairchild |
| Pubbl/distr/stampa | Chichester, West Sussex, U.K., : Wiley, c2013 |
| ISBN | 9781118653104<br>1118653106<br>9781118653128<br>1118653122<br>9781118653111<br>1118653114 |
| Edizione | [3rd ed.] |
| Descrizione fisica | 1 online resource (474 p.) |
| Collana | The wiley-IS&T series in imaging science and technology |
| Classificazione | TEC015000 |
| Disciplina | 612.8/4 |
| Soggetti | Color vision |
| 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 | Color Appearance Models; Copyright; Contents; Series Preface; Preface; Acknowledgments; Introduction; 1 Human Color Vision; 1.1 Optics of the Eye; The Cornea; The Lens; The Humors; The Iris; The Retina; The Fovea; The Macula; The Optic Nerve; 1.2 The Retina; Rods and Cones; Intrinsically Photosensitive Retinal Ganglion Cells; 1.3 Visual Signal Processing; Receptive Fields; Processing in Area V1; 1.4 Mechanisms of Color Vision; Trichromatic Theory; Hering's Opponent Colors Theory; Modern Opponent Colors Theory; Adaptation Mechanisms; Visual Mechanisms Impacting Color Appearance<br>1.5 Spatial and Temporal Properties of Color VisionThe Oblique Effect; CSFs and Eye Movements; 1.6 Color Vision Deficiencies; Protanopia, Deuteranopia, and Tritanopia; Anomalous Trichromacy; Color Vision Deficiencies and Gender; Screening Observers Who Make Color Judgments; 1.7 Key Features for Color Appearance Modeling; 2 Psychophysics; 2.1 Psychophysics Defined; Two Classes of Visual Experiments; 2.2 Historical Context; Weber's Work; Fechner's Work; Stevens' Work; 2.3 Hierarchy Of Scales; Nominal Scales; Ordinal Scales; Interval Scales; Ratio Scales; Example of the Use of Scales<br>2.4 Threshold TechniquesTypes of Threshold Experiments; Method of |

Adjustment; Method of Limits; hod of Constant Stimuli; Yes-No Method; Forced-Choice Procedures; Staircase Procedures; Probit Analysis of Threshold Data; 2.5 Matching Techniques; Asymmetric Matching; Memory Matching; 2.6 One-Dimensional Scaling; 2.7 Multidimensional Scaling; 2.8 Design of Psychophysical Experiments; 2.9 Importance in Color Appearance Modeling; 3 Colorimetry; 3.1 Basic and Advanced Colorimetry; 3.2 Why is Color?; 3.3 Light Sources and Illuminants; Spectroradiometry; Black-Body Radiators; CIE Illuminants 3.4 Colored MaterialsCIE Illumination and Viewing Geometries; Diffuse/Normal and Normal/Diffuse; 45/Normal and Normal/45; Fluorescence; 3.5 The Human Visual Response; The System of Photometry; 3.6 Tristimulus Values and Color Matching Functions; Tristimulus Values for Any Stimulus; Estimating Average Color Matching Functions; Two Sets of Color Matching Functions; 3.7 Chromaticity Diagrams; 3.8 CIE Color Spaces; CIELAB; CIELUV; 3.9 Color Difference Specification; 3.10 The Next Step; 4 Color Appearance Terminology; 4.1 Importance of Definitions; 4.2 Color; 4.3 Hue; 4.4 Brightness and Lightness
4.5 Colorfulness and Chroma4.6 Saturation; 4.7 Unrelated and Related Colors; 4.8 Definitions in Equations; 4.9 Brightness-Colorfulness vs Lightness-Chroma; 5 Color Order Systems; 5.1 Overview and Requirements; 5.2 The Munsell Book of Color; Munsell Value; Munsell Hue; Munsell Chroma; Munsell Book of Color; 5.3 The Swedish NCS; 5.4 The Colorcurve System; 5.5 Other Color Order Systems; OSA Uniform Color Scales; DIN System; Ostwald System; 5.6 Uses of Color Order Systems; Color Order Systems in Visual Experiments; Color Order Systems in Art and Design; Color Order Systems in Communication Color Order Systems in Education

Sommario/riassunto

"The essential resource for readers needing to understand visual perception and for those trying to produce, reproduce and measure color appearance in various applications such as imaging, entertainment, materials, design, architecture and lighting.This book builds upon the success of previous editions, and will continue to serve the needs of those professionals working in the field to solve practical problems or looking for background for on-going research projects. It would also act as a good course text for senior undergraduates and postgraduates studying color science.The 3rd Edition of Color Appearance Models contains numerous new and expanded sections providing an updated review of color appearance and includes many of the most widely used models to date, ensuring its continued success as the comprehensive resource on color appearance models.Key features: Presents the fundamental concepts and phenomena of color appearance (what objects look like in typical viewing situations) and practical techniques to measure, model and predict those appearances. Includes the clear explanation of fundamental concepts that makes the implementation of mathematical models very easy to understand. Explains many different types of models, and offers a clear context for the models, their use, and future directions in the field"--
"This book is about one of the major unresolved issues in the field of color science, the efforts that have been made toward its resolution, and the techniques that can be used to address current technological problems"--