

1. Record Nr.	UNINA9910337636603321
Autore	Rossi Maurizio
Titolo	Circadian Lighting Design in the LED Era // by Maurizio Rossi
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	3-030-11087-7
Descrizione fisica	1 online resource (XXII, 277 p. 111 illus., 87 illus. in color.)
Collana	Research for Development, , 2198-7300
Disciplina	624 621.32
Soggetti	Civil engineering Medicine Human physiology Microwaves Quality of life - Research Civil Engineering Health Promotion and Disease Prevention Human Physiology Microwaves, RF and Optical Engineering Quality of Life Research
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Cap 1 The Human Circadian System -- Cap 2 Circadian Photometry -- Cap 3 Case study: analysis of natural lighting in the interiors -- Cap 4 LED products for Circadian Lighting Design -- Cap 5 Case study: an applied research for Circadian Lighting Design -- Cap 6 Conclusions: Guidelines and requirements for Circadian Lighting Design.
Sommario/riassunto	This book explores how lighting systems based on LED sources have the ability to positively influence the human circadian system, with benefits for health and well-being. The opening chapters examine the functioning of the human circadian system, its response to artificial lighting, potential health impacts of different types of light exposure, and current standards in circadian photometry. A first case study analyzes the natural lighting available in an urban interior, concluding

that it is unable to activate the human circadian system over the entire year. Important original research is then described in which systems suitable for artificial circadian lighting in residential interiors and offices were developed after testing of new design paradigms based on LED sources. Readers will also find a detailed analysis of the LED products available or under development globally that may contribute to optimal artificial circadian lighting, as well as the environmental sensors, control interfaces, and monitoring systems suitable for integration with new LED lighting systems. Finally, guidelines for circadian lighting design are proposed, with identification of key requirements.
