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ЩОДО ЗАПРОПОНОВАНИХ МЕТРИКАХ СВІТЛА ТА ОСВІТЛЕНОСТІ

Обговорюється змінна V(λ) на більш широку функцію світлової ефективності і прийняття ряду функцій ефективності для використання в практиці освітлювання.

Ключові слова: спектральна функція світлової ефективності, світло, освітлення, мезопічна фотометрія.

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ABOUT PROPOSED METRICS OF LIGHT AND LIGHTING

It's discussed replacing V(λ) with a broader luminous efficiency function for use in lighting practice.

Key words: spectral function of light efficiency, light, lighting, mesopic photometry.

Since 1924 year and until recently the photopic luminous efficiency function, V(λ), has been spectral weighting function for quantifying light or, more formally, for quantifying luminous intensity, in candelas, does not, however, accurately represent what it was intended to do in 1924, namely to characterize the "human eye's visual sensitivity" to electromagnetic radiation. Based upon a subsequent, large body of neuro science research, we now know that V(λ) only approximates the spectral sensitivity of just two of the five photoreceptor types in the retina and, thus, does not fully characterize the spectral range at human visual (and non-visual) sensitivity to electromagnetic radiation. For this reason, a much broader universal luminous efficiency function [U(x)] based upon the spectral sensivity of all five photoreceptors in human retina is proposed to be used for the quantification of light.

To maximize the benefits provided by lighting, it necessary to tune the spectral irradiance distribution of the lighting system to the spectral sensitivity of the neural channel that provides desired benefit (sun brightness perception or off-axis hazard defection).

It's proposed benefit efficiency functions are based upon basic research into the physiological and behavioral responses of the human visual and non-visual systems to electromagnetic radiation incident on the retina.