

Wireless Low-Power Light-Emitting Device with RGB LED

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Abstract

Color therapy is a type of alternative medicine. It utilizes the emission of a specific wavelength of light to treat diseased areas. This study presents a wireless, low-power light-emitting device with RGB LED to conduct color therapy. The device is small-sized, adhesive to the skin, and without a tether line for power or communication. Aided by the property of skin adhesiveness, the device provides a therapeutic effect comparable to that of available devices, over a short radiation distance and consumes low power. The therapeutic dosage parameters including color wavelength combination, LED brightness, and illumination time can be regulated through the smartphone application. The wavelength consistency over intensities and the intensity accuracy were validated. With effective calibration, the emission of light by the LED can be effectively regulated to ensure therapeutic effects.

Keywords: color therapy, RGB LED, color combination, light-emitting device

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