

## **BLUEWAVE® Technology: The safest light therapy**

- **BLUEWAVE® causes fewer side effects**
- **BLUEWAVE® Technology eliminates any UV or near UV light from being produced**
- **Only light to pass Government & Independent Safety and Hazard Analysis**
- **BLUEWAVE®E is safer than fully shaded outdoor light**
- **10,000 lux light is over 25 times more intense than BLUEWAVE® light.**

### **Fewer Side Effects**

Because it only produces the necessary bandwidth and intensity of light, BLUEWAVE® is much easier on the eyes and causes fewer side effects. By contrast, standard light therapy doesn't naturally produce this bandwidth, and its intensity must be increased to 10,000 lux in order to be effective. Because BLUEWAVE® is 1/25<sup>th</sup> as intense as full-spectrum, side effects are not common with BLUEWAVE light. Short wavelength studies at Harvard and Thomas Jefferson concluded the following:

Exposure to the optimum balance of light wavelengths may also reduce the undesirable side-effects associated with therapeutic use of light exposure such as glare, visual discomfort, headaches and nausea." — Steven W. Lockely, MD June 2003, J. of Endocrinology & Metabolism

In terms of potential light safety, not only did a formal hazard analysis confirm there to be no danger to human eyes, but also there were no complaints of headache, eye or vision problems and insomnia,"— Dr. Gena Glickman, December 2004, National Institutes of Health Final Report

### **No UV or Near UV light**

BLUEWAVE®'s LED technology produces specific bandwidths and avoids any ultraviolet or near ultraviolet light output. Other light sources cannot precisely control bandwidths and so produce some UV and near UV light. These light devices must incorporate special UV filtering lenses in order to block any potentially damaging light. Besides avoiding the intensity of 10,000 lux light, BLUEWAVE® does not over-produce the necessary amount of blue light.

### **Safety of the goLITE's BLUEWAVE light:**

Thomas Jefferson Medical University first addressed BLUEWAVE's® safety in the National Institutes of Health study, "Blue LED Light Panel for Treatment of Winter Depression" (Grant #1R43MH066453). In this study, TJMU used the ICNIRP/ACGIH threshold values<sup>1</sup> as a benchmark. BLUEWAVE® light was found to be only 15% of the threshold value limit (Radiation exceeding 100% is considered potentially hazardous). The BLUEWAVE light was also accepted by the FDA's optical safety review. Finally, the NIH consultant ocular physicist, Dr. David Sloney has certified the safety of the goLITE®. Viewed in proper perspective, the amount of blue light produced by the goLITE is the same as one would receive in full shaded outdoor light.

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**ICNIRP:** International Commission for Non-Ionizing Radiation Protection. The ICNIRP is a body of leading independent experts who deal with potential health hazards arising from radiation exposure, including optical radiation from ultraviolet, visible and infrared light. <http://www.icnirp.de/what.htm>

**ACGIH :** The American Conference of Governmental Industrial Hygienists. Industrial hygiene refers to the health of industry workers, and the preventative medical measures used to protect workers. The ACHIH publishes over 400 reference works that list the "Threshold Limit Values" for chemical and biological safety. <http://www.acgih.org/about/history.htm>

### **Safer Pupil Constriction**

Light therapy is safer when pupils constrict properly from exposure to bright light. Recent studies show that melanopsin photoreceptors control pupil constriction. Since melanopsin responds best to 470 nm light, melanopsin cells respond better to BLUEWAVE® than to other wavelengths of light. Light therapy without the effective level of 470 nm light may not cause effective pupillary constriction and allow too much intensity in the eye. This over-stimulation may be associated with side effects.