

OttLite Technologies is a CFL and fixture manufacturer with a strong history in the manufacturing of fluorescent lighting products. Our founder, Dr. John Ott was a pioneer in the development of specialized fluorescent phosphor formulations. As our company evolved, we have developed additional specialized phosphor formulations that offer great improvements over standard fluorescent lighting products.

ENERGY STAR® has done exemplary work to educate the world on energy efficient products and has also been established as a household icon for efficiency and quality. OttLite Technologies greatly desires to participate in this program. However, we strongly believe the current ENERGY STAR® requirements, and specifically newer changes, excludes CFL phosphor technology that is proven to reduce energy needs of residential lighting.

OttLite products have been scientifically developed to encompass both the photopic and scotopic response functions of the human eye. Both of these response functions must be considered as the combined result greatly affects the perception of light intensity. This has been thoroughly documented within the lighting industry, specifically by Dr. Sam Berman; a physicist with Lawrence Berkeley Laboratory. Over the last decade, he has conducted a series of experiments sponsored by the U.S. Department of Energy that clearly indicate that both vision and lighting energy efficiency can be improved by considering the effects of scotopically enhanced lights.

Our products have been developed specifically to address this important need for both energy efficiency and quality of light. This scotopically enhanced light allows the human eye to fully utilize both cone and rod receptors to control pupil size. Smaller pupils provide better acuity and improve the depth of field. Current lighting practice dictates reducing pupil size by raising light levels which is not efficient and fails to utilize the response of rods to control the pupil size. Increasing light levels in an attempt to improve vision not only adds glare but wastes energy. ENERGY STAR's® increase of the efficacy requirements are eliminating scotopically enhanced CFLs such as OttLites from meeting the minimum requirements.

Our 5500K product have CRI values of 90 or better, however they fall below the 65 lm/W efficacy requirement. Using the visual effective lumens coefficient proposed by Dr. Berman would propel our efficacy beyond the 70 lm/w future requirement. With the current revision restrictive CCT values and increased Lumen efficacy requirement, we cannot partner with Energy Star to help reduce lighting energy use. The Berman study substantiates our claim that "brighter does not mean better" and that lumens per watt based solely on the photopic response curve may not be the optimal method for determining energy efficiency for residential lighting.

Whether it is the current version or this new upcoming 1.0 version of ENERGY STAR®, OttLite would still not be able to participate as we would not meet the eligibility criteria for Luminous Efficacy and CCT. Our Lighting Product is clearly a specialized product, but we should be allowed to participate; whether in some type of new category or special exception.

OttLite requests that a category of scotopically rich Daylight lamps be included in the luminaire specification. As such, correlated color temperature based on the D55 illuminant would be listed. Additionally, lamp efficacy would be augmented by the proposed  $P(s/p)^{.78}$  factor developed by Dr. Berman. For a D55 lamp the s/p ratio is 2.28 and the effectivity ratio would be 1.9. Thus, a measured lumen/watt of 57 (our typical) would calculate to 108.

Since ENERGY STAR has become a household icon for energy efficiency, we greatly desire to participate in your program.