



### **BUNSON-ROSCOE LAW OF RECIPROCITY**

While the effects of low-level thermal exposure may be mitigated by thermal conduction from the exposure site, photochemical interactions generally follow the Bunson-Roscoe Law of Reciprocity.

**This states that photochemical processes are dose dependent, meaning that low-level, long term exposure gives rise to the same damage as high-level, short-term exposure. One of the fundamental laws of photochemistry.**

<http://www.ledsmagazine.com/articles/print/volume-8/issue-10/features/led-based-products-must-meet-photobiological-safety-standards-part-1-magazine.html>  
(the reciprocity law), one of the fundamental laws of photochemistry; discovered by R. Bunsen and the English chemist H. Roscoe in 1862. According to this law, the amount of product of a photochemical reaction is determined by the total amount of radiant energy falling on the photochemical system—that is, the product of the radiation intensity  $\Phi$  and the exposure time  $t$ —without regard for the dependence on the relation of the cofactors  $\Phi$  and  $t$ .

Why should you care?

**This means the Traditional UV Nail lamps that use fluorescent tubes & the LED UV Nail Lamps end up being more or less equal when it comes to the amount of UV exposure one is being exposed to during the curing of gel polishes.**