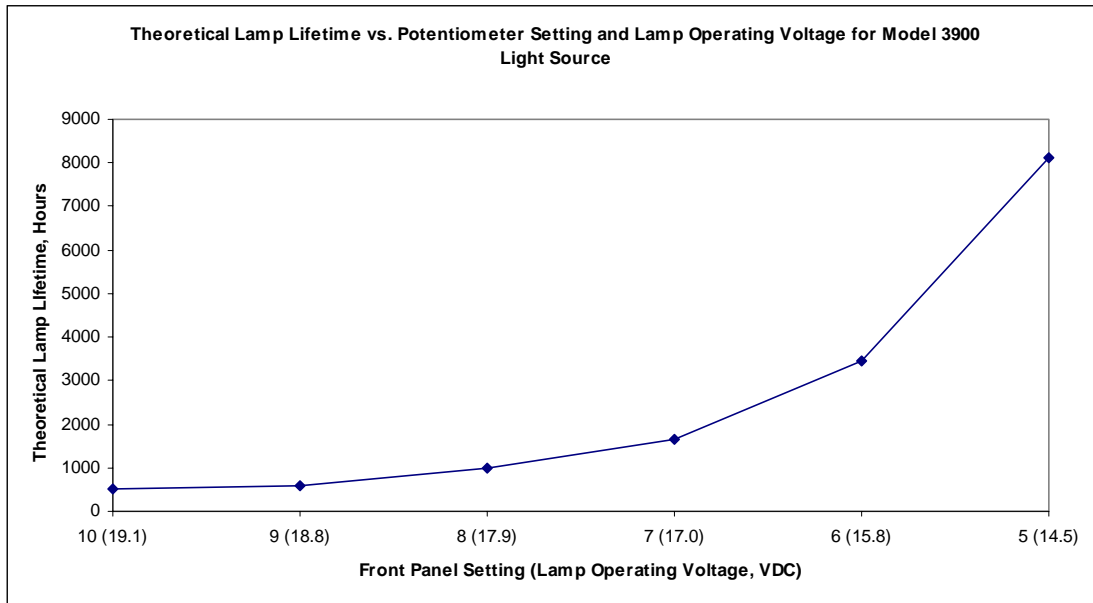


# Technical Note: 108

**Question:** What is the expected lifetime (in hours) of a 150W, 21V, EKE lamp?



**Answer:** The lamp life of all incandescent lamps is determined by the operating conditions. The prime factor of lamp life is the voltage at which the lamp is operated. The lower the voltage the longer the projected life will be. The manufacturers rated lifetime at full rated voltage (21 volts) is 200 hours. The design of our 3900 *Smart-Lite* allows the optimizing of the life of the lamp by allowing the lamp voltage to be regulated to the desired intensity. The lamp life is an exponential function given by

$$L = 200(V/21)^{-10}$$

where L is the lifetime and V is the operating voltage. A 3900 at full power has a calculated lifetime of 500 hours. If the operating voltage is reduced to 16 volts, for example, the calculated lifetime is up to around 3000 hours. Operating voltages of 14.5 VDC and below perform similarly with a estimated lifetime of 8000 hours.

Note: The 3900 *Smart-Lite* is designed to assure the Tungsten Halogen lamp is operating in the halogen cycle.

### **Illumination Technologies, Inc.**

5 Adler Drive, East Syracuse, NY 13057 USA

TEL: 315-463-4673 FAX: 315-463-1401

E-mail: [info@illuminationtech.com](mailto:info@illuminationtech.com)

<http://www.illuminationtech.com>