

Technical Release

Emergency Lighting Products

June 17th, 2005

“An advantage on the competition”

In our recently published new 2005 catalogues, we are certain that you have noticed something other than just the new look. That “something” would be “ALINGAP” technology, which is found in the features and typical specifications of most of our exit signs.

Why “AllnGaP” LED Technology Matters?

In recent times, sustained R&D efforts in the optoelectronics industry have led to a new development in the LED manufacturing: the “AllnGaP” technology. Based on a compound of four elements: Aluminum, Indium, Gallium and Phosphorus, it offers a higher light efficacy, with the Lumen/Watt ratio 300% to 500% higher than the traditional GaAs LED. The new technology also improves significantly the maintained light output of the LED by utilizing materials that operate at lower temperatures than previous generation of LEDs.

Due to the increased market awareness on the subject, LED manufacturers have started to publish test results and statistical data related to the light degradation phenomenon. Among other data publicly available on the Internet, an article from a leading semiconductor manufacturer (*Agilent Technologies, Application Brief I-018) describes the results of a High-Temperature Operating Life (HTOL) test carried on AllnGaP LEDs during a 16,000-hour time frame. Based on the test results the authors estimate that AllnGaP LEDs exposed to 100,000 hours (11.4 years) of continuous use at an ambient temperature of +55°C would exhibit an overall light output degradation of about 27%, which translates to an annual rate 10 times lower than the average light loss of GaAs LEDs.

The outstanding results of the AllnGaP technology have enabled the engineers at Thomas&Betts to design a new generation of Exit signs with sustained lighting performance and reduced power consumption. The AllnGaP LED signs have the initial level of legend illumination 35 to 50 % higher than the severe requirements of CSA/C860 and UL924 standards. This will compensate for the expected 27% light degradation in time, allowing the equipment to still meet the visibility criteria more than Ten Years After the field installation.

(See back-page for the study from Agilent Technologies)

Unlike other emergency lighting manufacturers, who only guarantee the equipment against functional defects, the Thomas&Betts AllnGaP Exit signs are designed for 10 years+ of CSA/UL photometric compliance.

Make sure your customer writes “ALINGAP LED” in its specification for EXIT signs.

This represents the best assurance for Energy Efficiency, Long-Life and Maintained Performance.

Our constant goal for excellence is what keeps us ahead of the competition!

Thomas&Betts

* By courtesy of Agilent Technologies, Inc.

Projected Long Term Degradation

High temperature operating life, HTOL, testing is used to project long term light output degradation. HTOL testing is performed in an ambient of +55°C using an uninterrupted dc current to drive the LED devices under test.

The projected long term average light output degradation characteristic for Precision Optical Performance AlInGaP LED lamps is shown in Figure 1. The lamps under test exhibit a positive degradation characteristic out to the 1000 hour point. From the 1000 hour time point, the light output degrades gradually as a logarithmic function of time. Based on 16,000 hour HTOL data at -13 1/2%, the average long term light output degradation at the 100,000 hour point is projected to be about -27%.

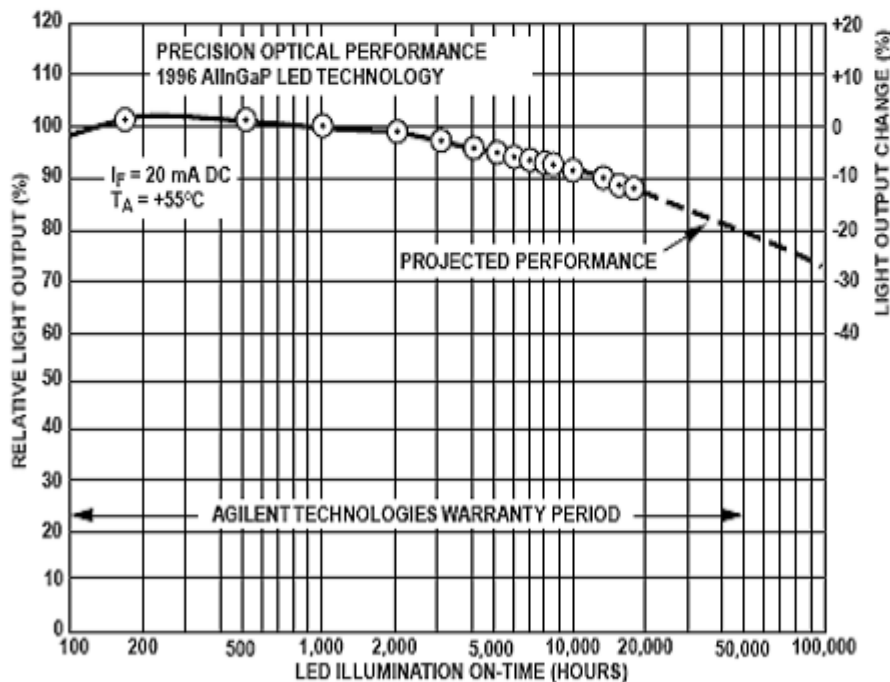


Figure 1. Projected Average Light Output Degradation Performance for Precision Optical Performance AlInGaP LED Lamps, based on 16,000 hour HTOL data