Nemko Worldwide Testing and Certification

Oslo, 2011-10-06

Svetel LLC
Engelsa Ave. 27
194156 St. Petersburg
Russia

Vår ref.:
Our ref.: 162682
Deres ref.:
Your ref.:

Power LED testing, 5000h report

Introduction

This is the final official report, giving the measured data before the ageing starts, after 100 hours , 2 000 hours ageing and 5000 hours ageing.

Short description of results:

The tested LEDs fulfils the requirements of Expemt Group according EN 62471

The objects

The measurement objects are 13 Power LED type SVL03P1F100, individually mounted on a substrate, however attached in a matrix. The LED where on arrival without any visible damage.

Setup and measurements

The matrix of mounted LEDs are not divided before measurement. The full plate is mounted on an active cooling flange, keeping the temperature on 25 °C. Each diode is driven at 340 mA from a commercial LED driving circuit. The LEDs are numbered 1.1 to 4.5 to identify the individual components

The project consists of two parts. First, one of the diodes are measured with respect to EN 62471, and second, the luminous flux of all 13 diodes are measured after 0h, 100h, 2000h and 5000h of ageing. During the ageing, the LEDs are held at 25 °C, and driven with 340 mA DC current.

Results on EN 62471
Measurements according to EN 62471 verifies that the object fulfill the requirements of
Exempt group

Results of luminous flux related to ageing
Measurement of the luminous flux of all 13 LEDs is presented in the table below. Difference corresponds to how much the luminous flux have changed between 100 and 2000 hours and between 100 and 5000 hours. The data at 100 hours is to take burn in effects into account.

Conclusions after 5000 hours:

At 5000 hours, the average degradation is 2,6% and the standard deviation of the degrade is 4,5 % of the value at 100 hours. The worst degradation is -11% and the largest improvement is + 5%