

Thermal and Mechanical Testing

Solder Point Temperature Analysis

Measuring case temperature of the LEDs used in a luminaire is useful for predicting lifetime. For more information on measuring case temperature, refer to Cree's Application note on Soldering & Handling.

A thermocouple (TC1) was attached to the case measurement point of the LED. A second thermocouple (TC2) was attached to the heat sink and a third (TC3) was used to monitor the ambient room temperature, which averaged 24°C. Chart 10 shows the measured temperatures over a period of approximately 2 hours. The measured case temperature was 66.3 °C.

T_c = 66.3°C



Figure 13: Thermal Testing Set-up