

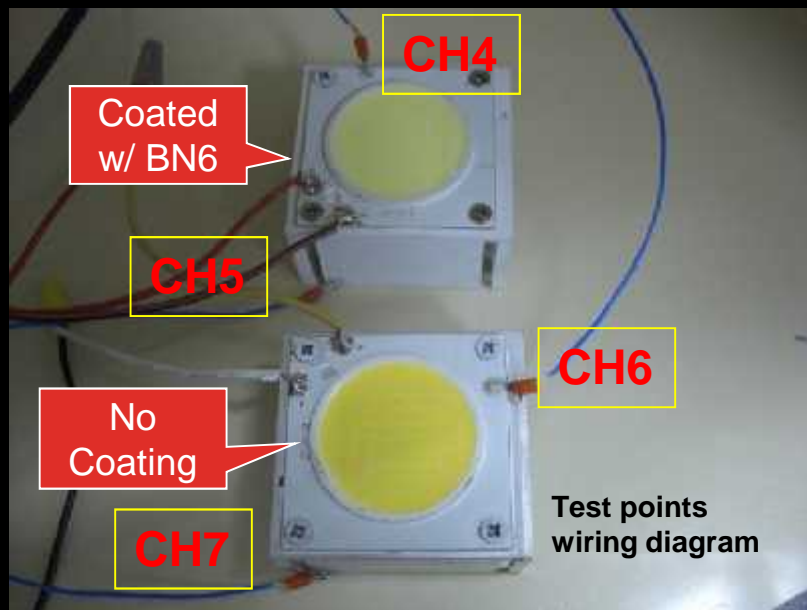


Thermal Management &
Lubrication Solutions

BN6 Thermal Conductive Coating Temperature Diffusion Report

HEAT DIFFUSION TEST USING LED WITH BN6 THERMAL CONDUCTIVE COATING

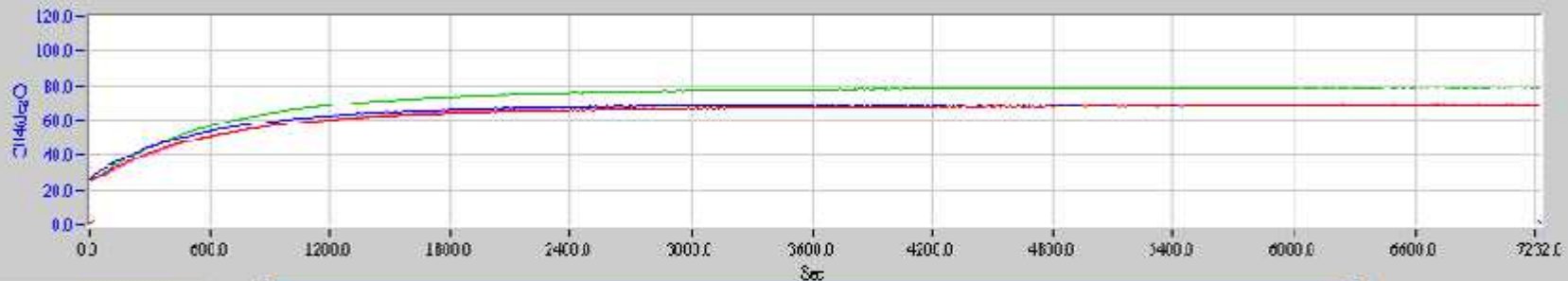
- **Objective:** By practical measurement of numerical verification on coating's ability to dissipate heat. Using the same volume, material quality and area of aluminum fin to confirm coating's radiation effect. 以實際測試數值驗證氮化硼散熱塗料在相同體積、材質、面積之鋁質鰭片的散熱效果
- **Environment:** Incubator 無加熱
- **Power Source:** 350mA DC Adapter，實際消耗熱能：10W
- **Heat Source:** Power Opto Co., LTD 10W LED 二顆
- **Test Duration:** 2 hours 點燈測試二小時



TEMPERATURE PROLIFERATION DIAGRAM OF CURVES 溫度擴散曲線圖

Capture File Name: D:\GL200A\DATA\2010-04-26\2010-04-26_13-15-33.gtd

Start Time: 2010/4/26 下午 01:15:33 Capture Time: 00day02hour00min32sec Sampling Interval: 500mSec



Auto Scale

**BN6 -
68.8 °C**

**BN6 -
67.9 °C**

**No BN6 -
78.3 °C**

**No BN6 -
69.2 °C**

Waveform Display Cursor

CH(ALL)	Annotation	Cursor A	Cursor B	A-E	Min	Max	Average	Peak	Unit
CH4		+58.8	+25.7	+43.1	+25.5	+69.0	+54.9	+43.5	degC
CH5		+57.0	+25.0	+42.0	+25.6	+68.0	+63.4	+42.4	degC
CH6		+78.3	+25.1	+53.2	+24.9	+78.4	+72.6	+53.5	degC
CH7		+59.2	+24.9	+44.3	+24.6	+69.5	+64.4	+44.9	degC

	Cursor A	Cursor B	A-E
Cursor Time	2:00:32.0	0:30:00.5	7232.5

TEST CONCLUSION 結論

- Under the same test conditions , BN6 thermal conductive coating Temperature on LED substrate dropped about 10%
- 在相同條件下測試得知BN6散熱塗料可讓LED基板的溫度下降約10%左右
- From the temperature profile observed. After spraying the fin, the temperature difference on the LED board is about 1 ° c which indicated the coating can be allow effective heat diffusion from the substrate to the temperature of the fin, thus allowing effective cooling

從溫度曲線可以觀察出噴塗後的鰭片溫度與LED基板溫度相差約1度，表示BN6散熱塗料可有效將溫度由基板擴散至鰭片處，進而有效散熱