INNOLUX 群創光電

DQA MTBF Report form

Judgment	Approve	Prepared
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The MTBF Report of G121XCE-L01 sample

Model：	G121XCE-L01	Reporter：	Hsiao-Yi-Fang	Date：	2023/12/22	Test Region：	RA Lab	Ambient Condition：	25℃

I. Test Condition：

Ta = 85℃，Test time = 500hrs，Sample Quantity = 3pcs

Ta = 50℃, Humidity =80% RH，Test time = 500hrs，Sample Quantity = 3pcs

Ta = 50℃, Humidity =80% RH，Test time = 240hrs，Sample Quantity = 6pcs

II. Judgment Rule：

$\hat{MTBF}_L$ **> 50,000 hours @ 90% Confidence Level (Exclude LED)**

III. Judgment Criteria：

Function OK.

IV. Calculating method：

$$\hat{MTBF}_L = \frac{2^* \sum (n * AF * t)}{\chi^2 ((2r+2) , 90\%CL)}$$

- n：Quantity of test samples
- AF：Acceleration Factor
- t：Test Hours
- χ^2：Chi-square function
- r：Failed Quantity

V. Test Result：

1. After RA test, the function of all samples is OK.
2. So, r= 0, χ^2 (2r+2)= 4.61 @ 90% confidence level.
3. RT = 25℃ and Test temperature = 85℃ So, AF = 64
4. RT = 25℃ and Test temperature = 50℃ So, AF = 5.73
5. $\hat{MTBF}$ = 2*{3*64*500+3*5.73*500+6*5.73*500}/4.61= 52835.14 > 50,000 hrs

VI. Conclusion：

The $\hat{MTBF}_L$ of G121XCE-L01 > 50,000 Hours (Exclude LED)

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