

TEST REPORT

Product name: Fixed LED lamp (strip lamp)

Product model: LLS-OP-W30A-L12-RDM(AL)

Test category: Commissioned test

Client: TPK OPTOELECTRONIC TECH CO., LTD

Tester: Li Weibiao

Auditor: Ou Peng

Report date: 17 March 2025

广东泰然实业有限公司
TPK OPTOELECTRONIC TECH CO., LTD

Test report

Test type	Temperature rise test	Inspector	Li Weibiao
Sample Name	Line lamp LLS-OP-W30A-L12-RDM(AL)		
Commission	TPK OPTOELECTRONIC TECH CO., LTD	Testing unit	TPK OPTOELECTRONIC TECH CO., LTD
Entrusting unit Address	Building 1-2, No. 10, Dacheng Road, Dongfeng Town, Zhongshan City	Address of the testing unit	Building 1-2, No. 10, Dacheng Road, Dongfeng Town, Zhongshan City
Sample Code	8.02.019.0111	Sample quantity	1
Test date	2025/3/14 17:00 to 2025/3/14 20:00		

Test background:

In order to evaluate the heat dissipation performance and stability of the linear lamp LLS-OP-W30A-L12-RDM(AL) in high-temperature environments, this temperature rise test was specially set up to examine its temperature performance in a 50 ° C incubator simulated high-temperature environment.

Test purpose:

To test the thermal reliability of the estimated line light LLS-OP-W30A-L12-RDM(AL) when it reaches thermal equilibrium in a 50 ° C incubator.

Testing equipment:

Supmea thermometer (SUP-R9616).... 1
JINGJIU variable AC source 1

Specification model:

LLS-OP-W30A-L12-RDM(AL) strip lamp,-W30A series,V1.0; L1220xW30xH79mm, anodized misty silver, opal PC cover; 60P,0.5W,RGBWW(3000K), Philips,5050; 100-277V(high PF value),DMX/RDM(10 segments),IP66, Jetlink 6 pins, exposed 0.15M; Maximum power 28W, with rotating stand, 5-year warranty, with individual package; With an additional 0.5m input cable to keep the last frame, customer-customized RDM information

Test items:

Sample line lamp LLS-OP-W30A-L12-RDM(AL) Each at thermal equilibrium in a 50 ° C incubator:

- ☐ Drive section key component temperature
- ☐ Temperature of key components of the light board
- ☐ Ambient temperature of the lamp body
- ☐ The temperature of the outer wall of the lamp

Test conclusion:

The linear lamp LLS-OP-W30A-L12-RDM(AL) was tested for temperature rise in a 50 ° C incubator. All test points of the sample were within the safe operating range, and the temperature performance was excellent. The temperature rise test was passed.

Chief Inspector: Li Weibiao

Signature: Date: 2025/3/17

Reviewer: Ou Peng

Signature: Date: 2025/3/17

Equipment and sample images:



Figure 1 Supmea thermometer Figure 2 JINGJIU variable AC source



Figure 3 Linear light LLS-OP-W30A-L12-RDM(AL)



Figure 4 The thermostat and the operating conditions of the lamp

Test steps:

Wear appropriate personal protective gear (such as insulating gloves), prepare and install the test instrument, and use thermocouple wire to connect the thermometer to the respective thermocouple of the two samples to be tested:

- 1) Drive key components of the section
- 2) Key components of the light board
- 3) The environment where the lamp body is located
- 4) Outer wall of the lamp

Connect the lamp, run the lamp at 220V in a 50 ° C incubator until it reaches a stable thermal equilibrium state (≥ 2 hours), and record its temperature value.

List of test items and reference criteria:

Reference criteria based on industry experience and specification sheet of electronic components (in a 50 ° C incubator) :

Test items	Criteria for judgment
Lamp beads chip	Pin temperature + thermal resistance * power <85 ° C
Aluminum substrate (lamp plate)	< 70 °C
Lamp body	< 65 °C
Inductance	< 100 °C
Capacitor	< 85 °C
Control chip determination	< 75 °C
Voltage stabilizer	< 75 °C
DC-DC	< 75 °C
Driver chip	< 90 °C
Power Tc point	<80 ° C (3-year warranty) <70°C (5-year warranty)
Freewheeling diode	< 90 °C
Output diode	< 90 °C
Schottky diode	< 90 °C
Transformer	< 100 °C
MOSFET	< 90 °C

Table 1 Criteria for temperature determination

Test data:

The line lamp LLS-OP-W30A-L12-RDM(AL) was tested under the condition of running in a 50 ° C incubator to assess the temperature of the lamp, and the test data are shown in the table below.

Table 2 Temperature rise test data

Test points			220V,50°C	
			Temperature (°C)	Whether qualified
Test conditions				
Light board - Drive section	CH1	U5:UCS7804(<85°C)	68.8	√
	CH2	U1:UCS7804(<85°C)	65.9	√
	CH3	LED30(<80°C)	64.5	√
	CH4	LED6(<80°C)	65.1	√
	CH5	Light board 1(<80 ° C)	60.9	√
	CH6	Light board 2(<80 ° C)	68.1	√
	CH7	Diode (<90 ° C)	55.8	√
Lamp body part	CH8	Lamp body (<65 ° C)	55.1	√
Thermostatic box	CH9	Internal temperature	48.6	√

Table 3 Test the power before and after

Test the power before and after	Total power of the two lamps
Before the test	28.2 W
After testing	28.1 W
The difference before and after the test	0.1 W

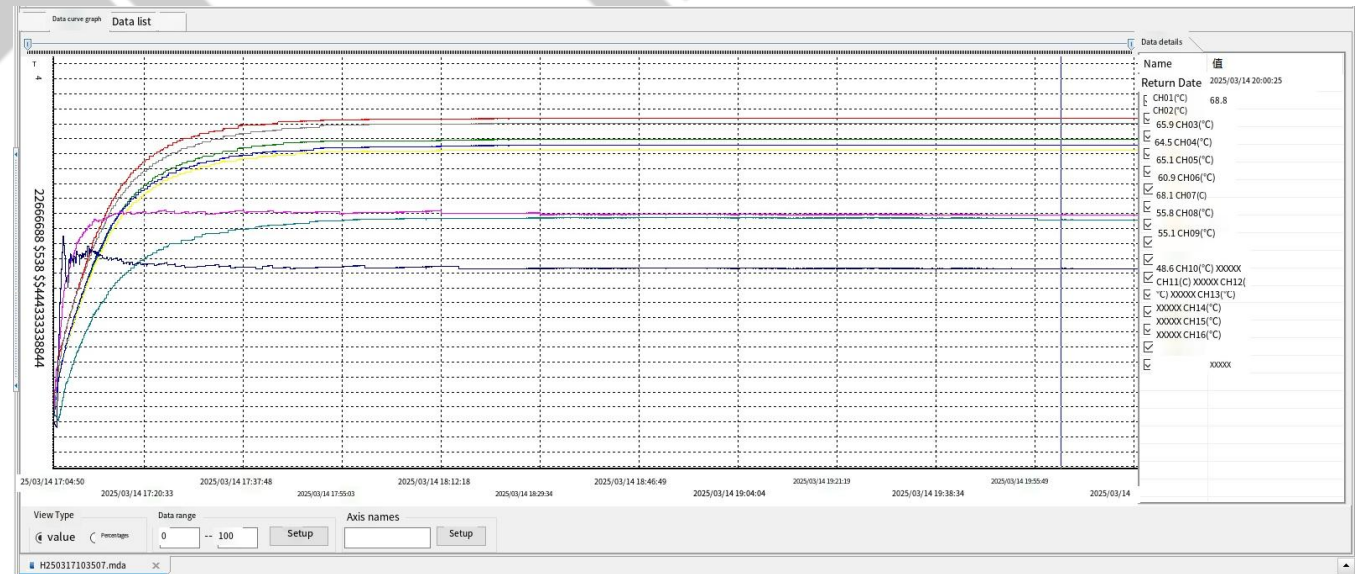


Figure 5 Thermometer: Temperature curve at each test point

Data analysis:

Based on the above data, the temperature performance of the linear lamp LLS-OP-W30A-L12-RDM(AL) when operating to thermal equilibrium in a constant temperature box with an input voltage of 220V and an ambient temperature of 50 ° C is analyzed as follows:

- The power difference before and after the test was only 0.1W, and both were within the error range of the nominal power;
- The temperature distribution in the driver - lamp board section is uniform, with the maximum temperature not exceeding 68.8 ° C (driver IC:U5). The average temperature of the PCB board including on-board components is 64.16 ° C;

During the test, the temperature at all test points of the lamp sample was within the safe operating range of the lamp, and the temperature rise test passed.

The results of this test are only responsible for the samples.