Laboratory
Test report

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FORM L-54 Edition 01 – Revision 02 - Date: 14/11/2019

Thermal Test LED

Digitally signed by Ionel Igor
Date: 2021.06.06 14:54:12 EEST
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General information

Subject : IZYLUM 3 - 60 led's LH351C - OSRAM 100W driver 550mA - Nema - CL II

Asked by : SZÜGYI János Péter
Created on : 15/11/2019
Started on : 19/11/2019
Test number : D191063
Reference norm : IEC/EN 60598-1; 60598-2-3; 60598-2-5 Standards
Sample(s) : E190757
Folder : P-F19086

Test conditions

Luminaire : IZYLUM 3

Number of LED : 60
LED : Samsung LH351C
Driver : Optotronic OT100/120-277/800 2DIM LT2 P / 00-14-566
Number of driver(s) : 1
Driver info : Tc (max) 85°C
Driver current (mA) : 550
SPD : Izyhub full control Fuse CLII 01-01-810
Junction Temperature measurement method : Junction temperature measurement by base temperature measurement and electrical measurement.T°j =T°b + Rjb x Pled

Operator : KOY Fiston

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Conclusion

Informative

Conclusion :

ΔTs < 80°C no risk of solder crack

Ta: 55°C limited by driver; according IEC 60598-2-3 and IEC 60598-2-5 (outdoor use only)
Ta: 45°C limited by driver; indoor use and UL standard
Tq: 30°C limited by driver; according IEC 62722-2-1

Tq given for 100 khrs of lifetime

Validated by :

GHYSENS Gilles

Duplicate to : SZÜGYI János Péter, HORVÁTH Csaba, BEDŐ Péter, BOS Peter

LAB : 27/11/2019

Test(s) details

Test(s)

Name	Description	Result
Test @ 550mA		Informative

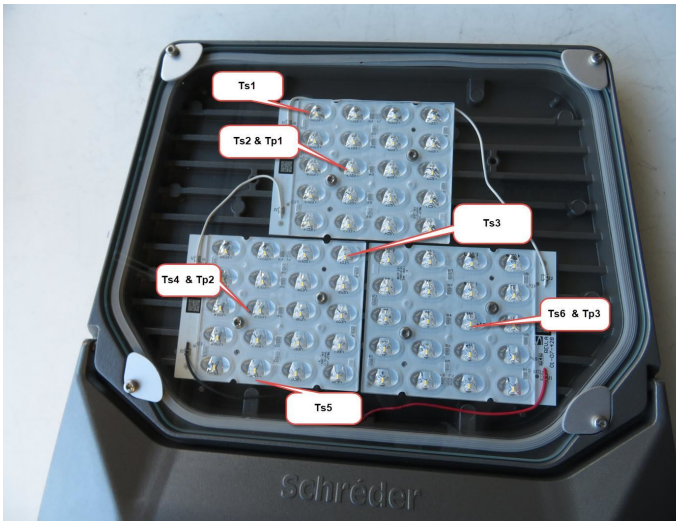
Test @ 550mA

Result(s)

	Ts1	Ts2 & Tp1	Ts3	Ts4 & Tp2	Ts5	Ts6 & Tp3	Tc driver	Ta SPD	Ta Body
T° limite							85 °C	70 °C	90 °C
Junction T°	71.8 °C	72.2 °C	72.9 °C	72.0 °C	71.5 °C	72.9 °C			
Thermocouple T°	67.2 °C	67.6 °C	68.2 °C	67.3 °C	66.9 °C	68.3 °C	64.2 °C	37.1 °C	38.1 °C
Room	24.7 °C	24.7 °C	24.7 °C	24.7 °C	24.7 °C	24.7 °C	24.7 °C	24.7 °C	24.7 °C
E led	2.82V	2.82V	2.82V	2.82V	2.82V	2.82V			
I led	0.553A	0.553A	0.553A	0.553A	0.553A	0.553A			
P led	1.56W	1.56W	1.56W	1.56W	1.56W	1.56W			
Rth jonction-base	3.0 °C	3.0 °C	3.0 °C	3.0 °C	3.0 °C	3.0 °C			
Heating							39.5 K	12.4 K	13.4 K
Δ Ts	42.5 K	42.9 K	43.5 K	42.6 K	42.2 K	43.6 K			

Primary EM		Secondary EM dr1	
U	230.0V	U	169.3V
I	0.460A	I	0.553A
P	103.6 W	P	93.6 W
PF	0.979		
Efficiency	90%		

Annex(es)



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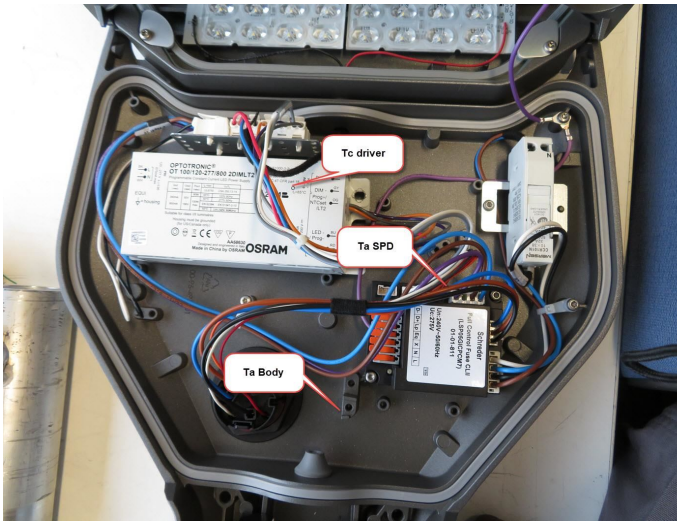

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Test room temperature (°C) : **24.7**

Measurement equipment :

Keithley with thermocouples type K (E097)
Norma 4000 (E110)
APT (E102)

Quantities measured :

Qualification of the thermal limits and measurement of the electrical behavior of a luminaire according to PT-S-07

Uncertainties :

Statement of uncertainties (K=2, 95% of confidence level):
Temperature: 0,6 °K
Voltage (AC): 0,33%
Current (AC): 0,33 %
Power (AC): 0,27%
Voltage (DC): 0,3 %
Current (DC): 0,3%
Power (DC): 0,23%
Anemometer: ± 0,27 m/s

Decision rules :

No pass/fail criteria applied on electrical measurements

Pass/fail criteria on thermal qualification

At the announced Ta, no component is above its maximum limit of operation reduced by the uncertainty on the temperature measurement: pass

At the announced Ta, at least 1 component is above its maximum limit of operation augmented by the uncertainty on the temperature measurement: fail

At the announced Ta, at least 1 component is at its maximum limit of operation ± the uncertainty on the temperature measurement and no other component is above its maximum limit of operation augmented by the uncertainty on the temperature measurement: pass with remark

According to IEC 60598-2-3 and IEC 60598-2-5 Standards, the maximum limit of every component can be augmented by 10 K provided that the luminaire is intended for outdoor use only.

At the announced Tq, no component is above its selected performance limit of operation reduced by the uncertainty on the temperature measurement: pass

At the announced Tq, at least 1 component is above its selected performance limit of operation augmented by the uncertainty on the temperature measurement: fail

At the announced Tq, at least 1 component is at its selected performance limit of operation ± the uncertainty on the temperature measurement and no other component is above its selected performance limit of operation augmented by the uncertainty on the temperature measurement: pass with remark

According to IEC 62722-2-1, the selected performance limit cannot be augmented by 10 K even if the luminaire is intended for outdoor use.

Any Ta/Tq defined value will be rounded down to the nearest multiple of 5.

End of test report :
