Laboratory
Test report

226-TEST

NBN EN ISO/IEC 17025 :2017

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

Thermal Test LED

General information

Subject : IZYLUM 2- 40 LH351C - Philips 110W - 620mA - Nema - Class II

Asked by : SZÜGYI János Péter
Created on : 28/02/2020
Started on : 03/03/2020
Test number : D200336
Reference norm : IEC/EN 60598-1; 60598-2-3; 60598-2-5 Standards
Sample(s) : E190879
Folder : P-F19085

Test conditions

Luminaire : IZYLUM 2

Number of LED : 40
LED : Samsung LH351C
Driver : Xi LP 110W 0.2-0.7A S1 230V C133 sXt / 00-70-392
Number of driver(s) : 1
Driver info : Tc max 90°C
Driver current (mA) : 620
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: 50°C limited by driver; indoor use and UL standard
Tq: 35°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, HEYMANS Tom, LÁMFALUSI Ferenc, HORVÁTH Csaba, BEDŐ Péter, BOS Peter

LAB : 24/03/2020

Test(s) details

Test(s)

Name	Description	Result
Test @ 620mA		Informative

Test @ 620mA

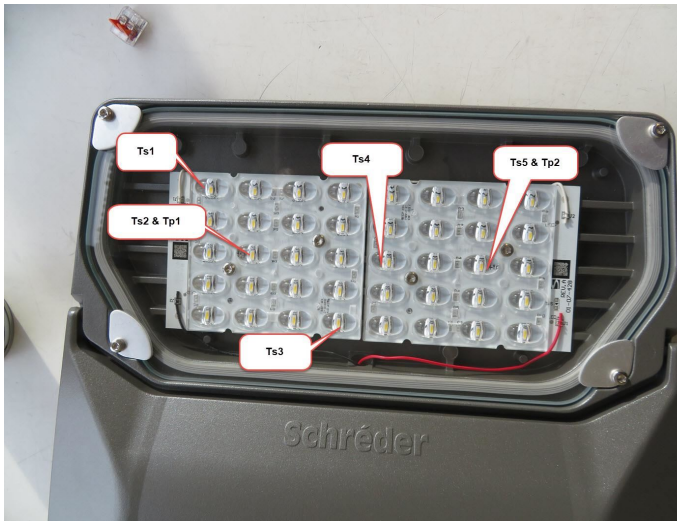
Result(s)

	Ts1	Ts2 & Tp1	Ts3	Ts4	Ts5& Tp2	Tc driver	Ta SPD	Ta Body
T° limite						90 °C	80 °C	90 °C
Junction T°	77.6 °C	78.7 °C	79.9 °C	79.3 °C	79.2 °C			
Thermocouple T°	67.0 °C	68.1 °C	69.3 °C	68.7 °C	68.6 °C	66.1 °C	38.7 °C	37.7 °C
Room	26.7 °C	26.7 °C	26.7 °C	26.7 °C	26.7 °C	26.7 °C	26.7 °C	26.7 °C
E led	5.70V	5.70V	5.70V	5.70V	5.70V			
I led	0.618A	0.618A	0.618A	0.618A	0.618A			
P led	3.52W	3.52W	3.52W	3.52W	3.52W			
Rth jonction-base	3.0 °C	3.0 °C	3.0 °C	3.0 °C	3.0 °C			
Heating						39.4 K	12.0 K	11.0 K
Δ Ts	40.3 K	41.4 K	42.6 K					

Solder point temperature used as the image of the lens temperature

Primary EM		Secondary EM dr1	
U	230.0V	U	114.1V
I	0.344A	I	0.618A
P	77.4 W	P	70.5 W
PF	0.976		
Efficiency	91%		

Annex(es)



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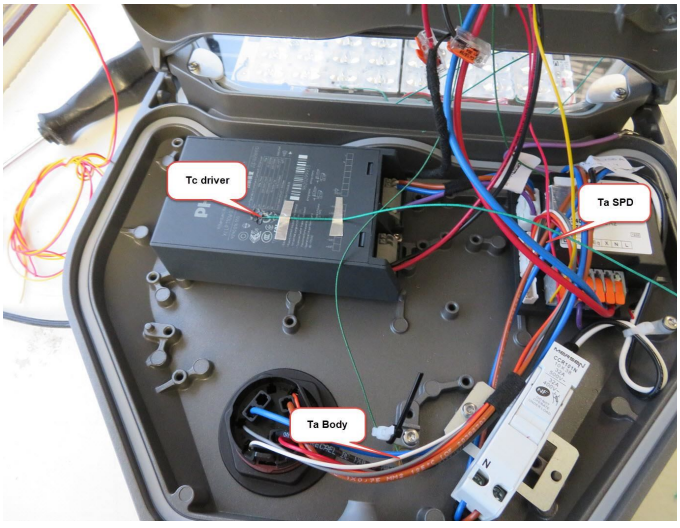

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Test room temperature (°C) :

26.7

Measurement equipment :

Keithley with thermocouples type K (E124)
Norma 4000 (E074)
APT (E113)

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

No pass/fail criteria applied on thermal measurements when performed at 25°C (+/- 5°C), the Ta/Tq values are calculated according GDE-POL-001.

Pass/fail criteria on thermal qualification (test performed at announced Ta or Tq)
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.

In any case, test at 25°C or test at Ta or Tq, if delta Ts is above the recommended value of the GDE-POL-001, the test is failed.

End of test report :
