

Laboratory Test report



713-TEST
NBN EN ISO/IEC 17025 :2017

Schröder
Experts in lightability™

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FORM L-54 V2

Thermal Test LED

General information

Subject : IZYLUM LT 3 - 144 Seoul 5050 - 730mA - MOSO_U6_200W - Nema socket

Asked by : NAGY Ádám

Created on : 06/06/2023

Started on : 07/06/2023

Test number : D230643

Reference norm : IEC/EN 60598-1 Ed9 (2021) + A11 (2022); 60598-2-3 Ed3 (2002) +A1 (2011); 60598-2-5 Ed3 (2015)

Sample(s) : E230365

Test conditions

Luminaire : IZYLUM LT 3

Number of LED : 144

LED : Seoul 5050

Driver : DRIVER_MOSO_U6_200W_105-1,050mA_220-240V_DALI_C170_ / 02-04-949

Number of driver(s) : 1

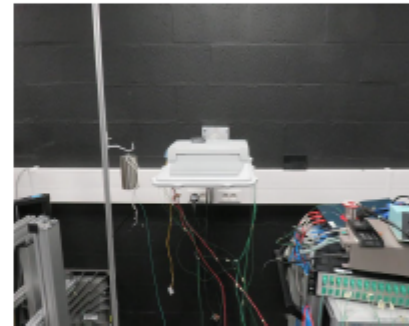
Driver current (mA) : 730

Control system : NEMA

SPD : VS SPC3/230/10K/i Tc 80°C

Testing facility : BER - SCHREDER

Operator : CLOSSET Frédéric



lum

Conclusion



Informative

Conclusion :

$\Delta T_s < 80^\circ\text{C}$ no risk of solder crack

Ta: 55°C limited by lenses & driver according IEC 60598-2-3 and IEC 60598-2-5 (outdoor use only)

Ta: 45°C limited by lenses & driver indoor use and UL standard

Tq: 30°C limited by lenses & driver according IEC 62722-2-1

Tq given for 100 khrs of lifetime

Validated by :
LERHO Xavier

Duplicate to : RACANELLI Frank, SZÜGYI János Péter,
ESPEJON Erwin, NAGY Ádám
LAB : 13/06/2023

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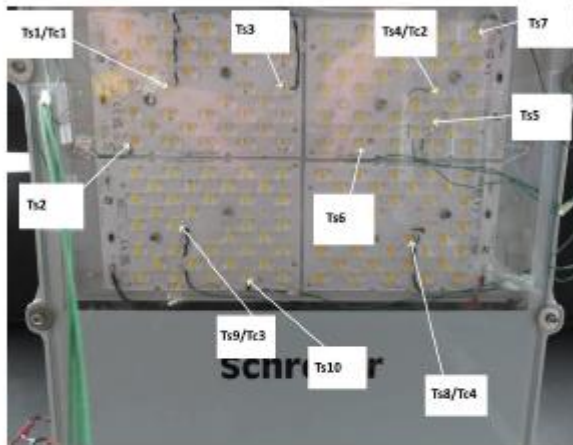
Test(s) details

Test(s)

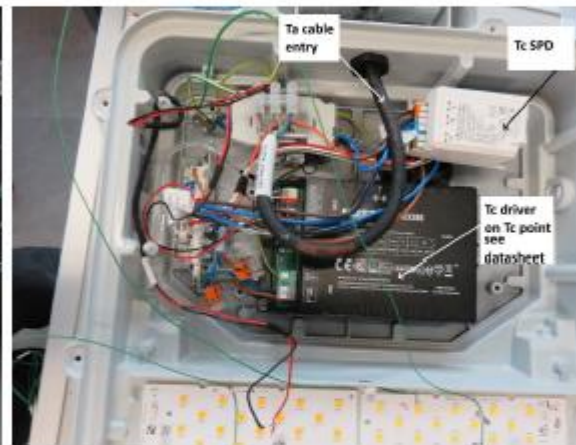
Name	Description	Verdict
Sensors positions	Disposition of the thermocouples on the DUT.	Informative
Test @ 730mA	Test according section 12.4 of IEC 60598-1. The DUT is driven until all thermocouples reach thermal stabilization (i.e. variation = 1K/h). Evaluation of the harmonics behaviour according IEC 61000-3-2 - Not covered by the laboratory's accreditation.	Success

Sensors positions

Detail(s)



pos_thermo1



pos_thermo2

Test @ 730mA

Verdict(s)

	Ts1	Ts2	Ts3	Ts4	Ts5	Ts6	Ts7	Ts8	Ts9	Ts10	Driver	SPD	Ta Cable entry
Limit Ta	99.0 °C	99.0 °C	99.0 °C	99.0 °C	99.0 °C	99.0 °C	99.0 °C	99.0 °C	99.0 °C	99.0 °C	90.0 °C	80.0 °C	90.0 °C
Limit Tq	85.0 °C	85.0 °C	85.0 °C	85.0 °C	85.0 °C	85.0 °C	85.0 °C	85.0 °C	85.0 °C	85.0 °C	75.0 °C	80.0 °C	90.0 °C
Thermocouple T ¹	73.3 °C	72.7 °C	78.1 °C	72.5 °C	73.6 °C	76.3 °C	69.3 °C	72.0 °C	69.6 °C	73.1 °C	66.9 °C	34.2 °C	34.3 °C
Room	25.8 °C	25.8 °C	25.8 °C	25.8 °C	25.8 °C	25.8 °C	25.8 °C	25.8 °C	25.8 °C	25.8 °C	25.8 °C	25.8 °C	25.8 °C
E Led	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V			
I Led	0.244 A	0.244 A	0.244 A	0.244 A	0.244 A	0.244 A	0.244 A	0.244 A	0.244 A	0.244 A			
P Led	1.3 W	1.3 W	1.3 W	1.3 W	1.3 W	1.3 W	1.3 W	1.3 W	1.3 W	1.3 W			
Heating	47.5 °C	46.9 °C	52.3 °C	46.7 °C	47.8 °C	50.5 °C	43.5 °C	46.2 °C	43.8 °C	47.3 °C	41.1 °C	8.4 °C	8.5 °C
Ta indoor	51.5 °C	52.1 °C	46.7 °C	52.3 °C	51.2 °C	48.5 °C	55.5 °C	52.8 °C	55.2 °C	51.7 °C	48.9 °C	71.6 °C	81.5 °C
Tq	37.5 °C	38.1 °C	32.7 °C	38.3 °C	37.2 °C	34.5 °C	41.5 °C	38.8 °C	41.2 °C	37.7 °C	33.9 °C	71.6 °C	81.5 °C
Solder point temperature used as the image of the lens temperature													
Primary EM	Secondary Em Dr												
U	229.9 V	U	265.1 V										
I	0.905 A	I	0.732 A										
P	204.4 W	P	194.0 W										
PF	0.982												
Efficiency	94.9%												
THD	5.8%												
Harmonics - 100%	PASS												

Test room temperature (°C) :

25.8

Measurement equipment :

Keithley with thermocouples type K (E097)

Norma 4000 (E116)

APT (E119)

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: 1,26 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 :

Pass/fail criteria for individual test statement of conformity (Verdict):

No pass/fail criteria applied on electrical measurements, except on harmonics where the criteria of IEC 61000-3-2 are applied (the harmonics are not covered by the laboratory's accreditation).

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 : success

At the announced Ta, at least 1 component is above its maximum limit of operation : fail

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: success

At the announced Tq, at least 1 component is above its selected performance limit of operation : fail

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.

Pass/fail criteria for the test report statement of conformity (Conclusion):

At least one of the individual test statements of conformity (Verdict) is successful: success, the highest achieved Ta/Tq is reported

Otherwise: fail

End of accredited report :
