



NBN EN ISO/IEC 17025 :2017



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FORM L-54 Edition 01 – Revision 04 – Date : 21/04/2021

# Thermal Test LED

## General information

<u>Subject</u> : VOLTANA EVO 1 - 8 Oslon Square Giant - Meanwell 40W - 1400mA <u>Asked by</u> : BEDŐ Péter

<u>Created on</u> : 19/04/2021

<u>Started on</u> : 19/04/2021

<u>Test number</u> : D210385

<u>Reference norm</u> : IEC/EN 60598-1; 60598-2-3; 60598-2-5 Standards

Sample(s) : E210200

*Folder* : P-F21002

### Test conditions

Luminaire : VOLTANA EVO 1

<u>Number of LED</u> : 8

LED : Osram OSLON SQUARE GIANT

<u>Driver</u> : DRIVER\_MEANWELL\_PLD\_40W\_1400mA\_220-277V\_NONE\_.\_. / 00-73-737

<u>Number of driver(s)</u> : 1

Driver current (mA) : 1400

#### **Operator** : CLOSSET Frédérick



lum

### Conclusion

Informative

<u>Conclusion</u> :

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: 20°C limited by driver; according IEC 62722-2-1

LAB: 23/04/2021

Tq given for 100 khrs of lifetime

Validated by :

**GHYSENS** Gilles

The publication of this report in another form than the original one is not allowed without agreement of the laboratory. This report concerns type tests on one or a series of specimens. All information but the measurements results are provided by the customer.

Duplicate to : SZÜGYI János Péter, BEDŐ Péter

D210385

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# Test(s) details

## Test(s)

Name	Description	Verdict
Sensors positions	Disposition of the thermocouples on the DUT.	Informative
Test @ 1400mA	Test according section 12.4 of IEC 60598-1. The DUT is driven until all thermocouples reach thermal stabilization (i.e. variation = 1K/h).	Informative

## Sensors positions

Annex(es)





pos\_thermo1

pos\_thermo2

#### <u>Test @ 1400mA</u>

#### Verdict(s)

	Ts1	Ts2	Driver1	Ta Cable entry1	
Limit Ta	110,0 °C	110,0 °C	90,0 °C	90,0 °C	
Limit Tq	90,0 °C	90,0 °C	65,0 °C	90,0 °C	
Thermocouple T°	74,5 °C	68,2 °C	66,9 °C	39,3 °C	
Room	24,1 °C	24,1 °C	24,1 °C	24,1 °C	
E Led	3,0 V	3,0 V			
l Led	1,406 A	1,406 A			
P Led	4,2 W	4,2 W			
Heating	50,4 °C	44,1 °C	42,8 °C	15,2 °C	
Ta Indoor	59,6 °C	65,9 °C	47,2 °C	74,8 °C	
Tq	39,6 °C	45,9 °C	22,2 °C	74,8 °C	
Solder point temperature used as the image of the lens temperature					
Primary EM		Secondary Em Dr1			
U	230,0 V	U	24,2 V		
I	0,176 A	I	1,406 A		
Р	39,2 W	Р	34,0 W		
PF	0,967				
Efficiency	86,5%				

#### <u>Test room temperature (°C)</u> :

23.7

Measurement equipment :

Keithley with thermocouples type K (E127) 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

#### <u>Uncertainties</u> :

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 accredited report :