

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

# Tightness test

## General information

Subject : IZYLUM 2 - 40 LH351C - Philips FP 110W - 700mA - Nema - CL I (N#3)

Asked by : SZÜGYI János Péter

Created on : 10/12/2019

Started on : 17/12/2019

Test number : D191141

Reference norm : IEC/EN 60598-1 Standard

Sample(s) : E190875

Folder : P-F19085

## Test conditions

Luminaire : IZYLUM 2

Number of LED : 40

LED : Samsung LH351C

Driver current (mA) : 700

Protector Material : Glass Extra Clear

Protector Shape : Flat

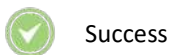
Preconditioning time (minutes) : 98

Operator : KOY Fiston



IMG\_5588

## Conclusion



Success

Conclusion :

IP66 granted

Validated by :  
Maghe Laurent



Duplicate to : SZÜGYI János Péter, HEYMANS Tom, LÁMFALUSI Ferenc,  
HORVÁTH Csaba, BEDŐ Péter, BOS Peter

LAB : 18/12/2019

**D191141**

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## Test(s) details

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### Test(s)

Name	Description	Result
IP6X	<ul style="list-style-type: none"><li>- Luminaire switched ON until stable T°</li><li>- Talcum in suspension (blowing ON)</li><li>- After 1', luminaire OFF</li><li>- Talcum for 3 hours</li></ul>	Success
IPX6	<ul style="list-style-type: none"><li>- Luminaire switched ON until stable T°</li><li>- Luminaire switched OFF and immediately sprayed with water jet</li><li>- Hose diam. 12,5 mm</li><li>- Water flow: 100 l/min</li><li>- Spraying distance: 3 m</li><li>- Duration of test: 3 minutes</li></ul>	Success

### IP6X

#### Result(s)



Test succeeded no Talcum ingress in the optical and auxiliary part.

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### IPX6

#### Result(s)



Test succeeded no water ingress in the optical and auxiliary part.

**Test room temperature (°C) :**

IP6X

22.3°C

IPX6

22.5°C

**Measurement equipment :**

IPX6

Rotating table (A001/2)

Chronometer (A043/5)

Thermometer (A039/1)

Flowmeter (A001/9)

IPx5 nozzle (A001/4)

IPx6 nozzle (A001/5)

Caliper (M054/M055)

IP6X

Talcum chamber (A003)

Thermometer (A039/2)

Chronometer (A043/5)

Caliper (M054/M055)

**Quantities measured :**

Verification of water/dust ingress within a luminaire enclosure according to

For IP2X: PT-S-14

For IP3X/4X: PT-S-15

For IP5X/6X: PT-S-06

For IPX3/X4: PT-S-01

For IPX5/X6: PT-S-08

For IPX7/X8: PT-S-09

**Uncertainties :**

Statement of uncertainties (K=2, 95% of confidence level):

Time: 0,35 seconds per 10 minutes

Temperature: 0,6 °K

Calipers: 0,005 mm

Measuring tape: ± 1,13 mm

Dynamometric key :

From 0.5 to 2.5 Nm : 0,15 Nm

From 2.5 to 5 Nm : 0,22 Nm

From 5 to 25 Nm : 0,83 Nm

From 25 to 60 Nm : 2,73 Nm

From 60 to 100 Nm : 3,55 Nm

For solid ingress test:

IP2X:

Probe dimensions: ± 0,6 mm

Applied force: ± 0,4 N

IP3X:

Probe dimensions: ± 0,3 mm

Applied force: ± 0,13 N

IP4X:

Probe dimensions: ± 0,1 mm

Applied force: ± 0,11 N

**IP5X/6X**

Test duration (talcum suspension time):  $\pm 3$  seconds

Talcum mass: 0,02 %

For liquid ingress test:

**IPX3/X4**

Table rotation:  $\pm 6$  sec/rotation

Arms Rotation angle:  $\pm 3^\circ$

Water flow:  $\pm 4$  %

**IPX5/X6**

Table rotation:  $\pm 6$  sec/rotation

Water flow:  $\pm 4$  %

Test Distance: +0 / -50 cm

**IPX7/X8**

Test depth: +10 cm / -0 cm

**Decision rules :**

Pass/fail criteria

For solid ingress test:

**IP2X:**

If contact possible with live parts: fail

Otherwise: pass

**IP3X/4X:**

For luminaires without draining holes, nor ventilation slots for forced cooling, penetration of the test probe in the enclosure: fail

For luminaires with draining holes, or ventilation slots for forced cooling, if contact possible with live part: fail

Otherwise: pass

**IP5X/6X**

By visual inspection:

If possible hazard due to presence of conductive dust: fail

If no possible hazard due to the presence of conductive dust: IP5X granted

No presence of talcum: IP6X granted

For liquid ingress test:

**IPX3/X4/X5/X6:**

By visual inspection:

If possible hazard due to presence of water: fail

If no possible hazard due to the presence of water and no efficient way to evacuate the water: fail

If no possible hazard due to the presence of water and an efficient way to evacuate the water: pass

No presence of water: pass

**IPX7/X8:**

By visual inspection:

Presence of water: fail

No presence of water: pass

**End of test report :**

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