

Thermal Test LED

General information

Subject : IZYLUM 3 - 80 LH351C - LG 165W - 670mA - Nema

Asked by : SZÜGYI János Péter

Created on : 20/04/2020

Started on : 27/04/2020

Test number : D200552

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

Sample(s) : E190755

Folder : P-F19086

Test conditions

Luminaire : IZYLUM 3

Number of LED : 80

LED : Samsung LH351C

Driver : LG 165W 200-700mA Prog Modular EU / 00-36-984

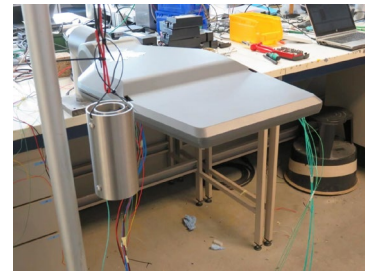
Number of driver(s) : 1

Driver info : Tc (max) 80°C tc life 70°C

Driver current (mA) : 670

SPD : Izyhub full control fuse CLII 01-01-810

Operator : CLOSSET Frédéric



pos

Conclusion



Informative

Conclusion :

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

Ta: 40°C limited by lenses; according IEC 60598-2-3 and IEC 60598-2-5 (outdoor use only)

Ta: 30°C limited by lenses; indoor use and UL standard

Tq: 15°C limited by lenses; according IEC 62722-2-1

Tq given for 100 khrs of lifetime

Validated by :

GHYSENS Gilles

Duplicate to : SZÜGYI János Péter, LÁMFALUSI Ferenc,

HORVÁTH Csaba, BEDŐ Péter, BOS Peter

LAB : 06/05/2020

D200552

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Test(s) details

Test(s)

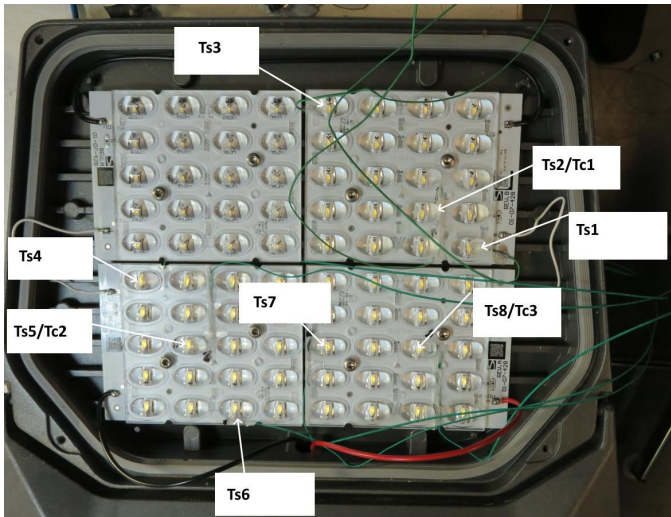
Name	Description	Result
Test @ 670mA		Informative

Test @ 670mA

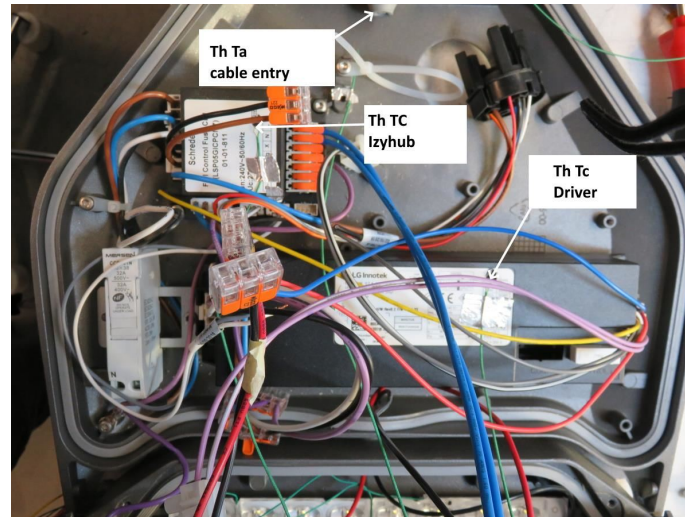
Result(s)

	Ts1	Ts2	Ts3	Ts4	Ts5	Ts6	Ts7	Ts8	Tc driver	Tc lzyhub	Ta cable
Limit Ta	99 °C	99 °C	99 °C	99 °C	99 °C	99 °C	99 °C	99 °C	80 °C	80 °C	90 °C
Limit Tq	85 °C	85 °C	85 °C	85 °C	85 °C	85 °C	85 °C	85 °C	70 °C	80 °C	90 °C
Thermocouple T°	94.2 °C	90.9 °C	90.5 °C	85.6 °C	86.1 °C	88.6 °C	88.5 °C	87.5 °C	61.8 °C	39.6 °C	40.5 °C
Room	25.6 °C	25.6 °C	25.6 °C	25.6 °C	25.6 °C	25.6 °C	25.6 °C	25.6 °C	25.6 °C	25.6 °C	25.6 °C
E led	2.83V	2.83V	2.83V	2.83V	2.83V	2.83V	2.83V	2.83V			
I led	0.668A	0.668A	0.668A	0.668A	0.668A	0.668A	0.668A	0.668A			
P led	1.89W	1.89W	1.89W	1.89W	1.89W	1.89W	1.89W	1.89W			
Heating	68.6 K	65.3 K	64.9 K	60.0 K	60.5 K	63.0 K	62.9 K	61.9 K	36.2 K	14.0 K	14.9 K
Ta indoor	30.4 °C	33.7 °C	34.1 °C	39.0 °C	38.5 °C	36.0 °C	36.1 °C	37.1 °C	43.8 °C	66.0 °C	75.1 °C
Tq	16.4 °C	19.7 °C	20.1 °C	25.0 °C	24.5 °C	22.0 °C	22.1 °C	23.1 °C	33.8 °C	66.0 °C	75.1 °C
Primary EM	Secondary EM dr1										
U	229.7V	U	226.0V								
I	0.696A	I	0.668A								
P	159.1 W	P	150.9 W								
PF	0.995										
Efficiency	95%										

Annex(es)



pos_thermo1



pos_thermo2

Test room temperature (°C) :

25.6

Measurement equipment :

Keithley with thermocouples type K (E082)

Norma 4000 (E068)

APT (E135)

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 :

Mechanical impact resistance test

General information

Subject : IZYLUM 3 - 60 led's LH351C - Philips FP 150W driver 700mA - CL II

Asked by : SZÜGYI János Péter

Created on : 25/10/2019

Validated on : 30/10/2019

Test number : D190995

Reference norm : IEC/EN 60598-1 & 62696 Standards

Sample(s) : E190754

Folder : P-F19086

Test conditions

Luminaire : IZYLUM 3

Quantity of sample under test : 5

Protector Material : Glass Extra Clear

Protector Shape : Flat

Serigraphy : None

Protector Thickness (mm) : 5

Method of test :

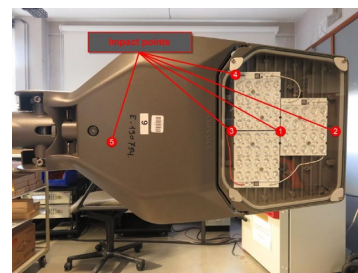
At pendulum hammer

5 impact points distributed on luminaire

One impact on each point


2 supplementary impacts on the most fragile point

Operator : Philippe Léonard



IMG_5355a

Conclusion

 Success

Conclusion :

IK09 passed.

Validated by :
GHYSENS Gilles

Duplicate to : SZÜGYI János Péter, HORVÁTH Csaba, BEDŐ Péter, BOS Peter
LAB : 05/11/2019

//CR190995

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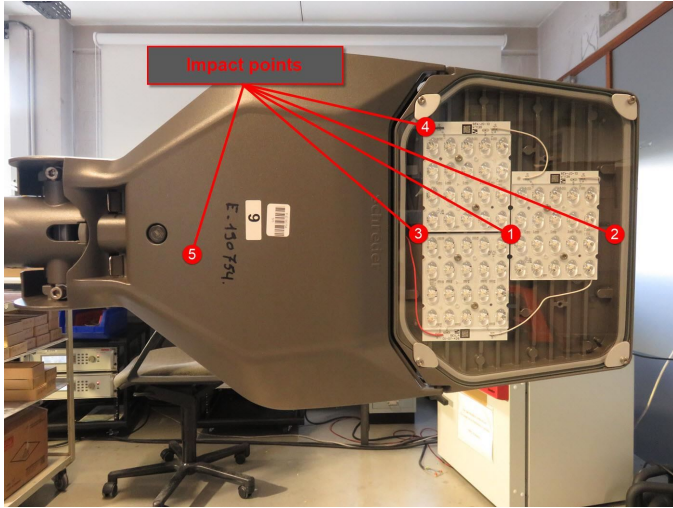


Test(s) details

Test(s)

Name	Description	Result
IK09	Impact energy: 10 joules Hammer weight: 5 kg Height of fall: 20 cm	Success

Impact points



IK09

Annex(es)

TESTED
NOT TESTED

IK 09	Impact	1			2			3			4			5		
Sample	Shot	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1		✓			✓			✓			✓			✓	✓	✓
2		✓			✓			✓			✓			✓	✓	✓
3		✓			✓			✓			✓			✓	✓	✓
4		✓			✓			✓			✓			✓	✓	✓
5		✓			✓			✓			✓			✓	✓	✓

IK09_Izylum_3

Test room temperature (°C) : 25

Measurement equipment :

Pendulum hammer with chariot (M062)

Thermometer (A039/3)

Electronic scale 120kg (M057)

Dynamometric key (M059)

Quantities measured:

For IK 04/05/06: Verification of the mechanical strength of a luminaire according to PT-S-13

For IK07/08/09/10/10+: Verification of the mechanical strength of a luminaire according to PT-S-05

Uncertainties:

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

Temperature: 0,6 °K

Mass: 0,25 %

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 IK 04/05/06, Impact energy: $\pm 10\%$

For IK07/08/09/10/10+, Impact energy: $\pm 1\%$

Decision rules

Pass/fail criteria according to GDE-GUI-003

By visual inspection (or other means if necessary):

Luminaire shows dangerous behavior: fail

Luminaire shows no dangerous behavior: pass

When several luminaires are tested, 4 out of 5 samples need to show positive result for compliance of the batch

End of test report-----

Test de rezistență la impact

Informații generale

Subiect : IZYLUM 3 - 60 led-uri LH351C - Philips FP 150W driver 700mA - CL II

Solicitant : SZÜGYI János Péter

Creat la : 25/10/2019

Validat la : 30/10/2019

Număr test: D190995

Standard referință: Standardele: IEC/EN 60598-1 & 62696

Mostră(e) : E190754

Dosar : P-F19086

Condiții testare

Aparat : IZYLUM 3

Cantitate esantioane testare: 5

Material Difuzor: Sticlă extra clară

Formă difuzor: Plat

Seriografie : Fără

Grosime difuzor (mm): 5

Metodă de testare :

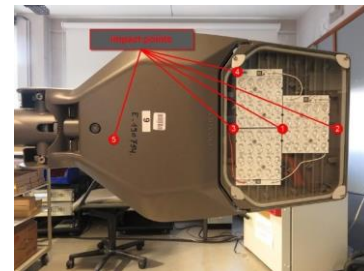
La ciocanul cu pendul

5 puncte de impact distribuite pe suprafața protectorului

Un impact asupra fiecărui punct


2 impacturi suplimentare asupra punctului cel mai fragil

Operator : Philippe Léonard



IMG_5355a

Conclusion

 Success

Concluzii :

IK09 garantat

Validat de:

GHYSENS Gilles

(semnatura indescifrabilă)

Duplicat pentru : SZÜGYI János Péter, HORVÁTH Csaba,

BEDŐ

Péter, BOS Peter

LAB : 05/11/2019

//CR190995

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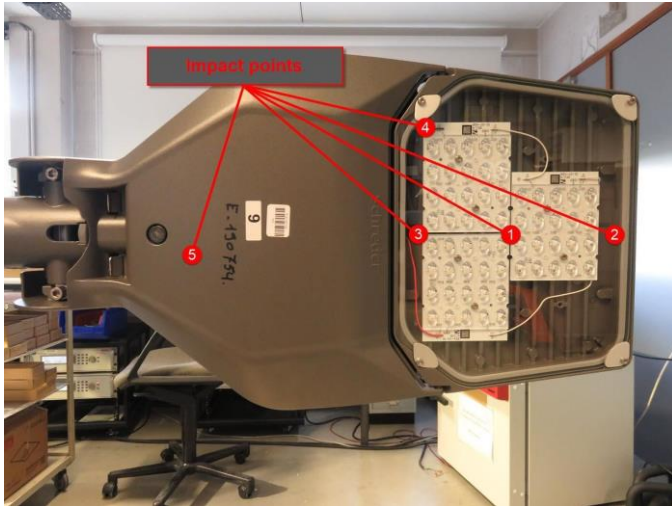

Traducător și Interpret Autorizat
LIMBĂȘAN DANIELA
Aut. M.J. Nr. 14531/2005
Engleză, Franceză

Detalii test(e)

Test(s)

Nume	Descriere	Rezultat
IK09	Energia de impact: 10 joules Greutate ciocan: 5 kg Înălțimea de cădere: 20 cm	Succes

Puncte impact



IK09

Anexă(e)

TESTED
NOT TESTED

IK 09	Impact	1			2			3			4			5		
Sample	Shot	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1		✓			✓			✓			✓			✓	✓	✓
2		✓			✓			✓			✓			✓	✓	✓
3		✓			✓			✓			✓			✓	✓	✓
4		✓			✓			✓			✓			✓	✓	✓
5		✓			✓			✓			✓			✓	✓	✓

IK09_Izylum_3

Traducător și Interpret Autorizat
LIMBAȘAN DANIELA
 Aut. M.J. Nr. 14531/2005
 Engleză, Franceză

Temperatura camerei de test (°C) : 25

Echipamente de măsurare:

Ciocan cu pendul cu carru (M062)

Termometru (A039 / 3)

Scara electronică 120kg (M057) Cheie diametrică (M059)

Cantități măsurate:

Pentru IK 04/05/06: Verificarea rezistenței mecanice a unui corp de iluminat conform PT-S-13

Pentru IK07/08/09/10/10+: Verificarea rezistenței mecanice a unui corp de iluminat conform PT-S-05

Incertitudini :

Temperature: 0,6 °K

Temperatură: 0,6 °K

Masa: 0,25 %

Cheia dinamometrică:

De la 0.5 la 2.5 Nm : 0,15 Nm

De la 2.5 la 5 Nm : 0,22 Nm

De la 5 la 25 Nm : 0,83 Nm

De la 25 la 60 Nm : 2,73 Nm

De la 60 la 100 Nm : 3,55 Nm

Pentru IK 04/05/06, energie de impact: ± 10%

Pentru IK07/08/09/10/10+, energie de impact: ± 1%

Reguli de decizie:

Criterii de trecere / eșec conform GDE-GUI-003

Prin inspecție vizuală (sau alte mijloace, dacă este necesar):

Aparatul arată un comportament periculos: eșuat

Aparatul nu arată un comportament periculos: trece

Când sunt testate mai multe corpuri de iluminat, 4 din 5 eșantioane trebuie să arate un rezultat pozitiv pentru conformitatea

lotului

Sfârșitul testului:

Traducător și Interpret Autorizat
LIMBĂȘAN DANIELA
Aut. M.J. Nr. 14531/2005
Engleză, Franceză

Tightness test

General information

Subject : IZYLUM 3 - 60 LH351C - Philips SR 150W - 700mA - Lumawise - CL I

Asked by : SZÜGYI János Péter

Created on : 25/10/2019

Validated on : 06/11/2019

Test number : D190994

Reference norm : IEC/EN 60598-1 Standard

Sample(s) : E190753

Folder : P-F19086

Test conditions

Luminaire : IZYLUM 3

Number of LED : 60

LED : Samsung LH351C

Driver current (mA) : 700

Protector Material : Glass Extra Clear

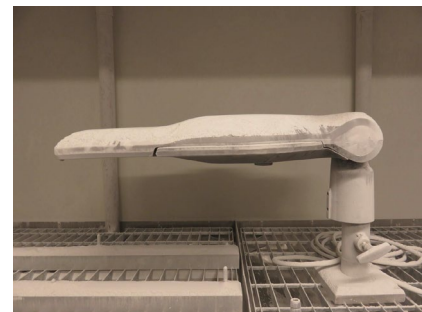
Protector Shape : Flat

External accessories :

Lumawise


Preconditioning time (minutes) : 60

Operator : Philippe Léonard



IMG_5364

Conclusion

 Success

Conclusion :

IP66 granted.

Validated by :
GHYSENS Gilles

Duplicate to : SZÜGYI János Péter, HORVÁTH Csaba, BEDŐ Péter, BOS Peter
LAB : 06/11/2019

D190994

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Test(s) details

Test(s)

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

IP6X

Result(s)



Test succeeded no dust entry in the optical and auxiliary part.

IPX6

Result(s)



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

Test room temperature (°C) : 24

Measurement equipment :

IP6X

Talcum chamber (A003)

Thermometer (A039/2)

Chronometer (A043/6)

Caliper (M054/M055)

IPX6

Rotating table (A001/2)

Chronometer (A043/6)

Thermometer (A039/1)

Flowmeter (A001/9)

IPx6 nozzle (A001/5)

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): ± 3 seconds

Talcum mass: 0,02 %

For liquid ingress test:

IPX3/X4

Table rotation: ± 6 sec/rotation

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

Water flow: ± 4 %

IPX5/X6

Table rotation: ± 6 sec/rotation

Water flow: ± 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 -----

Laborator teste
RAPORT DE TEST FIZIC



R-Tech
Rue de Mons 3 – B-4000 Liège – Belgium
Tel.: +32 4 224 71 40 – Fax: +32 4 224 25 90
Member of Schröder Group

FORMULAR L-54 Editia 01 – Revizia 01 - Data: 10/09/2019

Test etanșeitate

Informații generale

Subiect : IZYLUM 3 - 60 LH351C - Philips SR 150W - 700mA - Lumawise - CL I

Solicitat de: SZÜGYI János Péter

Creat la: 25/10/2019

Validat la: 06/11/2019

Număr test: D190994

Standard referință:: IEC/EN 60598-1 Standard

Mostră(e): E190753

Dosar : P-F19086

Condiții testare

Aparat : IZYLUM 3

Număr LED-uri : 60

LED : Samsung LH351C

Curent driver (mA) : 700

Materia difuzor: Sticlă Extra Clară

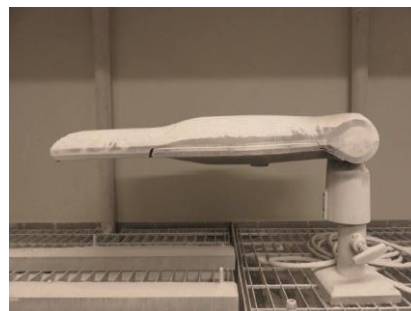
Formă difuzor: Plat

Accesorii exterioare:

Lumawise

Timp de condiționare (minute): 60

Operator : Philippe Léonard



IMG_5364

Concluzii



Succes

Concluzii :

IP66 garantat.

Validat de:

GHYSENS Gilles

(Semnătura indescifrabilă)

Duplicat pentru: SZÜGYI János Péter, HORVÁTH Csaba,

BEDŐ

Péter, BOS Peter

LAB : 06/11/2019

D190994

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Traducător și Interpret Autorizat
LIMBĂȘAN DANIELA
Aut. M.J. Nr. 14531/2005
Engleză, Franceză

Detalii test(e)

Test(e)

Nume	Descriere	Rezultat
IP6X	<ul style="list-style-type: none">- Aparatul de iluminat pornit până la T° stabil- Talc în suspensie (suflantă pornită)- După 1', aparatul este închis- Talc 3 ore	Succes
IPX6	<ul style="list-style-type: none">- Aparatul de iluminat pornit până la T° stabil- Aparatul de iluminat închis și pus imediat sub jet de apă- Φ tub 12,5 mm- Debit apă: 100 l/min- Distanța de pulverizare: 3 m- Durata testului: 3 minutes	Succes

IP6X

Rezultat(e)



Testul a reușit să nu permită pătrunderea de Talc în partea optică și auxiliare.

IPX6

Rezultat(e)



Test Testul a reușit să nu permită pătrunderea de Talc în partea optică și auxiliare.

Traducător și Interpret Autorizat
LIMBĂȘAN DANIELA
Aut. M.J. Nr. 14531/2005
Engleză, Franceză

Temperatura camerei de test(°C): 24

Echipamente de măsurare:

IP6X

Cameră de talc (A003)

Termometru (A039/2)

Cronometru (A043/4)

Șubler (M054/M055)

IPX6

Masă rotativă (A001/2)

Cronometru (A043/4)

Termometru (A039/1)

Debitmetru (A001/9)

IPx6 duză (A001/5)

Cantități măsurate:

Verificarea intrării apei / prafului în incinta unui corp de iluminat conform

Pentru IP2X: PT-S-14

Pentru IP3X/4X: PT-S-15

Pentru IP5X/6X: PT-S-06

Pentru IPX3/X4: PT-S-01

Pentru IPX5/X6: PT-S-08

Pentru IPX7/X8: PT-S-09

Incertitudini:

Declarația de incertitudini (K=2, 95% din nivelul de încredere):

Timp: 0,35 secunde per 10 minute

Temperatură: 0,6 °K

Șubler: 0,005 mm

Bandă de măsură: ± 1,13 mm

Cheia dinamometrică :

De la 0.5 la 2.5 Nm : 0,15 Nm

De la 2.5 la 5 Nm : 0,22 Nm

De la 5 la 25 Nm : 0,83 Nm

De la 25 la 60 Nm : 2,73 Nm

De la 60 la 100 Nm : 3,55 Nm

Pentru test de intrare solidă:

IP2X:

Dimensiunile sondei: ± 0,6 mm

Forța aplicată: ± 0,4 N

IP3X:

Dimensiunile sondei: ± 0,3 mm

Forța aplicată: ± 0,13 N

IP4X:

Dimensiunile sondei: ± 0,1 mm

Forța aplicată: ± 0,11 N

Traducător și Interpret Autorizat
LIMBĂȘAN DANIELA
Aut. M. J. Nr. 14531/2005
Engleză, Franceză

IP5X/6X:

Durata testului (timpul de suspendare a talcului): ± 3 seconds
Masa de talc: 0,02 %

Pentru test de intrare lichidă:

IPX3/X4

Rotirea tabelului: ± 6 rotații/sec
Unghiul de rotație brate: $\pm 3^\circ$
Debitul apei: ± 4 %

IPX5/X6

Rotirea mesei: ± 6 rotații/sec
Debitul apei: ± 4 %
Distanța testului: +0 / -50 cm

IPX7/X8

Adâncimea testului: +10 cm / -0 cm

Reguli de decizie:

Criterii de trecere / eșec

IP2X:

Dacă este posibil contactul cu piese sub tensiune: eșuează
În caz contrar: trece

IP3X/4X:

Pentru corpurile de iluminat fără găuri de scurgere și nici fante de ventilație pentru răcirea forțată, pătrunderea sondei de testare în incintă: eșuat
Pentru corpurile de iluminat cu găuri de scurgere sau fante de ventilație pentru răcirea forțată, dacă este posibil contactul cu o piesă sub tensiune: eșuat
În caz contrar: trece

IP5X/6X

Prin inspecție vizuală:

Dacă este posibil pericol din cauza prezenței prafului conductor: eșuat
Dacă nu există pericol posibil din cauza prezenței prafului conductor: IP5X este acordat
Fără prezență de talc: IP6X este acordat
Pentru test de pătrundere a lichidului:

IPX3/X4/X5/X6:

Prin inspecție vizuală:

Dacă este posibil pericol din cauza prezenței apei: eșuat
Dacă nu există niciun pericol posibil din cauza prezenței apei și nici o modalitate eficientă de evacuare a apei: eșuat
Dacă nu există niciun pericol posibil din cauza prezenței apei și nici o modalitate eficientă de evacuare a apei: trece
Fără prezență de apă: trece

IPX7/X8:

Prin inspecție vizuală:

Prezența apei: eșuat

Fără prezență de apă: trece

End of test report

Traducător și Interpret Autorizat
LIMBĂȘAN DANIELA
Aut. M.J. Nr. 14531/2005
Engleză, Franceză

**SERVICII DE
LABORATOR
RAPORT DE TEST FIZIC**



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Tel.: +32 4 224 71 40 – Fax: +32 4 224 25 90
Member of Schröder Group

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

Test vibrații după standardul ANSI C 136-31

Informatii generale

Subiect : IZYLUM 3 - Configuratie intrare laterala pentru stalp 60 mm

Solicitat de: SZÜGYI János Péter

Creat la: 07/11/2019

Numar test: D191041

Standard de referinta: ANSI C 136-31 Standard

Esantion(e) : E190767

Dosar: P-F19086

Cerintele testului

Aparat : IZYLUM 3

Operator : External Lab

Tip test: ANSI C 136-31 (3G)

Tip fixare: intrare laterala

Diametru stalp (mm) : 60

Tip surub: M10

Cuplul de strângere (Nm): aparat: 17

Cuplul de strângere (Nm): stalp: 22

Data test : 04/11/2019

Facilitate externa: External - V2i

Referința raportului de test extern: Report_R-TECH_IZYLUM- Size3_ID2404_TSH_2019-11- 04_v1

Concluzii



Succes

IZYLUM 3 este in conformitate cu protocolul de testare ANSI 3g.

Validat de:

LERHO Xavier

(semnatura indescifrabila)

Duplicat pentru: SZÜGYI János Péter, HORVÁTH

Csaba, BEDŐ Péter, BOS Peter

LAB : 18/11/2019

D191041

1/2

Traducător și Interpret Autorizat
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Detalii test(e)

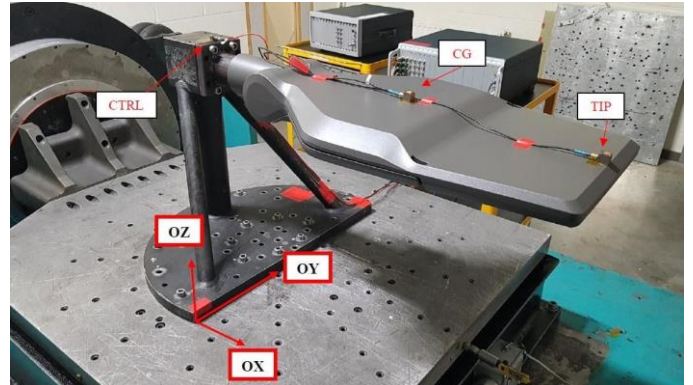
Test(e)

Nume	Descriere	Rezultat
Vibratii 3G - Axis X	ANSI C136-31 3G	Succes
Vibratii 3G - Axis Y	ANSI C136-31 3G	Succes
Vibratii 3G - Axis Z	ANSI C136-31 3G	Succes

Anexa(e)



1.png



1

Traducător și Interpret Autorizat
LIMBĂȘAN DANIELA
Aut. M.J. Nr. 14531/2005
Engleză, Franceză

Aerodynamic Wind Test

General information

Subject : IZYLUM 3 - Side-entry for pole 76 mm

Asked by : SZÜGYI János Péter

Created on : 17/10/2019

Test number : D190959

Sample(s) : E190702

Folder : P-F19078

Test conditions

Luminaire : IZYLUM 3

Operator : External Lab

Fixation : Side-entry

Tightening Torque (Nm) : 22


Pole Diameter : 76

Protector shape : Flat

Testing Facility : External - Wind Tunnel - ULg

See external report ref. : SOUF-RTECH-QT- 19019

Conclusion

 Informative

Conclusion :

IZYLUM 3 complies with wind test 205 km/h during 10 minutes with configuration 30°.

This report gives values for configurations 0°, 5°, 10°, 15°, 20°, 25°, 30° and side.

Validated by :

LERHO Xavier

Duplicate to : SZÜGYI János Péter, BEDŐ Péter

LAB : 12/11/2019

D190959

1/4



Test(s) details

Test(s)

Name	Description	Result
Aerodynamic Coefficient Determination (Front 0°)	Front 0°	Informative
Aerodynamic Coefficient Determination (Front 5°)	Front 5°	Informative
Aerodynamic Coefficient Determination (Front 10°)	Front 10°	Informative
Aerodynamic Coefficient Determination (Front 15°)	Front 15°	Non realized
Aerodynamic Coefficient Determination (Front 20°)	Front 20°	Informative
Aerodynamic Coefficient Determination (Front 25°)	Front 25°	Informative
Aerodynamic Coefficient Determination (Front 30°)	Front 30°	Informative
Aerodynamic Coefficient Determination (Side)	Side	Informative
Endurance test: Wind test qualification	Front 30° - 205 km/h - 10 minutes	Success

Annex(es)



1.png

Aerodynamic Coefficient Determination (Front 0°)

Result(s)

	<u>Value (m²)</u>		
<u>Wind Direction</u>	<u>Cd.S (drag)</u>	<u>Cs.S (Side)</u>	<u>Cl.S (Lift)</u>
Front 0°	0.028	0.002	0.003

Aerodynamic Coefficient Determination (Front 5°)

Result(s)

	Value (m ²)		
<u>Wind Direction</u>	<u>Cd.S (drag)</u>	<u>Cs.S (Side)</u>	<u>Cl.S (Lift)</u>
Front 5°	0.030	0.001	0.016

Aerodynamic Coefficient Determination (Front 10°)

Result(s)

	Value (m ²)		
<u>Wind Direction</u>	<u>Cd.S (drag)</u>	<u>Cs.S (Side)</u>	<u>Cl.S (Lift)</u>
Front 10°	0.035	0.003	0.031

Aerodynamic Coefficient Determination (Front 15°)

Result(s)

	Value (m ²)		
<u>Wind Direction</u>	<u>Cd.S (drag)</u>	<u>Cs.S (Side)</u>	<u>Cl.S (Lift)</u>
Front 15°	0.039	0.001	0.050

Aerodynamic Coefficient Determination (Front 20°)

Result(s)

	Value (m ²)		
<u>Wind Direction</u>	<u>Cd.S (drag)</u>	<u>Cs.S (Side)</u>	<u>Cl.S (Lift)</u>
Front 20°	0.056	0.002	0.070

Aerodynamic Coefficient Determination (Front 25°)

Result(s)

	Value (m ²)		
<u>Wind Direction</u>	<u>Cd.S (drag)</u>	<u>Cs.S (Side)</u>	<u>Cl.S (Lift)</u>
Front 25°	0.071	0.003	0.090

Aerodynamic Coefficient Determination (Front 30°)

Result(s)

	Value (m ²)		
<u>Wind Direction</u>	<u>Cd.S (drag)</u>	<u>Cs.S (Side)</u>	<u>Cl.S (Lift)</u>
Front 30°	0.095	0.003	0.115

Aerodynamic Coefficient Determination (Side)

Result(s)

	Value (m ²)		
<u>Wind Direction</u>	<u>Cd.S (drag)</u>	<u>Cs.S (Side)</u>	<u>Cl.S (Lift)</u>
Side	0.042	0.016	0.006

Endurance test: Wind test qualification

Result(s)

OK, neither failure nor permanent deformations were detected.

Laborator de teste
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FORM L-54 Editia 01 – Revizia 01 - Data: 10/09/2019

Test rezistență aerodinamică la vânt

Informatii generale

Subiect: IZYLUM 3 - intrare laterala stalp 76 mm

Solicitat de: SZÜGYI János Péter

Create la: 17/10/2019

Numar test: D190959

Esantion(e): E190702

Dosar: P-F19078

Conditii test

Aparat : IZYLUM 3

Operator : External Lab

Fixare : Intrare-laterala

Cuplu de strangere (Nm) : 22

Diametru stalp: 76

Forma difuzor: Plat

Facilitate de testare: Extern – Tunel de vant- ULg

Vezi referinta raport extern.: SOUF-RTECH-QT- 19019

Concluzii



Informativ

Concluzii:

IZYLUM 3 respectă testul vântului 205 km / h în decurs de 10 minute cu configurația 30 °.

Acest raport oferă valorile pentru configurațiile 0 °, 5 °, 10 °, 15 °, 20 °, 25 °, 30 ° și lateral.

Validat de:

LERHO Xavier

Duplicat pentru: SZÜGYI János Péter, BEDŐ

Péter

LAB : 12/11/2019

D190959

1/4

(semnatura indescifrabila)

Traducător și Interpret Autorizat
LIMBĂȘAN DANIELA
Aut. M.J. Nr. 14531/2005
Engleză, Franceză

Detalii test(e)

Test(e)

Nume	Descriere	Rzultat
Determinarea coeficientului aerodinamic (Frontal 0°)	Frontal 0°	Informativ
Determinarea coeficientului aerodinamic (Frontal 5°)	Frontal 5°	Informativ
Determinarea coeficientului aerodinamic (Frontal 10°)	Frontal 10°	Informativ
Determinarea coeficientului aerodinamic (Frontal 15°)	Frontal 15°	Informativ
Determinarea coeficientului aerodinamic (Frontal 20°)	Frontal 20°	Informativ
Determinarea coeficientului aerodinamic (Frontal 25°)	Frontal 25°	Informativ
Determinarea coeficientului aerodinamic (Frontal 30°)	Frontal 30°	Informativ
Determinarea coeficientului aerodinamic (lateral)	Lateral	Informativ
Test de rezistență: calificare test vânt	Frontal 30° - 205 km/h - 10 minute	Succes

Anexa(e)



1.png

Determinarea coeficientului aerodinamic (Frontal 0°)

Rezultat(e)

	Value (m ²)		
<u>Wind Direction</u>	<u>Cd.S (drag)</u>	<u>Cs.S (Side)</u>	<u>Cl.S (Lift)</u>
Front 0°	0.028	0.002	0.003

Determinarea coeficientului aerodinamic (Frontal 5°)

Rezultat(e)

	Value (m ²)		
<u>Wind Direction</u>	<u>Cd.S (drag)</u>	<u>Cs.S (Side)</u>	<u>Cl.S (Lift)</u>
Front 5°	0.030	0.001	0.016

Determinarea coeficientului aerodinamic (Frontal 10°)

Rezultat(e)

	Value (m ²)		
<u>Wind Direction</u>	<u>Cd.S (drag)</u>	<u>Cs.S (Side)</u>	<u>Cl.S (Lift)</u>
Front 10°	0.035	0.003	0.031

Determinarea coeficientului aerodinamic (Frontal 15°)

Rezultat(e)

	Value (m ²)		
<u>Wind Direction</u>	<u>Cd.S (drag)</u>	<u>Cs.S (Side)</u>	<u>Cl.S (Lift)</u>
Front 15°	0.039	0.001	0.050

Determinarea coeficientului aerodinamic (Frontal 20°)

Rezultat(e)

	Value (m ²)		
<u>Wind Direction</u>	<u>Cd.S (drag)</u>	<u>Cs.S (Side)</u>	<u>Cl.S (Lift)</u>
Front 20°	0.056	0.002	0.070

Determinarea coeficientului aerodinamic (Frontal 25°)

Rezultat(e)

	Value (m ²)		
<u>Wind Direction</u>	<u>Cd.S (drag)</u>	<u>Cs.S (Side)</u>	<u>Cl.S (Lift)</u>
Front 25°	0.071	0.003	0.090

Determinarea coeficientului aerodinamic (Frontal 30°)

Rezultat(e)

	Value (m ²)		
<u>Wind Direction</u>	<u>Cd.S (drag)</u>	<u>Cs.S (Side)</u>	<u>Cl.S (Lift)</u>
Front 30°	0.095	0.003	0.115

Determinarea coeficientului aerodinamic (lateral)

Rezultat(e)

	Value (m ²)		
<u>Wind Direction</u>	<u>Cd.S (drag)</u>	<u>Cs.S (Side)</u>	<u>Cl.S (Lift)</u>
Side	0.042	0.016	0.006

Test de rezistență: calificare test vânt

Rezultat(e)

OK, nu a fost detectată nici o defecțiune, nici deformări permanente

Traducător și Interpret Autorizat
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
IZYLUM 3

5308

Optic	5308
Protector	Flat glass
Source	80 LEDs
Matrix	447852




Characteristics

							
715	368	94	7.0	IP 66/IP 67	IK 09	I EU, II EU	0.028
Length (mm)	Width (mm)	Height (mm)	Weight (kg)	Tightness level*	Impact resistance*	Electrical class*	CxS (m ²)

* According to IEC-EN60598 and IEC-EN62262

Features

A time-saving, versatile and high-performing road and urban solution

- Maximised savings in energy and maintenance costs
- 5 sizes to provide the most accurate solution for numerous road and urban applications
- Tool-free access with a clear, perceptible click upon closing
- On-site adjustment from post-top to side-entry without disconnecting the luminaire from the pole thanks to IzyFix
- Wide range of operating temperatures
- Zhaga-D4i certified
- Connected-ready
- Solar-powered variants
- LensoFlex@4 versatile solutions for high-end photometries maximising comfort and safety

Types of application

- Square and park
- Bridge
- Car park
- Train station
- Bike path
- Urban road

Information for 1000 lm matrix

Efficacy (%)	84.7	G Class (EN 13201-2)	G6	I 70-80-90-95 (cd)	306 - 43 - X - X
DLOR (%)	84.7	G* (EN 13201 2015)	G*4	CIE flux code N 1→5 (%)	36.3 - 77.5 - 98.1 - 100.0 - 84.7
ULOR (%)	0.0	Imax (cd)	423	Gradient 90°	29cd
ULR (%)	0.0	Aperture 0-180°	30 - 30	Gradient 270°	12cd
Incl ULR 4%	-38/34°	Aperture 90-270°	23 - X		

Photometrical characteristics

LED count	Colour code	Current (mA)	Luminaire power (W)	Source flux (lm)	Luminaire output flux (lm)	Luminaire efficacy (lm/W)	Peak (cd)	BUG Rating	Voltage (V)
Ambient temp = 25°									
80	CW 757	200	47	9244	7834	170	3910	B2 U0 G2	230
80	CW 757	300	70	13355	11318	162	5649	B2 U0 G2	230
80	CW 757	350	82	15280	12949	158	6463	B3 U0 G2	230
80	CW 757	400	95	17159	14542	153	7258	B3 U0 G3	230
80	CW 757	450	107	18962	16070	150	8021	B3 U0 G3	230
80	CW 757	500	119	20689	17533	147	8751	B3 U0 G3	230
80	CW 757	550	132	22324	18919	143	9443	B3 U0 G3	230
80	CW 757	600	144	23898	20253	141	10109	B3 U0 G3	230
80	CW 757	670	162	25976	22014	136	10988	B3 U0 G3	230
80	NW 740	200	47	9486	8039	175	4013	B2 U0 G2	230
80	NW 740	300	70	13704	11614	166	5797	B2 U0 G2	230
80	NW 740	350	82	15680	13288	162	6633	B3 U0 G2	230
80	NW 740	400	95	17609	14923	157	7448	B3 U0 G3	230
80	NW 740	450	107	19459	16491	154	8231	B3 U0 G3	230
80	NW 740	500	119	21231	17992	151	8980	B3 U0 G3	230
80	NW 740	550	132	22908	19414	147	9690	B3 U0 G3	230
80	NW 740	600	144	24524	20783	144	10373	B3 U0 G3	230
80	NW 740	670	162	26656	22590	139	11275	B3 U0 G3	230
80	WW 722	200	47	7841	6645	144	3317	B2 U0 G1	230
80	WW 722	300	70	11327	9599	137	4791	B2 U0 G2	230
80	WW 722	350	82	12960	10983	134	5482	B2 U0 G2	230
80	WW 722	400	95	14554	12334	130	6156	B2 U0 G2	230
80	WW 722	450	107	16083	13630	127	6803	B3 U0 G2	230
80	WW 722	500	119	17548	14871	125	7423	B3 U0 G3	230
80	WW 722	550	132	18935	16046	122	8009	B3 U0 G3	230
80	WW 722	600	144	20269	17178	119	8574	B3 U0 G3	230
80	WW 722	670	162	22032	18671	115	9319	B3 U0 G3	230
80	WW 727	200	47	8180	6932	151	3460	B2 U0 G1	230
80	WW 727	300	70	11816	10014	143	4998	B2 U0 G2	230
80	WW 727	350	82	13520	11458	140	5719	B2 U0 G2	230
80	WW 727	400	95	15183	12867	135	6422	B3 U0 G2	230
80	WW 727	450	107	16778	14219	133	7097	B3 U0 G2	230
80	WW 727	500	119	18306	15514	130	7743	B3 U0 G3	230
80	WW 727	550	132	19753	16740	127	8355	B3 U0 G3	230
80	WW 727	600	144	21145	17920	124	8944	B3 U0 G3	230
80	WW 727	670	162	22984	19478	120	9722	B3 U0 G3	230
80	WW 730	200	47	8954	7588	165	3787	B2 U0 G2	230
80	WW 730	300	70	12935	10962	157	5472	B2 U0 G2	230
80	WW 730	350	82	14800	12543	153	6260	B2 U0 G2	230
80	WW 730	400	95	16620	14085	148	7030	B3 U0 G2	230
80	WW 730	450	107	18367	15565	145	7769	B3 U0 G3	230
80	WW 730	500	119	20039	16983	143	8476	B3 U0 G3	230
80	WW 730	550	132	21623	18325	139	9146	B3 U0 G3	230
80	WW 730	600	144	23147	19617	136	9791	B3 U0 G3	230

80	WW 730	670	162	25160	21322	132	10643	B3 U0 G3	230
80	WW 830	200	47	8422	7137	155	3562	B2 U0 G1	230
80	WW 830	300	70	12166	10310	147	5146	B2 U0 G2	230
80	WW 830	350	82	13920	11797	144	5888	B2 U0 G2	230
80	WW 830	400	95	15632	13248	139	6612	B3 U0 G2	230
80	WW 830	450	107	17275	14640	137	7307	B3 U0 G3	230
80	WW 830	500	119	18848	15973	134	7972	B3 U0 G3	230
80	WW 830	550	132	20337	17235	131	8603	B3 U0 G3	230
80	WW 830	600	144	21771	18450	128	9209	B3 U0 G3	230
80	WW 830	670	162	23664	20054	124	10010	B3 U0 G3	230

Tolerance on flux +- 7% - Tolerance on power +- 5%

Summary

CONCEPT

Family of 5 road LED luminaires: 1, 2, 3, 4, 5

Applications: Bike path, Bridge, Car park, Square and park, Train station, Urban road

Dimensions (mm):

- Width: 368.00
- Height: 94.00
- Length: 715.00

Weight (kg): 7.00

Recommended height installation: between 4.00 and 15.00+m

For optimal heat dissipation, the driver and LED engine are in separate compartments and juxtaposed in a horizontal section

HOUSING & FINISH

- Housing in high-pressure, die-cast aluminium, polyester powder coated
- Direct and tool free access to housing with driver compartment and optical unit by pushing the two clips at the bottom of the luminaire. Closing of the luminaire is confirmed with a clear, loud clicking sound (minimum of 110dB), audible even in a noisy road or urban environment.
- Colour: AKZO grey 900 sanded
- Luminaire CxS: 0.028m²
- Tightness - driver & optical: IP66/IP67
- Impact resistance: IK 09

INSTALLATION

- Universal fixation in high-pressure, die-cast aluminium
- For Diameter 60mm: 42-48 & 60mm tightened with 2 stainless steel screws, 32mm with a reducer kit
- For Diameter 76mm: 60mm & 76mm tightened with 2 stainless steel screws, 32 & 42-48mm with a reducer kit
- Switching from post-top to side-entry without disconnection from luminaire or the pole (even with precable version)
- Allows tilt of 130°
- Tool free access for maintenance

OPTICAL UNIT

- Available with high power & mid power LED's with the same body
- Protected against lens degradation with a 5mm thick extra-clear hardened glass
- Various photometric distributions: from narrow road to motorway, medium and large area
- CRI > 70
- ULR: 0%

LED lumen depreciation

- Lifetime residual flux @ Tq=25°C @ 100.000 hrs

ELECTRICAL

- Class I or Class II
- Input voltage: 220-240V - 50-60Hz
- Power factor > 95% at full load
- 10kV, 10kA surge protection

STANDARDS & CERTIFICATIONS

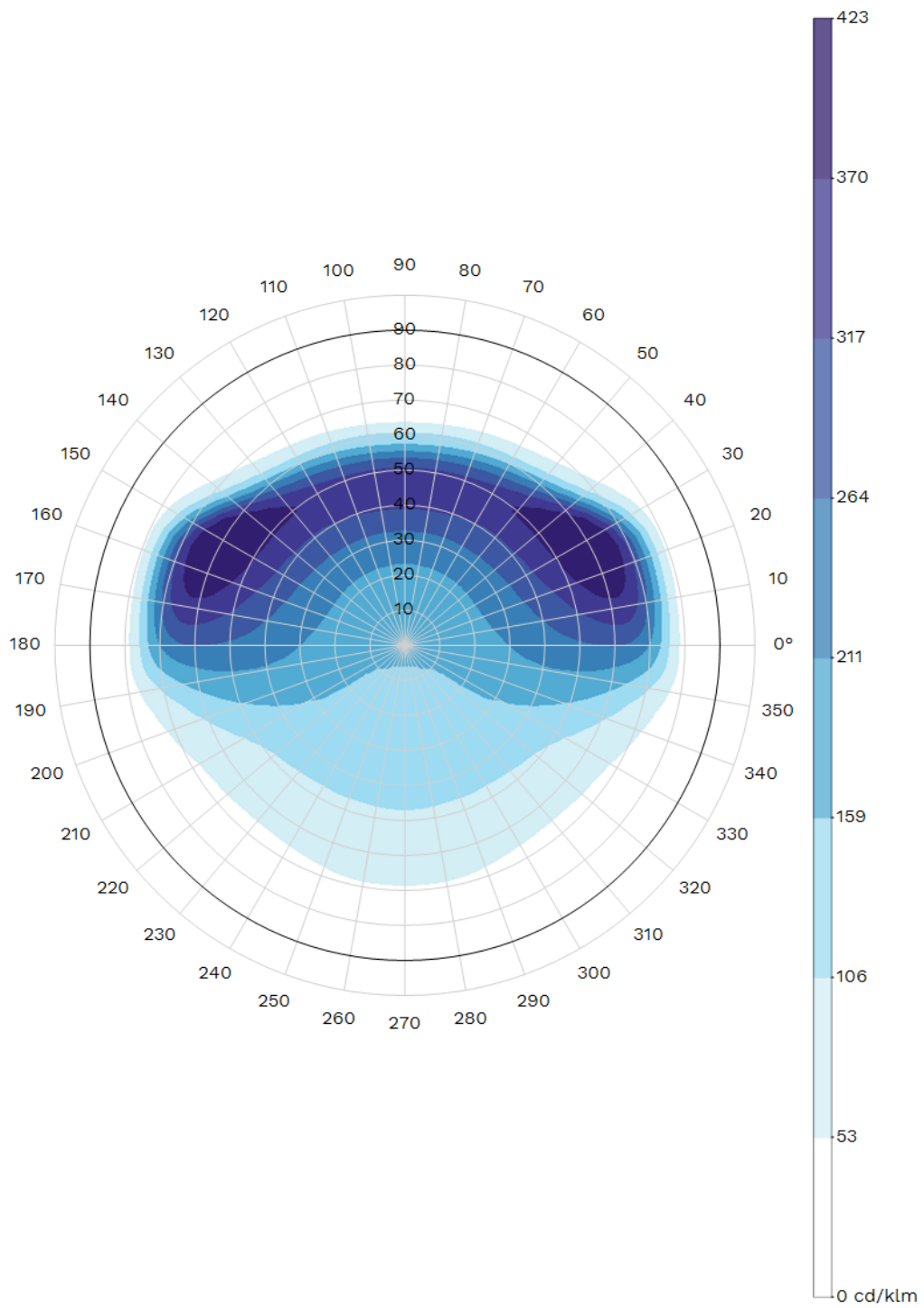
IZYLUM 3 - 5308 - 80 LEDs - Flat glass - 447852

05/10/2023

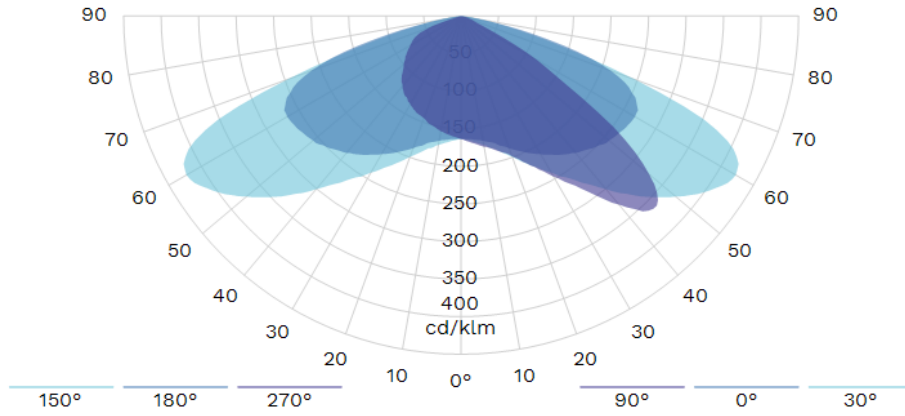
- CE
- ENEC
- LM79-80
- ETL
- ROHS
- All measurements in ISO17025 accredited laboratory

OPTIONS

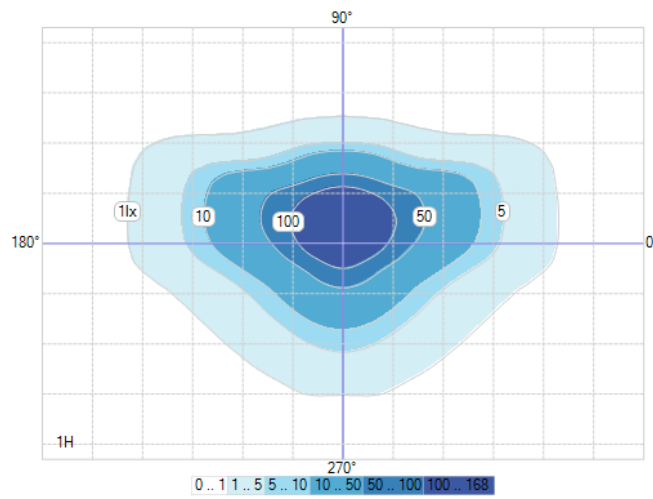
- Other RAL or AKZO colours
- Other light distributions
- Back light control
- NW or WW LEDs
- OWLET remote management
- Custom dimming profile; Constant Lumen Output (CLO); Bi-Power
- Photocell
- Motion detection
- Bluetooth



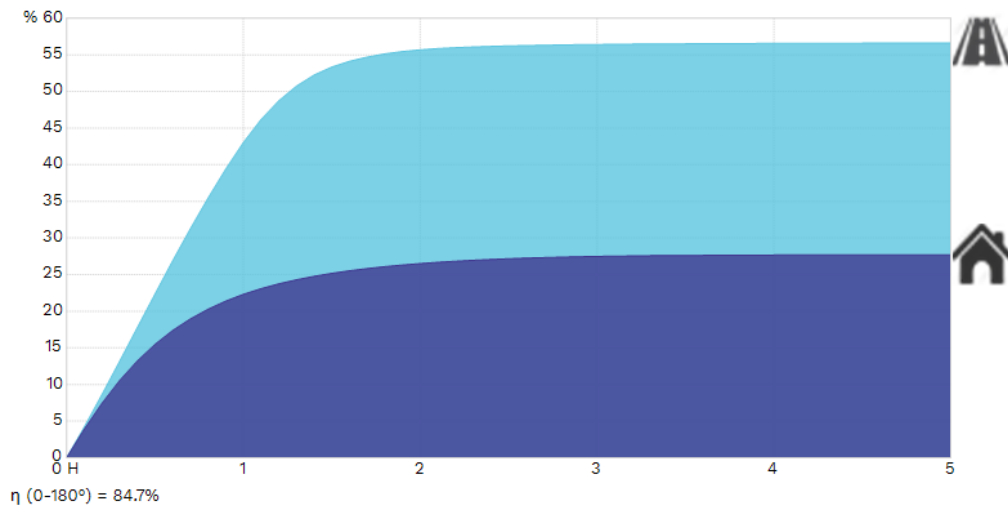
Polar/Cartesian diagram



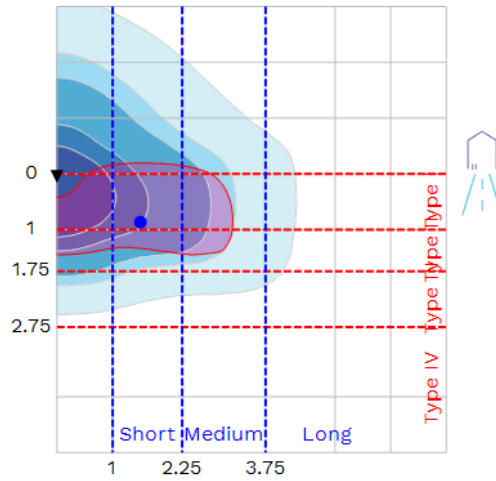
Isolux



K-Curve

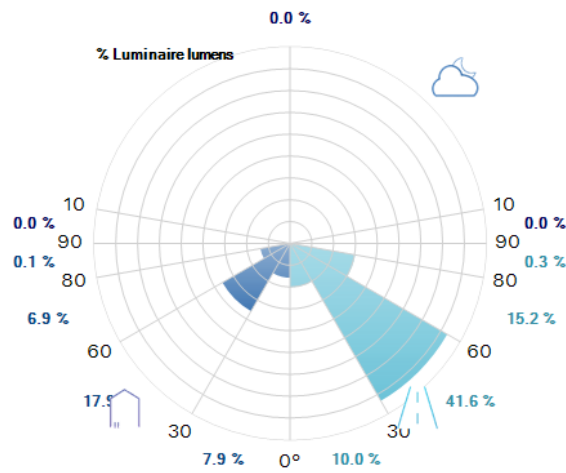


IES Roadway Classification / Nema Classification

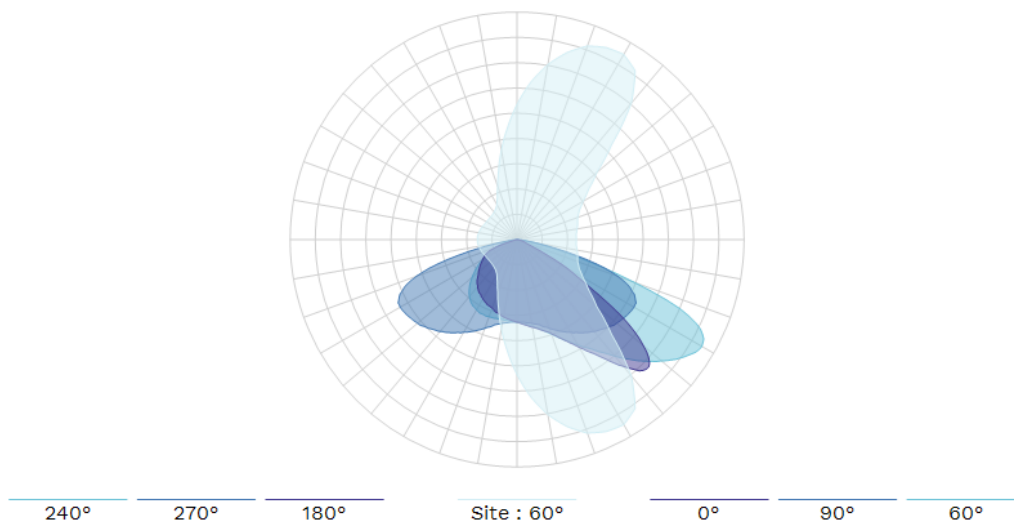


II - Short

Luminaire classification system (LCS)



Intensity diagram in max Cone and in CPlane



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FORM L-54 Edition 01 – Revision 00 - Date: 14/06/2018

Test de siguranță fotobiologică

Informatii generale

Subiect : LED MODULE 24 Led-uri Samsung 351C @ 700 mA - NW

Solicitat de: CHEUVART Geoffrey

Creat la: 19/11/2018

Numar test: D180820

Standard de referinta: IEC-EN 62471 Standard

Esantion(e) : E180293

Dosar : P-F18042

Cerintele testului

Numar de LED-uri : 24

LED : Samsung LH351C

Culoare LED : Neutral White

Curent Driver (mA) : 700

Facilitate de testare : Extern - Fotobiologic- Laborelec

Test si rezultate : LBE04132464 - 1.0

Operator : External Lab

Concluzii



Informativ

RG0 la (mm) : 1930

RG1 la (mm) : 600

RG2 la (mm) : 200

Marcaj: Simbolul „Nu vă uitați la sursa de lumină” trebuie să fie vizibil pe anunțul de instalare și pe corpul de iluminat. Mai mult, pe anunțul de instalare trebuie să apară următorul text: „Aparatul de iluminat trebuie poziționat astfel încât să nu fie așteptată o privire prelungită în corpul de iluminat la o distanță mai mică de 0,6 m”.

Validat de :

LERHO Xavier

[semnatura indescifrabila]

Duplicat pentru : SILVA Michelle, MULS Sophie, BEDŐ

PéterLAB : 19/11/2018

D180820

1/2

Traducător și Interpret Autorizat
LIMBĂȘAN DANIELA
Aut.M.J. Nr. 14531/2005
Engleză, Franceză

Detalii de testare

Test(e)

Nume	Descriere	Rezultat
UV actinic piele și ochi	Interval de lungime de undă nm: 200 - 400 / Durata de expunere sec: <30000	Informativ
UV-A Ochi	Interval de lungime de undă nm: 315 - 400 / Durata de expunere sec: =1000 >1000	Informativ
Sursă mică de lumină albastră	Interval de lungime de undă nm: 300 - 700 / Durata de expunere sec: =100 >100	Informativ
IR Ochi	Interval de lungime de undă nm: 780 - 3000 / Durata de expunere sec: =100 >100	Informativ
Termica piele	Interval de lungime de undă nm: 380 - 3000 / Durata de expunere sec: <10	Informativ
Lumină albastră	Interval de lungime de undă nm: 300 - 700 / Durata de expunere sec: 0,25 – 10 10-100 100-10000 = 10000	Informativ
Termica retiniană	Interval de lungime de undă nm: 380 - 1400 / Durata de expunere sec: <0,25 0,25 – 10	Informativ
Termic retinian (stimul vizual slab)	Interval de lungime de undă nm: 780 - 1400 / Durata de expunere sec: > 10	Informativ

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