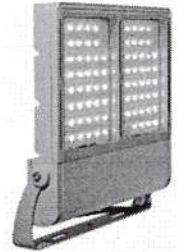










# INDU FLOOD 3

6489

Optic 6489  
 Protector Flat, Glass Extra Clear, Smooth  
 Source 88 Lumileds LUXEON 5050  
 Matrix 418402



## Characteristics

							
356	382	60	7.3	IP 66	IK 08	I EU	-
Length (mm)	Width (mm)	Height (mm)	Weight (kg)	Tightness level*	Impact resistance*	Electrical class*	CxS (m <sup>2</sup> )

\* According to IEC-EN60598 and IEC-EN62262

## Features

Efficiency and versatility for indoor and outdoor area lighting

- High efficiency with low operating costs
- 3 sizes and multiple light distributions to replace discharge lamps from 50 to 400W
- One design for aesthetic consistency in multi-purpose applications
- High energy savings compared to systems with traditional discharge lamps
- Dimmable for even more energy savings
- Range of light distributions to ensure the right light
- Long life span thanks to robust design

## Types of application

- Sports lighting
- Large area
- Industrial hall
- Car park

## Information for 1000 lm matrix

Efficacy (%)	83.3	G Class (EN 13201-2)	G6	Aperture 90-270°	44 - 20
DLOR (%)	83.3	G* (EN 13201 2015)	G*6	I 70-80-90-95 (cd)	236 - 18 - X - X
ULOR (%)	0.0	Imax (cd)	356	CIE flux code N 1-5 (%)	47.0 - 81.7 - 98.7 - 100.0 - 83.3
ULR (%)	0.0	Aperture 0-180°	69 - 69		



*Handwritten signature or initials.*

## 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°									
88	CW 765	60	130	22704	18901	145	8091	B3 U0 G3	230
88	NW 740	60	130	23232	19341	149	8279	B3 U0 G3	230
88	WW 730	60	130	21824	18169	140	7777	B3 U0 G3	230

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



## Summary

Efficiency and versatility for indoor and outdoor area lighting

With multiple combinations of lumen packages and light distributions, the INDU FLOOD is the ideal tool to provide an efficient multi-purpose lighting solution in industrial environments. Available in 3 sizes, this compact luminaire perfectly integrates environments to provide the exact lighting requirements of the space to be lit. Delivered with a mounting bracket, it can be adjusted on-site for a precise optical control. It is perfect for replacing fixtures with discharge lamps from 50-400W. It provides a bright white light for excellent visibility and better colour perception, delivering value beyond energy savings. Its robust design, with a high IP rating, guarantees performance for many years to come even in the harshest conditions.

The INDU FLOOD range combines the energy efficiency of LED technology with photometric versatility. These floodlights are made of painted die-cast aluminium. The protector in glass is sealed onto the front cover. Mounting by means of a fork enables the inclination to be adjusted precisely on-site. Four models for all applications:

- INDU FLOOD 1 with 24 LEDs
- INDU FLOOD 2 with 48 LEDs
- INDU FLOOD 3 with 88 LEDs
- INDU FLOOD 4 with 96 LEDs

The four models of the INDU FLOOD range make it perfect for various typical industrial lighting applications: security check-point, stairs, car and lorry parks, works roads, paths, loading platforms and storage. The INDU FLOOD luminaires can be used indoor and outdoor, in direct or - if needed - in indirect lighting. They can be controlled via a DALI or 1-10V interface.

Applications: Car park, Industrial hall, Large area, Sports lighting

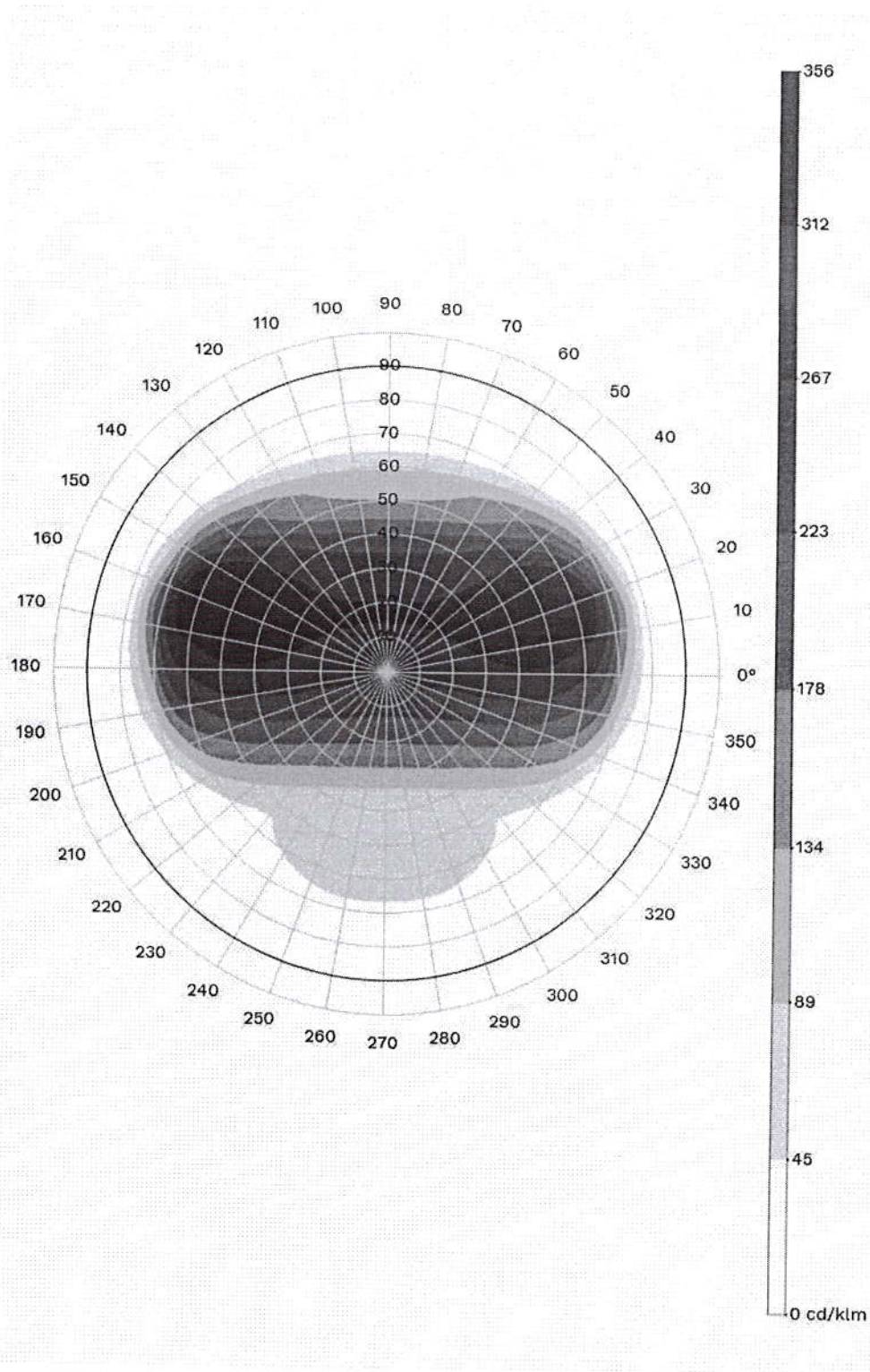
Recommended height installation: between 4.00 and 12.00

Painting: Polyester powder coating

Colour: RAL 7040

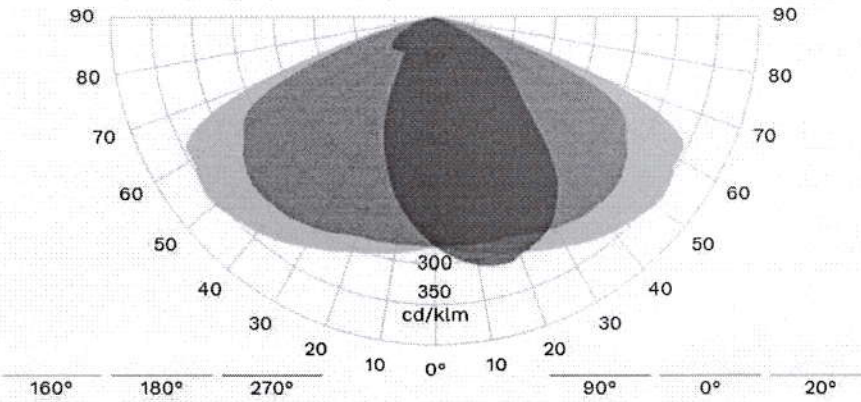


A handwritten signature in blue ink, appearing to be 'C. B.', located below the stamp.

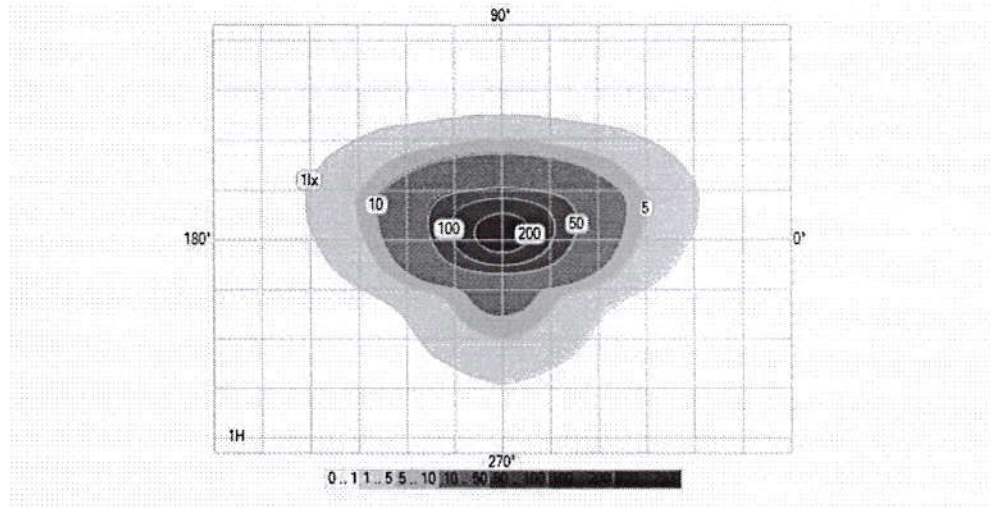


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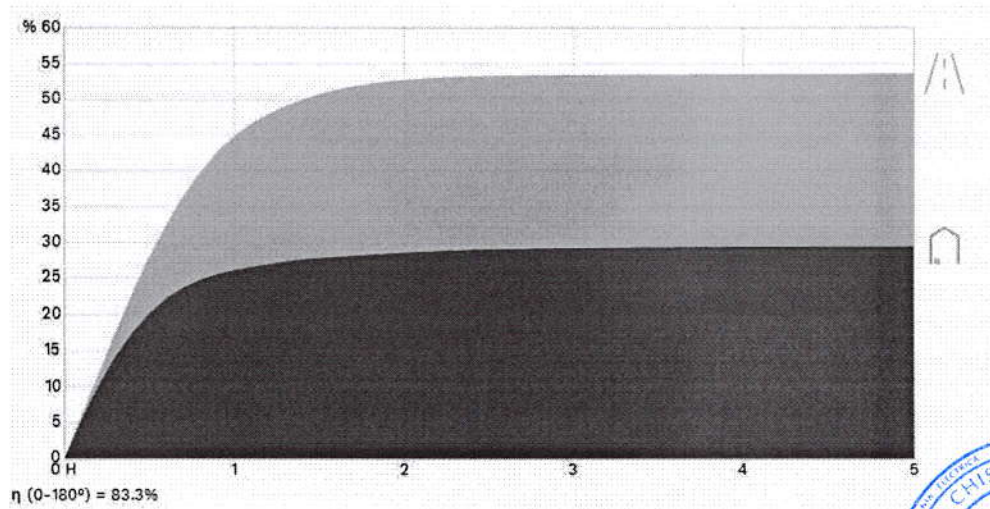
Polar/Cartesian diagram



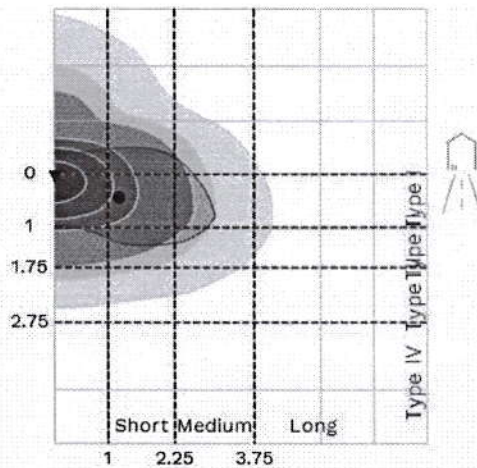
Isolux



K-Curve

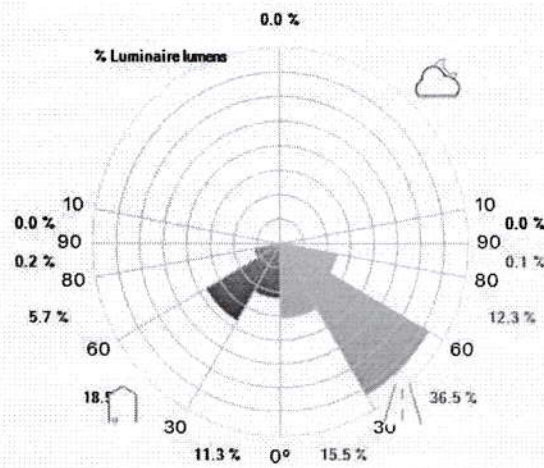


IES Roadway Classification / Nema Classification

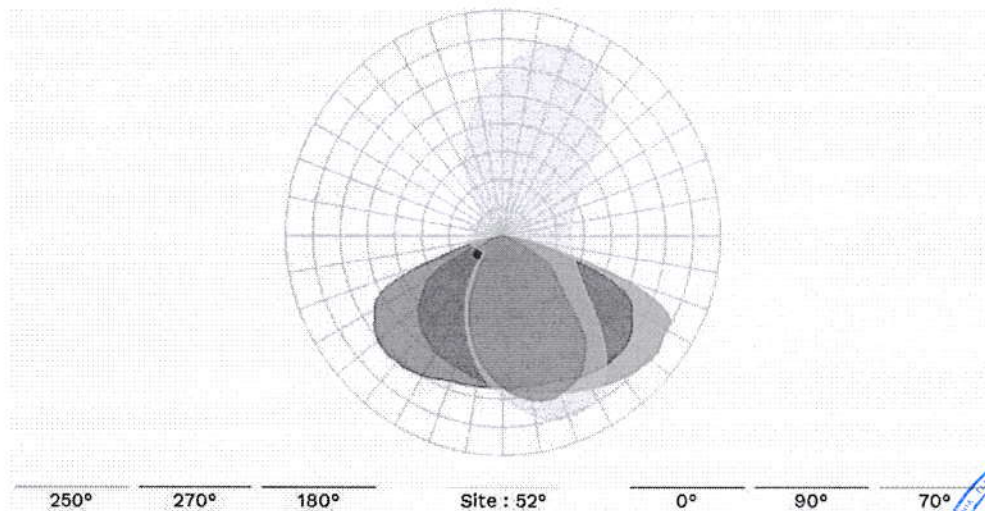


II - Short

Luminaire classification system (LCS)



Intensity diagram in max Cone and in CPlane



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<http://www.schreder.com>



# SGS

## LICENCE

No. 21067

Issued to:  
Applicant:  
**Schreder S.A.**  
Rue de Lusambo, 67  
1190 BRUXELLES  
Belgium

Licensee:  
**Schreder S.A.**  
Rue de Lusambo, 67  
1190 BRUXELLES  
Belgium



Product : flood lighting  
Trade name(s) : SCHREDER  
Type(s)/model(s) : INDU FLOOD-INFLD1a-b-c-2-d-e

The product and any acceptable variation thereto is specified in the annex to this licence and the documents therein referred to.

SGS CEBEC hereby declares that the above-mentioned product has been certified on the basis of:

- a type test according to the standard specified in annex
- an inspection of the production location
- a certification agreement with the number 1173

SGS CEBEC hereby grants the right to use the CEBEC certification mark

The ENEC/CEBEC certification mark may be applied to the product as specified in this licence for the duration of the ENEC/CEBEC certification agreement and under the conditions of the ENEC/CEBEC certification agreement.

This licence is issued on: 27/11/2018

ir. C. Lana,  
Certification Manager



© Only integral publication of this certificate, including the annex, is allowed  
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This certificate is issued by the company under its General Conditions for Certification Services accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitations of liability defined therein and in the Test Report herein mentioned which findings are reflected in this Certificate. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

**SPECIFICATION OF THE CERTIFIED PRODUCT**

**Product data**

Product	:	flood lighting
Trade name(s)	:	SCHREDER
Type(s)/Model(s)	:	INDU FLOOD-INFLD1a-b-c-2-d-e
rated voltage (Un)	:	220-240 V
nature of supply	:	ac
rated frequency	:	50/60 Hz
rated power	:	max. 205 W
rated ambient temperature (ta)	:	Ta: 50°C for 36 W, 70 W, 130 W models Ta: 50°C (outdoor) Ta: 40°C (indoor) for 205 W models
class	:	class I
degree of protection	:	IP66
lamp(s)	:	24-48-88-96 LED LUXEON 5050
resistance to impact	:	IK08

**Additional information**

a= rated power 1 (=36 W), 2 (=70 W), 3 (=130 W), 4 (=205 W)  
 b= NW,WW,CW  
 c= 30,60,90, A  
 d= N,A,D  
 e= blank or SPD

**TESTS**

**Test requirements**

EN 60598-1:2015  
EN 60598-2-5:2015

**Test results**

The test results are laid down in certification file 629975/01.






**Remarks**

This certificate is based on test report No. SHES180700797901.

**Conclusion**

The examination proved that all certification requirements were met.

Reviewed by, project leader : Christian Maes - 27/11/2018

Certification Manager :  2018-11-27

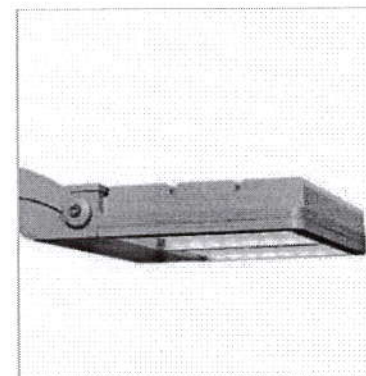
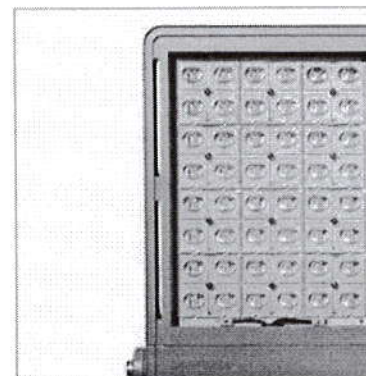
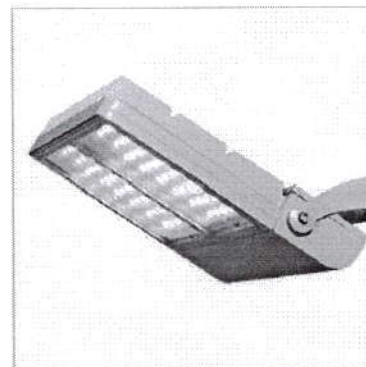
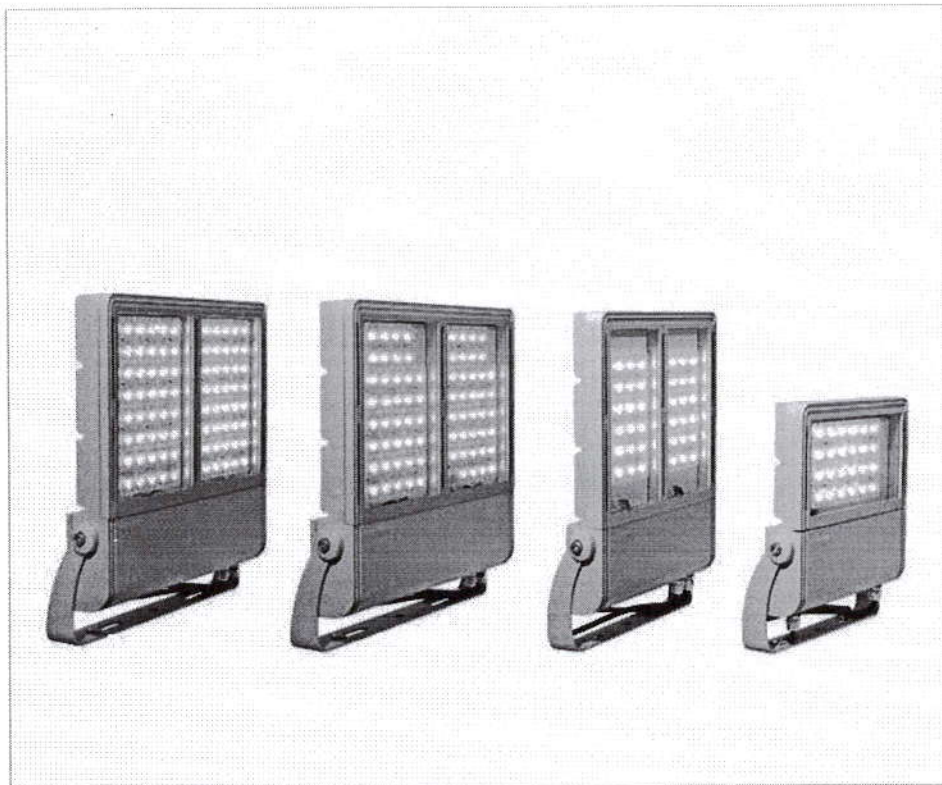


**FACTORY LOCATION(S)**

Hengdian Group Tospo Lighting Co., Ltd.  
Hengdian Electronics Industrial Zone, Dongyang, 322118 Zhejiang, China



# INDU FLOOD



## Efficiency and versatility for indoor and outdoor area lighting

With multiple combinations of lumen packages and light distributions, the INDU FLOOD is the ideal tool to provide an efficient multi-purpose lighting solution in industrial environments.

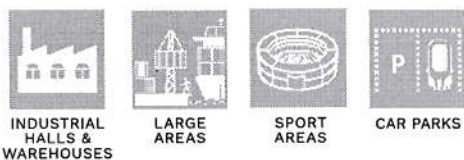
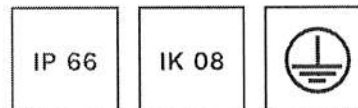
Available in 3 sizes, this compact luminaire perfectly integrates environments to provide the exact lighting requirements of the space to be lit.

Delivered with a mounting bracket, it can be adjusted on-site for a precise optical control.

It is perfect for replacing fixtures with discharge lamps from 50-400W.

It provides a bright white light for excellent visibility and better colour perception, delivering value beyond energy savings.

Its robust design, with a high IP rating, guarantees performance for many years to come even in the harshest conditions.



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## Concept

The INDU FLOOD range combines the energy efficiency of LED technology with photometric versatility. These floodlights are composed of a two-piece housing made of painted die-cast aluminium. The glass protector is sealed onto the front cover. Mounting by means of a fork enables the inclination to be adjusted precisely on-site.

Four models for all applications:

INDU FLOOD 1 with 24 LEDs

INDU FLOOD 2 with 48 LEDs

INDU FLOOD 3 with 88 LEDs

INDU FLOOD 4 with 96 LEDs

The four models of the INDU FLOOD range make it perfect for various typical industrial lighting applications: security check-points, stairs, car and lorry parks, access roads, paths, loading bays and storage areas.

The INDU FLOOD luminaires can be used indoor and outdoor, with direct or indirect lighting. They can be controlled via a DALI or 1-10V interface.



The cooling fins ensure a perfect thermal management, allowing the INDU FLOOD to operate in hot conditions.



Easy integration in building management systems (DALI or 1-10V protocol).

## Types of application

- Industrial halls & warehouses
- Large areas
- Sport areas
- Car parks

## Key advantages

- High efficiency with low operating costs
- 3 sizes and multiple light distributions to replace discharge lamps from 50 to 400W
- One design for aesthetic consistency in multi-purpose applications
- High energy savings compared to systems with traditional discharge lamps
- Dimmable for even more energy savings
- Range of light distributions to ensure the right light
- Long life span thanks to robust design



Four models are available to offer the best solution for any application.



The universal U-bracket includes a graduation system for precise on-site settings.



## GENERAL INFORMATION

Recommended installation height	4m to 12m   13' to 40'
Driver included	Yes
CE mark	Yes
ENEC certified	Yes
ROHS compliant	Yes
Testing standard	LM 79-80 (all measurements in ISO17025 accredited laboratory)

## HOUSING AND FINISH

Housing	Die-cast aluminium
Optic	Polycarbonate
Protector	Glass
Housing finish	Polyester powder coating
Colour	RAL 7040 window grey
Tightness level	IP 66
Impact resistance	IK 08

## DIMENSIONS AND MOUNTING

AxB (mm   inch)	INDU FLOOD 1 – 255x251   10x9.9
	INDU FLOOD 2 – 278x351   11x13.8
	INDU FLOOD 3 & 4 – 382x356   15x14
Weight (kg   lbs)	INDU FLOOD 1 – 3.4   7.5
	INDU FLOOD 2 – 4.8   10.6
	INDU FLOOD 3 & 4 – 7.3   16
Aerodynamic resistance (CxS)	INDU FLOOD 1 – 0.064
	INDU FLOOD 2 – 0.097
	INDU FLOOD 3 & 4 – 0.136
Standard mounting	Universal U bracket

## ELECTRICAL INFORMATION

Electrical class	EU class I
Nominal voltage	220-240V – 50-60Hz
Power factor	> 95% at full load
Surge protection	4/6kV (standard) 10kV (optional)
Electromagnetic compatibility (EMC)	EN 55015:2013/A1:2015, EN 61000-3-2:2014, EN 61000-3-3:2013, EN 61547:2009, EN 62493:2015
Control options	No control (ON/OFF), DALI or 1-10V

## OPTICAL INFORMATION

LED colour temperature	3000K (Warm white)
	4000K (Neutral white)
	5000K (Cool white)
Colour rendering index (CRI)	> 70
Upward Light Output Ratio (ULOR)	0%

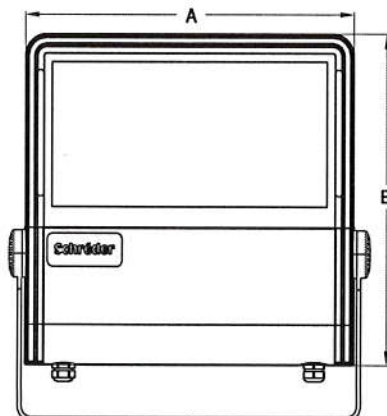
## OPERATING CONDITIONS

Operating temperature range (Ta)	-40 °C up to +50 °C (*) -40 ° F up to 122 ° F (*)
----------------------------------	--

(\*) Depending on the luminaire inclination and driving current. For more details, please contact us.

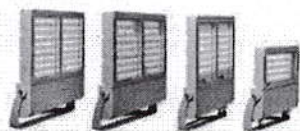
## LIFETIME OF THE LEDS @ TQ 25°C

For all versions	55,000h – L90B10
	110,000h – L80B10



# INDU FLOOD | PERFORMANCE

# Schröder

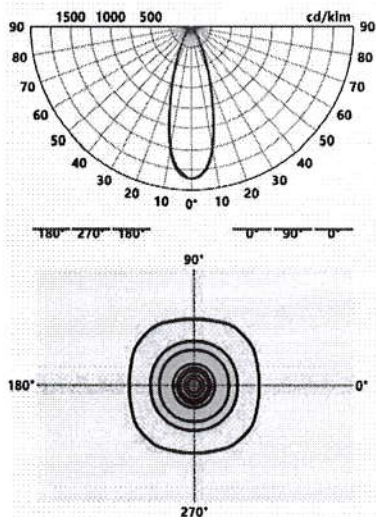


Luminaire	Number of LEDs	Current (mA)	Luminaire output flux (lm) Warm White (3000K) - CRI 70		Luminaire output flux (lm) Neutral White (4000K) - CRI 70		Luminaire output flux (lm) Cool White (5000K) - CRI 70		Power consumption (W)	Luminaire efficacy (lm/W)	Photometry
			Min	Max	Min	Max	Min	Max			
INDU FLOOD 1	24	720	4900	5300	5300	5700	5200	5600	36	160	6486 6487 6488 6489
INDU FLOOD 2	48	700	9400	10200	10300	11100	10000	10800	70	159	6486 6487 6488 6489
INDU FLOOD 3	88	1320	18100	19600	19300	20800	18900	20400	130	161	6486 6487 6488 6489
INDU FLOOD 4	96	1400	28300	30600	30200	32600	29400	31800	205	159	6486 6487 6488 6489

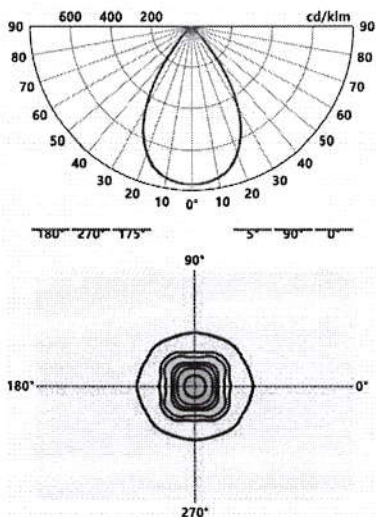
Tolerance on LED flux is  $\pm 7\%$  and on total luminaire power  $\pm 5\%$



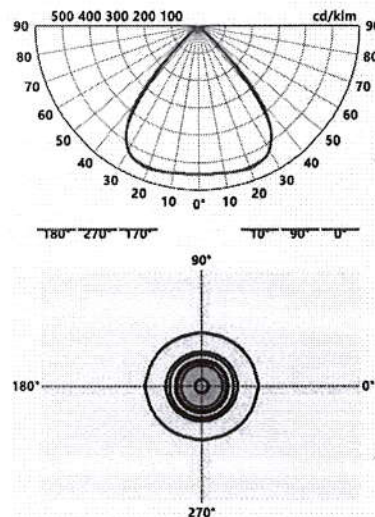
6486 optic - 30°



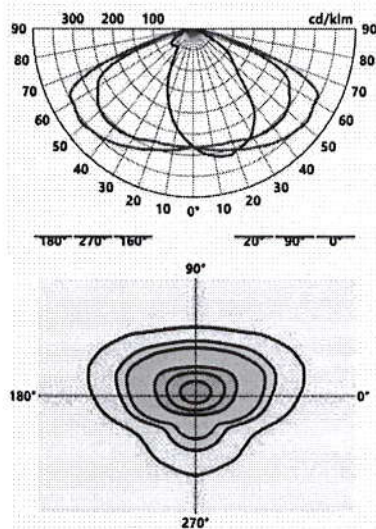
6487 optic - 60°



6488 optic - 90°



6489 optic - Type II



# Lumen maintenance report

## LED information

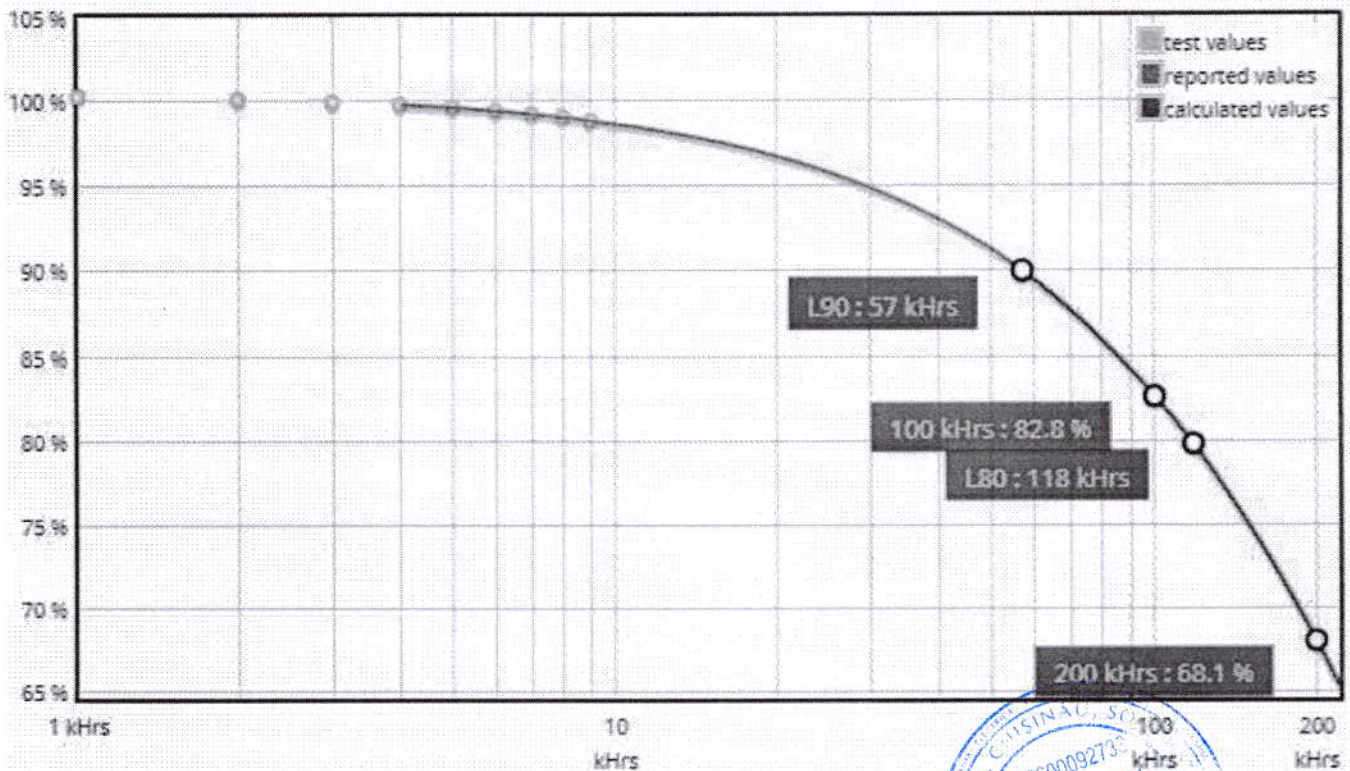
**LED type** LUXEON 5050  
**LED current** 60 mA  
**Ts** 70°C  
**Description** Lumiled IESNA LM-80 test report generated on Wed Mar 28 11:19:34 2018

## Projection data

**Test duration** 9000 hrs **α** 1.953E-006  
**Time used for projection** 4000 to 9000hrs **β** 1.006

L (%)	Time (kHrs)
68.1	200
80.0	117
82.8	100
90.0	57

## Projection graphic



LxB50 results according to LM-80 and TM-21 procedures and norms.

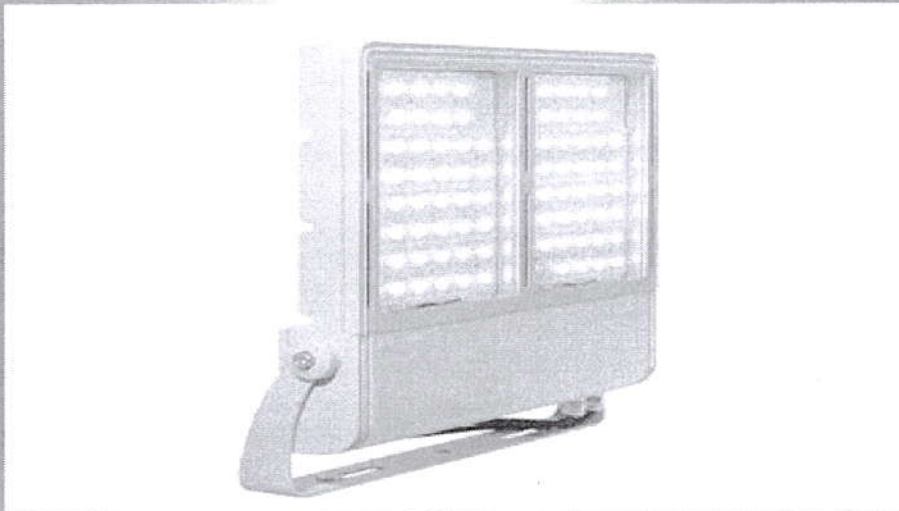
LxBy results derived from LxB50 according to IEC 62717 Annex C.





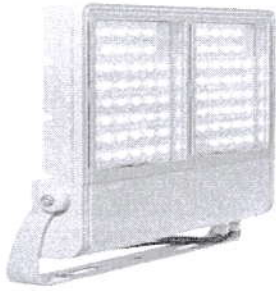
SCHREDER  
PRODUCT  
ENVIRONMENTAL  
PROFILE

INDU FLOOD 3



*Handwritten signature or initials.*

## Product Environmental Profile



### Schröder's environmental commitment

The Schröder Group specialises in outdoor lighting with an energy efficient approach. As a responsible manufacturer, Schröder promotes environmental protection practices.

Our commitment is to reduce the energy consumption of our products, to promote technologies that preserve the environment and to develop new products that are even more energy and eco-efficient.

### Description

The INDU FLOOD 3 luminaire is composed of:

- an aluminium housing equipped with 88 LEDs at a driving current of 1320 mA,
- an electronic power supply,
- a glass protector,
- electric cables.

### Materials

Product weight*:	6.89 kg
Metals (% weight):	71.67 %
Plastics (% weight):	5.9 %
Glass (% weight):	16.7 %
Others (% weight):	5.73 %
TOTAL:	100%

\*Packaging not included

### RoHS-conformity

This product is designed in conformity with the requirements of the RoHS directive: European Directive 2011/65/EU. It does not contain, or in the authorized proportions, lead, mercury, cadmium, hexavalent chromium, flame retardant materials (polybromobiphenyls PBB, polybromodiphenylethers PBDE) as mentioned in the Directive.

### Life Cycle Assessment Scope

#### Functional unit

All calculations are based on one year in the lifetime of the luminaire.

In comparison with products belonging to the same product category, the INDU FLOOD 3 luminaire has a product life span of 25 years.

The environmental analysis has been calculated taking into account the entire life cycle of the product from specifications to dismantling (cradle to grave). The pole is not included in this analysis.

#### Manufacturing

All the materials, processes and transport requirements (from the suppliers to the assembly factory) are carefully examined and integrated into this life cycle step.

#### Distribution

Schröder aims to produce its products where they are sold. Manufacturing close to customers means less energy consumption, less transport and faster deliveries.

Schröder products thereby easily comply with the product distribution scenario established by the PEP. The transport of the luminaire from the factory to the installation site is on average 1000 km by an articulated vehicle.

Schröder also optimises product packaging according to the product weight and volume to reduce energy consumption during transport.

The packaging for the INDU FLOOD 3 luminaire weighs a total of 1.86 kg:

- 1.8kg for the cardboard box,
- 60g for the installation sheet.

#### End of life

The INDU FLOOD 3 luminaire is compliant with the Waste from Electrical and Electronic Equipment Directive 2012/19/EU which aims to minimise the impact of end-of-life electrical and electronic equipment on human health and the environment.

The INDU FLOOD 3 luminaire is recycled in accordance with local and national laws.



## Utilisation

The INDU FLOOD 3 luminaire does not generate any environmental pollution that requires special measures (noise, emissions, etc).

Lamp power: 130W @1320mA

Mode	CLO coefficient	Real Power (W)	Operating hours (h/year)	Electricity consumption (kWh/year)
Full power	No CLO	130	4000	520
Dimming mode 1	0	0	0	0
Dimming mode 2	0	0	0	0
Dimming mode 3	0	0	0	0
Dimming mode 4	0	0	0	0
<b>Total</b>			<b>4000</b>	<b>520</b>

## Environmental impacts

In collaboration with an independent agency specialised in sustainable development strategies, Schröder has established a Life Cycle Assessment tool (InstantLCA) to analyse the environmental impacts of our luminaires, which follows the principles of **ISO 14040:2006**.

Primary data have been directly encoded by Schröder, and secondary data are provided by internationally recognised databases such as **Ecoinvent v2.2**.

This assessment takes into account the manufacturing (including the processing of raw materials), transport, utilisation due to electric consumption and maintenance and the end-of-life phases.

For the utilisation phase, the following assumptions were made:

- Life span: 25 years
- Electrical power model: electrical mix of Europe
- Operating hours: 4000 hours/year
- Lamp replacement: LED relamping every 25 years

Results expressed for one year of use:

Indicators	Unit	Life cycle assessment	Manufacturing	Distribution	Utilisation		End-of-life
					Electricity	Maintenance	
Non renewable resources depletion	Person-reserve	<b>0.0183</b>	25.4%	0.2%	71.2%	7.9%	-4.6%
Energy consumption	MJ	<b>5682</b>	1.9%	0.2%	97.9%	0.6%	-0.5%
Water consumption	m <sup>3</sup>	<b>1.8385</b>	3.1%	0.3%	95.9%	1.2%	-0.5%
Greenhouse effect	Kg eq CO2	<b>256.6</b>	2.4%	0%	97.4%	0.8%	-0.6%
Ozone depletion	Kg eq CFC11	<b>1.716E-05</b>	2.9%	0.2%	96.2%	1.3%	-0.5%
Human toxicity	CTU	<b>8.965E-06</b>	8.2%	0.2%	87.9%	2.3%	1.5%
Water toxicity	CTU	<b>19.8795</b>	16.1%	0.6%	84.3%	3.8%	-4.8%
Photochemical ozone creation	Kg NMVOC	<b>0.5746</b>	2.8%	0.3%	96.5%	1.2%	-0.8%
Air acidification	Kg eq H+	<b>0.9883</b>	3.1%	0.1%	96.4%	1.2%	-0.9%
Eutrophication	Kg eq PO	<b>0.0993</b>	4.9%	0.3%	94.2%	2.1%	-1.5%
Hazardous waste production	Kg	<b>0.0188</b>	3%	0%	41.1%	0.6%	55.2%

The most significant impact of a luminaire on the environment lies in its utilisation phase, and more specifically, in the energy consumed. Schröder focuses the greatest proportion of its efforts on developing products which consume less energy for more performance.



## Glossary

<b>Acidification</b>	The acid substances present in the atmosphere are carried by rain. A high level of acidity in the rain can cause damage to forests. The contribution of acidification is calculated using the acidification potentials of the substances concerned and is expressed in kilogram equivalent of H+.
<b>Energy Consumption</b>	This indicator gives the quantity of energy consumed, whether it be from fossil, hydroelectric, nuclear or other sources. This indicator takes into account the energy from the material produced during combustion. It is expressed in MJ.
<b>Eutrophication</b>	Excessive enrichment of water surfaces with nutrients, and the associated adverse biological effects (perturbation of the aquatic medium). Impacts are expressed in gram equivalent PO43-.
<b>Functional Unit</b>	A functional unit is the measurement unit to which all results listed in the PEP refer. That measurement serves as the basis for comparison to compare the data presented in two or more PEPs for products belonging to a specific category of homogeneous goods/services, i.e. the same Product Category Rule.
<b>Greenhouse Effect</b>	Warming of the atmosphere due to the reduction in outgoing long wave heat radiation resulting from their absorption by gases such as carbon dioxide, methane, etc. It is expressed in gram equivalent CO2.
<b>Hazardous Waste</b>	This indicator calculates the quantity of specially treated waste created during all the life cycle phases (manufacturing, distribution and utilisation). For example, special industrial waste in the manufacturing phase, waste associated with the production of electrical power, etc. It is expressed in kg.
<b>Human toxicity</b>	The degree to which a chemical substance elicits a deleterious or adverse effect upon the biological system of human exposed to the substance over a designated time period. It is expressed in CTU (chronic toxicity unit).
<b>InstantLCA</b>	Software provided by RDC Environment to model environmental impacts based on the Life Cycle Assessment methodology.
<b>Life Cycle Assessment</b>	Life Cycle Assessment (LCA) is a methodology governed by the ISO 14040 series that aims to quantify the energy and environmental load of the life cycle of a product or activity, through the quantification of energy and waste materials and emissions (solid, liquid and gaseous) released into the environment from the extraction of raw materials to final waste disposal.
<b>Ozone Depletion</b>	This indicator defines the contribution to the phenomenon of the disappearance of the stratospheric ozone layer due to the emission of certain specific gases. The effect is expressed in kilogram equivalent of CFC-11.
<b>Photochemical ozone creation</b>	This indicator quantifies the contribution to the "smog" phenomenon (the photochemical oxidation of certain gases which generates ozone) and is expressed in gram equivalent of NMVOC (Non-methane volatile organic compounds).
<b>Non renewable resources depletion</b>	This indicator quantifies the consumption of raw materials during the life cycle of the product, thereby lowering their availability for future generations. It is expressed in person-reserve, meaning the quantity of the resource available to an average world citizen.
<b>Water Consumption</b>	This indicator calculates the volume of water consumed, including drinking water and water from industrial sources. It is expressed in m <sup>3</sup> .
<b>Water Toxicity</b>	Potential environmental toxicity of residues, leachate, or volatile gases to the biocenosis of plants and animals. Ecotoxic substances alter the composition of the species of ecosystems, destabilizing it thereby and additionally threatening sensitive species in their existence. It is expressed in CTU (chronic toxicity unit).
<b>WEEE waste</b>	For the products in the scope of the European Directive concerning WEEE wastes (2012/19/EU), part of the product that has to be treated selectively regarding the appendix I of the Directive.



# Tightness test

## General information

Subject : INDU FLOOD 2

Asked by : BECSKE Imre

Created on : 28/06/2018

Test number : D180467

Reference norm : IEC/EN 60598-1 Standard

Sample(s) : E180344

Folder : P-F18047

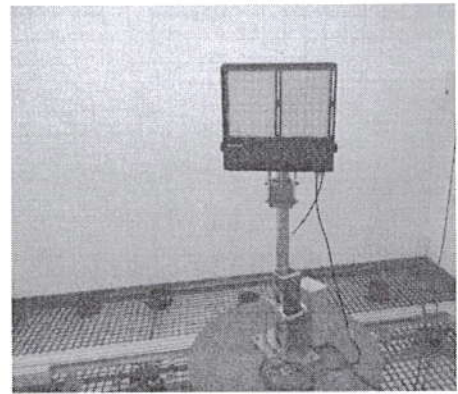
## Test conditions

Luminaire : -

Number of LED : 48


Protector Material : Glass Clear

Operator : KOY Fiston



PHOTOGRAPH

## Conclusion

 Success

IPX6 granted.

Duplicate to : VERBEECK Philippe, BECSKE Imre, Collard Cédric

LAB : 05/07/2018

Maghe Laurent



D180467

1/2

## IPX6

### Test(s)

Name	Description	Result
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 pressure: 1 kg/cm<sup>2</sup></li><li>- Spraying distance: 3 m</li><li>- Duration of test: 3 minutes</li></ul>	Success

## IPX6

### Result(s)

OK, nothing to indicate



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**LED Flux measurement**

FORM-L-41 ED1 REV 1

Date : 19-09-18

Operator : FCE

Filename : 2018\_551.xml



226 - TEST

NBN EN ISO/IEC 17025 : 2005

**LEDs**

Trademark : Lumileds

Entry number : 38R229

Type : LUXEON 5050

Power (Catalogue) : 0,00 W

BIN Description : Unknown

Flux : 0 lm/LED

Part number : Unknown

Color or CCT (Theoretical) : NW

Number of LEDs : 24

**Lenses**

Trademark : None

Type : None

**Power & Print**

Type : DELTA SM400-AR-4

Print description : induflood 1 - 24 leds

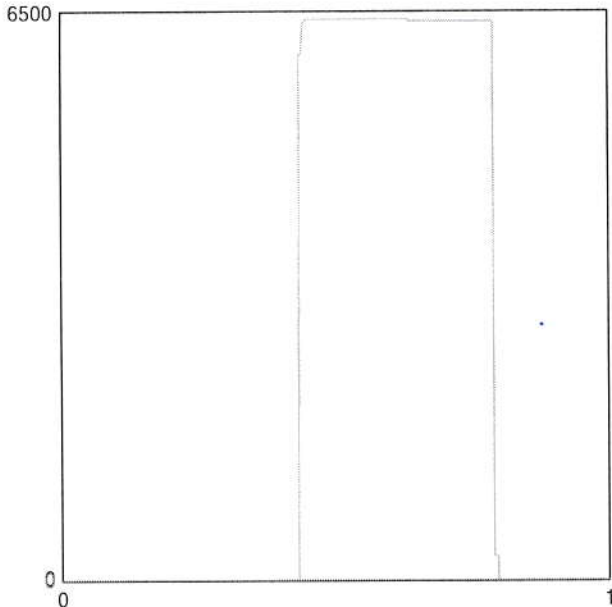
Active

**Picture**



### Sphere photometric measurement

Maximum flux :  lumens



### Operating condition

Position in sphere :



Ambient sphere T ° : **24,2**

### Electrical measurement

#### ● Secondary electrical measurement

Voltage : **44,70** V

Current : **0,724** A

Power : **32,35** Watt

→ LEDs light efficiency at 25° :

**198,6** lm/W

**267,7** lm/Led

#### ● Primary electrical measurement

Voltage : **N/A** V

Current : **N/A** A

Power : **N/A** Watt

Cos φ : **N/A**

→ Driver losses : **N/A** %

→ LEDS & Driver light efficiency :

**N/A** lm/W

Description :

Flux @ 25°/0.724A as gonio measurement - pcb INDUFLOOD 1 - 24 Luxeon 5050 NW

Comment :

FORM-L-41 ED1 REV 1



226 - TEST

NBN EN ISO/IEC 17025 : 2005

Approved by :



LED 2018/551 2/3



# Colorimetry



226 - TEST

NBN EN ISO/IEC 17025 : 2005

File: Preset - Options - Extra Calibration Info
Preset: CRI

Auto: ref illuminant - Planckian radiator CCT=3814 K

Auto: ref illuminant - Planckian radiator CCT=3814 K

Chromaticity difference  $D_c = 4.2E-3$

CRI color samples	JIS color sample
R1=67.5	R9=51.2
R2=77.8	R9=-31.9
R3=85.9	R10=47.0
R4=69.5	R11=63.7
R5=66.4	R12=35.1
R6=67.8	R13=69.1
R7=81.8	R14=91.8
	R15=60.5

Ra= 70.99 (mean value of R1 - R9)

Re= 60.21 (mean value of R1 - R15)

Transfer data to table  auto

Luminance  $L_v$  1.052E-3  $\frac{cd}{m^2}$

Radiance  $L_p$  2.0658E-10  $\frac{W}{m^2 \cdot nm}$

Corr. Color Temp CCT 3814 K

Chromaticity x 0.36926 y 0.39335

Chromaticity u' 0.2264 v' 0.5106

Target

Calibrator File: 01 00 0000000000

Measurement Mode: Radiance

Weighting Functions: None

Average C1

Measurement  Cont  Hold Integration Time  Quick mode

**QUIT**



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### RTECH-PHOTOMETRY LABORATORY

Testreport : Measurement of luminous intensity distribution related to the standard  
 NBN-EN 13032-1; NBN-EN 13032-4; CIE 121-1996; CIE S 025/E; IES LM-79-08 and procedures PT-P-01  
 and PT-P-02

rue de Mons, 3 B-4000 LIEGE - Tel : 04/224.71.40 - Fax : 04/224.25.90  
 Measurement for Schröder group.



Origin OEM Tospo		Production OEM Tospo		Luminaire INDU FLOOD1 1		Inclination 0°		Request # FD38145	
Source									
Type LED	BIN Unknown		Trademark Lumileds		Reference LUXEON 5050		# LEDs 24		Reflector 6489
Reflector									
Master	OEM Tospo Led assembly Medium Assembled 0.0°								No 6489
Protector Refractor Lens									
Protector Glass Extra Clear Flat Smooth									
Lens OEM Tospo Asym									
Laboratory observation									
INDU FLOOD1 1 - 24 Lumiled LUXEON 5050 - Neutral White Used flux for efficiency matrix calculation = 6425 lm - CCT = 3814 K - CRI = 70.99 (see sphere test report 2018/551) on appendix. Measured @0.724A (1 gonio)									
Purpose DOC					Sample date 06-09-2018			Sample # 38R229	
Observation									
DOC as described Fixture powered by MeanWell ELG-75-C1050DA									



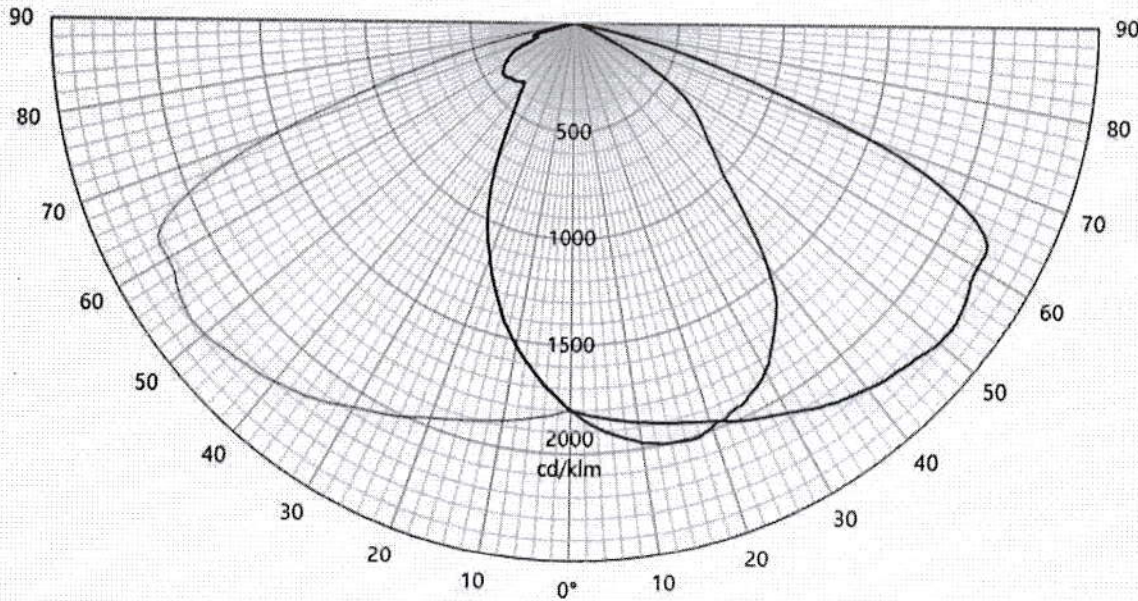
Asked by LME	Measured by CLD	Approved by LME	Appendix 1	<b>226-TEST</b> NBN EN ISO/IEC 17025 : 2005	<b>41840</b>
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### LUMINOUS INTENSITY DIAGRAM

Origin OEM Tospo		Production OEM Tospo		Luminaire INDU FLOOD1 1		Inclination 0°	Request # FD38145
Source	Type LED	BIN Unknown	Trademark Lumileds	Reference LUXEON 5050	# LEDs 24	Reflector 6489	
Reflector	OEM Tospo Led assembly Medium Assembled 0.0°					No	6489
Matrices	418401	Φ 0-90° = 5350lm - 90-180° = 0lm				Absolute measurement	
Protector Refractor Lens	Protector Glass Extra Clear Flat Smooth - INDU FLOOD1 1 Lens 24 x OEM Tospo Asym						
Observation	Matrix in total flux @0,724A  Electrical measurement on LED (#1): Voltage = 44.62 V    Current = 0.724 A    Power = 32.310 W Electrical measurement on driver (#1): Voltage = 230.00 V    Current = 0.172 A    Power = 35.970 W    PF = 0.909 <b>Total luminaire power = 35.97 W : Lm/Watt = 148.74 lm/W</b>  Driver #1 : MW (Mean Well) ELG-75-C1050DA .						

Plane	I Peak	Peak position	Index	I zero	Laboratory ambient t°	Measurement date	↕
20 - 160	2290	52	S	1798	24.7°	12-09-2018	
90	2013	17	D				
270	1798	0	G				



41840

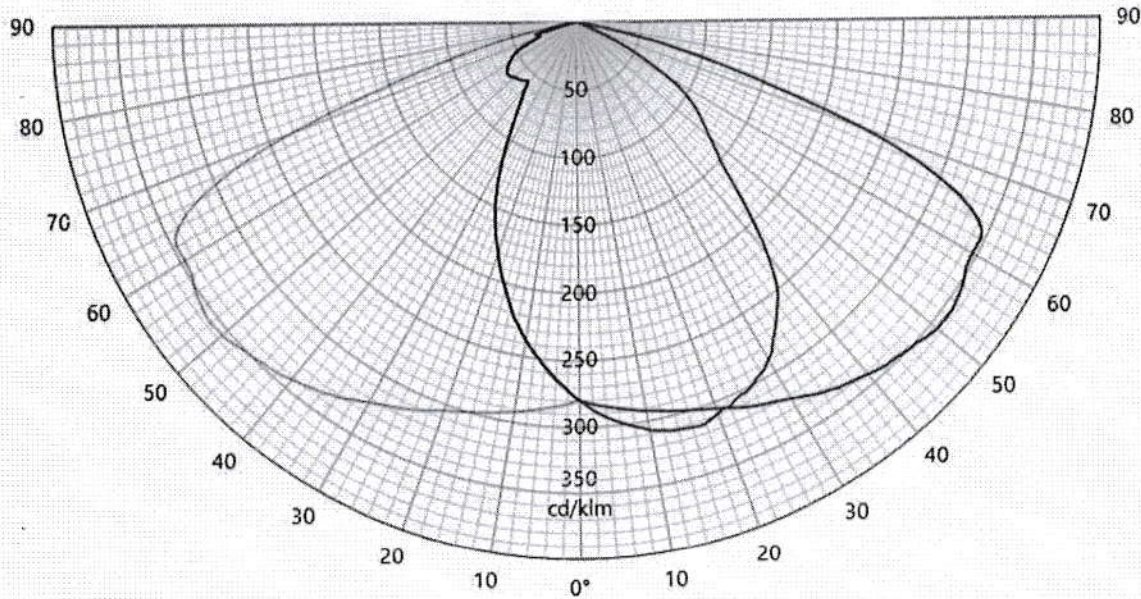


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### LUMINOUS INTENSITY DIAGRAM

Origin OEM Tospo		Production OEM Tospo		Luminaire INDU FLOOD1 1		Inclination 0°		Request # FD38145	
Source	Type LED	BIN Unknown	Trademark Lumileds	Reference LUXEON 5050	# LEDs 24	Reflector 6489			
Reflector	OEM Tospo Led assembly Medium Assembled 0.0°					No		6489	
Matrices	418402	η 0-90° = 83.3% - 90-180° = 0.0%				Relative measurement			
Protector Refractor Lens	Protector Glass Extra Clear Flat Smooth - INDU FLOOD1 1 Lens 24 x OEM Tospo Asym								
Observation	Matrix in efficiency @0.724A  Electrical measurement on LED (#1): Voltage = 44.62 V Current = 0.724 A Power = 32.310 W Electrical measurement on driver (#1): Voltage = 230.00 V Current = 0.172 A Power = 35.970 W PF = 0.909 <b>Total luminaire power = 35.97 W</b>  Driver #1 : MW (Mean Well) ELG-75-C1050DA .								

Plane	I Peak	Peak position	Index	I zero	Laboratory ambient t°	Measurement date	↕
20 - 160	356	52	S	280	24.7°	24-09-2018	
90	313	17	D				
270	280	0	G				



41840



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### CONFORMITY STATEMENT

Measurement fulfil Standards:

- NBN-EN 13032-1
- NBN-EN 13032-4
- NBN-EN 17025:2005
- CIE 121-1996
- LM79-08
- CIE S 025

Measurement quantities measured:

- Light distribution in relative or absolute photometry
- Led alone cold lumen package
- Led CCT and CRI
- Power consumption of the fitting
- Lm/watt

Electrical measurement, If not specified:

- Primary values are AC with 50Hz frequency
- Secondary values on SSL are DC

CCT, CRI and chromaticity coordinates: are Measured on sphere.  
if specified Main test report refer to sphere extra test report.

Light distribution : are measured on gonio. If no other specified measurement is done at 50 Hz

Number of hours operated prior to measurement: If no other specified, 0 hours (no aging)

Stabilization time: If no other specified, a minimal stabilization time of 0.5 hour is applied.  
Measurement will start when it exist no more variation above 0.5% in 15 minutes

Total operating time of the product including stabilization:  
45 minutes have to be added by measurement.  
Minimal operating time is 75 minutes

Luminous intensity distribution: available on electronic file with  
.mat format (internal schreder format)  
.ldt format (European standard)  
.IES format (American standard)

Statement of uncertainties (K=2 95% of confidence level):  
Uncertainties calculated based on a typical Schréder fitting and PCBA

- Intensity measurement: +/- 3%
- Angle: +/- 0.5°
- Flux: +/- 2.5%
- Electrical DC
  - Power: +/- 0.25%
  - Voltage: +/- 0.15%
  - Current: +/- 0.15%
- Electrical AC
  - Power: +/- 0.15%
  - Voltage: +/- 0.3%
  - Current: +/- 0.3%
- Temperature: +/- 0.65%
- ISP2000 CCT: +/- 5%      JETI +/-7.5%
- CRI: +/- 2%         +/-2.75%
- x/y: +/- 2%         +/-4.6%
- lm/Watt: +/-3.5%



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## Measuring instruments in use:

## Gonio 1

Type C with Moving mirror

Manufacturer: LMT Lichtmesstechnik GmbH Berlin, Helmholtzstrasse 9 10587 Berlin, Germany

Type: GO-DS 2000

Calibration: traceable to PTB (Physikalisch-Technische Bundesanstalt D-Braunschweig) and METAS (Federal Institute of Metrology, CH-Bern)

Photometric test distance: By default 10 meter, on request 30 meter.

## Gonio 2

Type C

Manufacturer: Technoteam Bildverarbeitung, Werner-von-Siemens-Strasse 5 98693 Ilmenau, Germany

Calibration: traceable to BIPM (Bureau International des Poids et Mesures F-Sèvres)

Photometric test distance: Near Field

## Sphere n°1

4p geometry

Manufacturer: LMT Lichtmesstechnik GmbH, Helmholtzstrasse 9 10587 Berlin, Germany

Type: UL2000 + U1000 V-Lambda photometer

Calibration: traceable to BIPM (Bureau International des Poids et Mesures F-Sèvres)

## Sphere n°2

4p geometry

Manufacturer: Instrument Systems GmbH, Neumarkter Str. 83, 81673 Muenchen, Germany

Type: ISP2000 + Spectroradiometer CAS120 and CAS140

Calibration: traceable to NIST

## Colorimetric portable spectroradiometer

Manufacturer: JETI Technische Instrumente GmbH, Tatzendpromenade 2 07745 Jena

Type: SPECBOS 1201

Calibration: traceable to NIST

## Multimeters

Manufacturer: Agilent

Type: 34401A

Calibration: traceable to BIPM (Bureau International des Poids et Mesures F-Sèvres)

## Wattmeters

Manufacturer: Yokogawa

Type: WT210 and WT310

Calibration: traceable to BIPM (Bureau International des Poids et Mesures F-Sèvres)

## Thermometers

Manufacturer Amarell Precision

Type: Liquid in glass N63833

Calibration: traceable to LBT (Laboratoire Belge de Thermométrie)

