

Copie – Extrase din raportul original, pentru prezentare cu iscalitura electronica.  
Originalul documentului prezentat adaugator.

FORM-L-01 V1

Printed on 08-06-2023


### SCHREDER-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.

**LED**

Origin Schröder Magyarország Zrt.		Production Schröder Magyarország Zrt.		Luminaire IZYLUM LT 3	Inclination 0°	Request # FD44117
Source						
Type LED	BIN LVL2 103	Trademark Seoul	Reference 5050	# LEDs 144	Reflector 5439	
Master		Reflector Schröder Led assembly Medium Assembled 0.0°				No 5439
Protector Refractor Lens						
Protector Glass Extra Clear Flat Smooth		Lens Vossloh-Schwabe 5439				
Laboratory observation						
IZYLUM LT 3 with 144 SEOUL 5050 NW740. Used flux for efficiency matrix calculation = 32225lm - CCT = 3866 K - CRI = 72,0 measured @DC out 600mA (200mA in led)/25°C (see sphere test reports 2022/550 to 553 on appendix).						
Purpose DOC			Sample date 01/06/2023		Sample # 43R235	
Observation						
DOC IZYLUM LT 3 HIFLEX 2, lenses 5439.  Flux coefficient multiplicator (only for efficiency matrix): From 600 to 200 mA : 0,350 From 600 to 350 mA : 0,600 From 600 to 500 mA : 0,847 From 600 to 730 mA : 1,189						
Notes						
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.						

Asked by VLG	Measured by AUL	Approved by RLABO	Appendix 1	  <b>713-TEST</b> NBN EN ISO/IEC 17025 :2017	56278
-----------------	--------------------	----------------------	---------------	---	-------

### LUMINOUS INTENSITY DIAGRAM

Origin Schröder Magyarország Zrt.		Production Schröder Magyarország Zrt.		Luminaire IZYLUM LT 3		Inclination 0°		Request # FD44117	
Source	Type LED	BIN LVL2 I03	Trademark Seoul	Reference 5050	# LEDs 144	Reflector 5439			
Reflector	Schröder Led assembly Medium Assembled 0.0°					No		5439	
Matrices	562786 $\Phi$ 0-90° = 34452lm - 90-99° = 0lm					Absolute measurement			
Protector Refractor Lens	Protector Glass Extra Clear Flat Smooth - IZYLUM LT 3 Lens 144 x Vossloh-Schwabe 5439								
Observation	<p>Matrix in total flux with driver prog. @730mA (243mA/led)</p> <p>Electrical measurement on LED (#1): Voltage = 263.59 V Current = 0.730 A Power = 192.30 W                      Electrical measurement on driver (#1): Voltage = 230.00 V Current = 0.901 A Power = 203.08 W PF = 0.981  <b>Total luminaire power = 203.08 W : Lm/Watt = 169.65 lm/W</b></p> <p>Driver #1 : MOSO DRIVER_MOSO_U6_200W_105-1,050mA_220-240V_DALI_C170_out: 143-286Vdc ; 105-1050mA ; 200W PCBA: HIFLEX2</p>								
Plane	I Peak	Peak position	Index	I zero	Laboratory ambient t*	Measurement date		↕	
25 - 155	15520	37	S	10782	25.2°	07/06/2023			
90	14394	17	D						
270	10782	0	G						
									56278

## INFORMATION

### Measurement fulfil Standards:

NBN-EN 13032-1  
NBN-EN 13032-4  
NBN-EN 17025:2017  
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 in Ulbricht sphere.  
If specified Main test report refer to sphere extra test report.

Light distribution are measured on gonio. If not otherwise specified, measurement is done at 50 Hz

Number of hours operated prior to measurement: if not otherwise specified, 0 hours (no aging).

Stabilization time: If not otherwise specified, a minimal stabilization time of 0.5 hour is applied; and measurement will start when it exists 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 Schröder format)  
.ldt format (European standard)  
.IES format (American standard)

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

Intensity measurement: +/- 3.5%  
Angle: +/- 0.5°  
Flux: +/- 2.5%  
Electrical DC  
Power: +/- 0.15%  
Voltage: +/- 0.10%  
Current: +/- 0.20%  
Electrical AC  
Power: +/- 0.20%  
Voltage: +/- 0.10%  
Current: +/- 0.15%  
Temperature: +/- 0.65%

ISP2000	JETI	
CCT:	+/- 5%	+/-7.5%
CRI:	+/- 2%	+/-2.75%
x/y:	+/- 2%	+/-4.6%

lm/Watt: +/-3.4%

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

Amarell Precision

Type: Liquid in glass N63833

Calibration: traceable to LBT (Laboratoire Belge de Thermométrie)

————— End of test report —————