

TEST REPORT

No. 2231724/1 dated 22.08.2024

FACTOR LED 1M

Type of Testing: Performance testing in accordance with DIN 18032-3:2023-12
– Sports halls, Halls and rooms sports and multi-purpose-use –
Part 3: Testing of safety against ball throwing

Applicant: **Lena Lighting S.A.**
ul. Kórnicka 52
63-000 Sroda Wlkp.
Poland

Test Institute: **ISP GmbH**
Institut für Sportstättenprüfung
Amelunxenstraße 65
48167 Münster
Germany

Order No.: 2231724

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By the Deutsche Akkreditierungsstelle (DAkkS) DIN EN ISO/IEC 17025:2018 accredited testing laboratory.

The accreditation covers only the test methods listed in the D-PL-20181-01-00 accreditation certificate.

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IBAN DE22 4036 1906 0084 6989 00

MANAGEMENT
Dennis Frank
COMMERCIAL REGISTER
HRB 208985
Local Court of Osnabrück

TAX NUMBER
337 / 5945 / 0518
VAT No. DE297978054

Test Location: **ISP GmbH**
Institut für Sportstättenprüfung
Amelunxenstraße 65
48167 Münster
Germany

Date of arrival: 22.07.2024

ISP-Sample-No.: 2231724/1

Sampling: No sampling by employees of ISP GmbH,
Sample has been provided by the applicant.

Date of the Testing: 08.08.2024

1. Sample description

The tested wall luminaire **FACTOR LED 1M** had the dimensions of approximately 380 mm x 200 mm x 150 mm.

According to the applicant's instructions, the wall luminaire was installed force-fit with a wall bracket onto the test wall of the ISP GmbH test laboratory.



Picture 1: Frontal view



Picture 2: View of the back



Picture 3: View of the product label

2. Test procedure

The safety against ball throwing test has been conducted in accordance with DIN 18032-3:2023-12 paragraph 6.3 – testing of wall elements with a ball shooting device, of which the air pressure can be regulated manually. The ball shooting device has been adjusted to the specified impact velocity.

The testing of impact resistance for ceiling elements was conducted in accordance with the requirements for category W1 under the following conditions:

Ball	Impact velocity	Angle	Number of impacts
Handball	85 km/h	90°	30
	85 km/h	45°	12
	85 km/h	45°	12

The testing climate of 23/50-2 met the requirements of DIN EN ISO 291:2008-08.

3. Test results

Ball	Impact angle	Number of impacts	Changes in the element
Handball	90	30	Minor deformation of the front mesh
	45	12	
	45	12	



Picture 4: View of the deformed front mesh

4. Evaluation

The evaluation is based on the requirements of DIN 18032-3:2023-12. The Evaluation is carried out through visual assessment.

The ceiling, wall or built-in elements, or parts thereof, must not have been destroyed during the test, or have fallen or fallen out. The test elements, including the substructures and fastenings, may only have changed their appearance slightly after being tested and their stability, function and safety must not be impaired.

The tested wall luminaire **FACTOR LED 1M** withstood the testing of safety against ball throwing without any damage. Therefore, the system is classed as **safe against ball throwing for ceiling elements in accordance with DIN 18032-3:2023-12, category W1, for wall elements (ballwurfsicher nach Kategorie W1 für Wandelemente).**

END OF THE TEST REPORT

The measurement results were stated and evaluated without the measurement uncertainty.

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The test results relate only to the tested samples in the condition as they were received.

This test report was created and released digitally. Effectiveness and validity are equivalent to digital and analogue reports.

Münster, 22.08.2024



Dennis Frank
MANAGING DIRECTOR



TEST REPORT

No. 2247524/1 dated 12.11.2024

FACTOR LED 4M

Type of Testing: Performance testing in accordance with DIN 18032-3:2023-12
– Sports halls, Halls and rooms sports and multi-purpose-use –
Part 3: Testing of safety against ball throwing

Applicant: **Lena Lighting S.A.**
ul. Kórnicka 52
63-000 Sroda Wlkp.
Poland

Test Institute: **ISP GmbH**
Institut für Sportstättenprüfung
Amelunxenstraße 65
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Order No.: 2247524

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MANAGEMENT
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VAT No. DE297978054

Test Location: **ISP GmbH**
Institut für Sportstättenprüfung
Amelunxenstraße 65
48167 Münster
Germany

Date of arrival: 24.10.2024

ISP-Sample-No.: 2247524/1

Sampling: No sampling by employees of ISP GmbH,
Sample has been provided by the applicant.

Date of the Testing: 30.10.2024 – 11.11.2024

1. Sample description

The tested wall luminaire **FACTOR LED 4M** had the dimensions of approximately 380 mm x 800 mm x 150 mm.

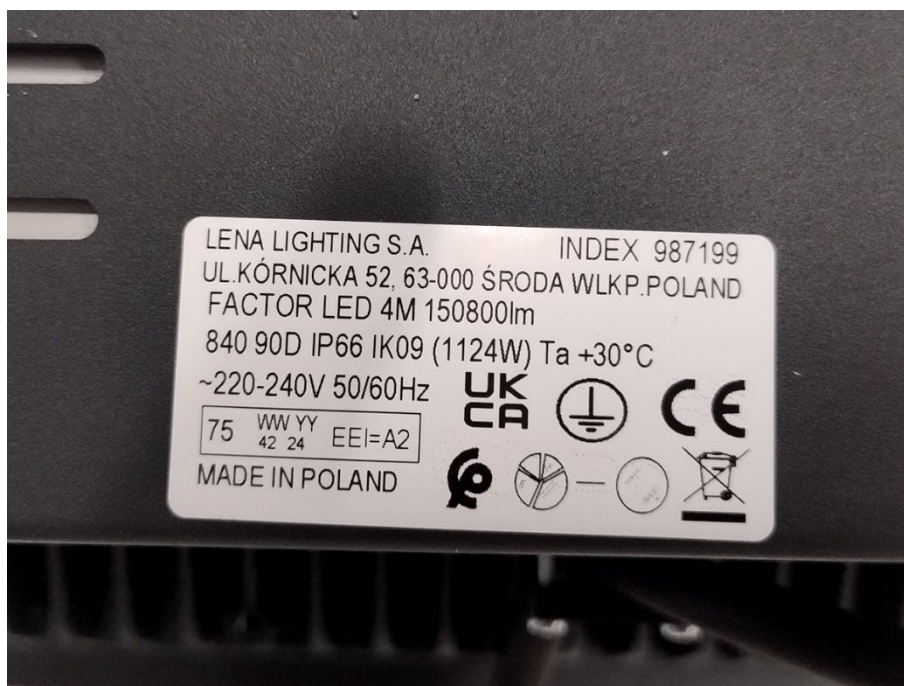
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END OF THE TEST REPORT

The measurement results were stated and evaluated without the measurement uncertainty.

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Münster, 12.11.2024



Paul Dück
TECHNICAL DIRECTOR

