



DAkkS
Deutsche
Akkreditierungsstelle
D-PL-11027-04-01
D-PL-11027-04-02

Test Report

Testing of safety against ball throwing

Report-No.:	903 9832/2/Sgm
Client:	LUMENIA d.o.o. Kandrše 7 1252 Vače Slowenien
Order-No. (Client):	-
Order-No. (MPA):	903 9832 000
Test Item:	LED luminaire “H LUM (ST/PR.396)”
Specification Applied:	[1] DIN 18032-3:2018-11 Sports halls – Halls for gymnastics, games and multi-purpose use-Part 3: testing of safety against ball throwing [2] DIN EN 13964:2014-08 Suspended ceilings – Requirements and test methods
Date of Receipt of Test Item	2021-03-22
Date of Test:	2021-03-30
Date of Report:	2021-04-13
Page 1 of	3 text pages
Enclosures :	2
Supplements:	
Total Number of Pages:	5
Number of Reports:	2

The test results relate only to the items tested.

Publication of this report in full or partly is only allowed with written authorization by MPA University of Stuttgart.
In compliance with DIN EN ISO/IEC 17025 accredited Testing Laboratory recognized by Deutsche Akkreditierungsstelle (DAkkS).
Accreditation valid for testing methods listed in the certificates.

1 Purpose of Investigation

With writing of 2021-03-16 you ordered the Materials Testing Institute University of Stuttgart with the testing of the safety against ball throwing on a led luminaire according to DIN 18032-3 [1], as well as testing of impact-resistance according to DIN EN 13964 [2], Annex D.

2 Tests and Analyses Performed

2.1 Description of the test item

The element investigated was the LED luminaire,

“H LUM (ST/PR.396)”

The tested luminaire had the dimensions of 405 mm x 590 mm x 89 mm.

Housing luminaire:	Aluminium AW6060 T6, thickness 2.6 mm – 3.0 mm
Bottom Cover:	ABS, thickness 3.0 mm
Side Cover:	PC/ABS Lupoy GN5001RF, thickness: 3.0 mm, connected to housing with 4 screws M8x16 mm, slut nut M8, washer M8 (curved spring inox)
Diffuser:	PMMA, thickness 8 mm
L-bracket:	steel, thickness 3 mm
U-bracket:	steel, thickness 3 mm
Connection L-bracket/housing:	2 screws type M8x16 mm, nut M8, washer M8 (curved spring inox) and washer M8
Connection L-bracket/U-bracket:	4 screws type M8x16 mm, nut M8, washer M8 (curved spring inox) and washer M8

2.2 Execution of the tests and analyses

The test was performed according to DIN 18032-3 [1], and according to DIN EN 13964 [2], Annex D (accredited test methods according to DIN EN ISO / IEC 17025, see DAkkS-certificate D-PL-11027-04-07). For the assessment of conformity, the uncertainty of measurement results shall not be taken into account.

The tests were performed in a laboratory at room temperature.

3 Results of Investigation

Table 1: Results of determination of safety against ball throwing according to DIN 18032-3 [1] on the LED luminaire "H LUM (ST/PR.396)"

Ball	Impact angle in degree	Number of tests	Deterioration of test item
Handball	90	12	none
Handball	60	12	
Handball	60	12	

The tested installation element passed the test without damage.

Therefore the element can be evaluated as safe against ball throwing according to DIN 18032-3 [1], as well as impact-resistant according to DIN EN 13964 [2], Annex D, for the Class 1A (impact speed $16,5 \pm 0,8$ m/s).

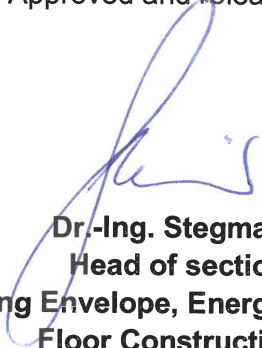
The test report is valid for an indefinite period of time, provided that no changes are made to the components produced and marketed in comparison to the tested installation element. Any change in the installation element in comparison to the tested variant will invalidate the test report and necessitate a new inspection of the installation element.

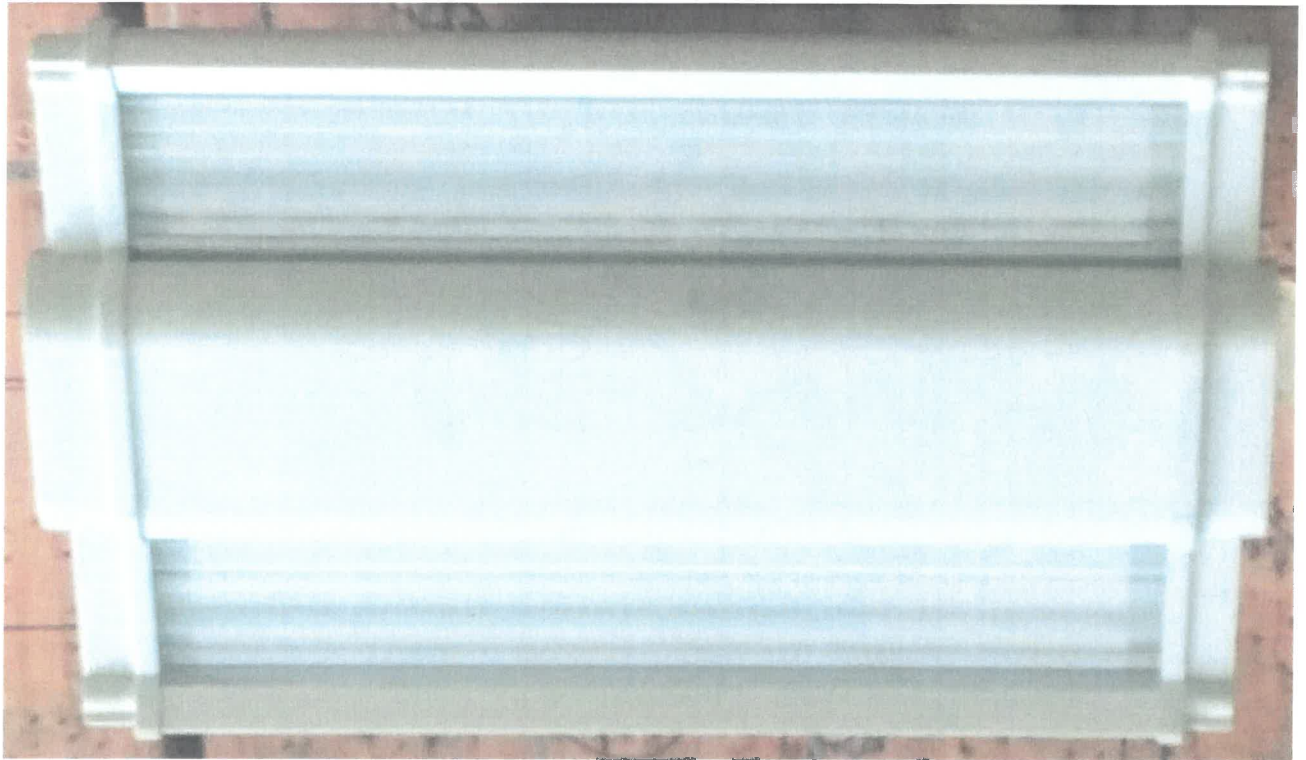
Prepared by


Konrad
Testing Engineer



Approved and released by


Dr.-Ing. Stegmaier
Head of section
Building Envelope, Energy Efficiency,
Floor Constructions



Picture 1
Overall view: visible face
"H LUM (ST/PR.396)"



Picture 2
Detail: Suspension
"H LUM (ST/PR.396)"