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This report enfolded 11 pages.

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Staatliche Versuchsanstalt

Elektrotechnik und Elektronik

FEDERAL INSTITUTE OF TECHNOLOGY
ELECTRICAL AND
ELECTRONIC ENGINEERING

EXPERTISE

TGM – VA EE 39343

Ball throwing safety for
LED-Luminaire
Series: SLN2-..

according to: DIN 57710-13/VDE 0710-13: 1981-05
DIN 18032-3:1997-04

Commissioned by:	Zumtobel Lighting GmbH.
Address:	A-6851 Dornbirn, Schweizer Straße 30
Order reached:	2023-03-23 / Order Nr. 90139291
Sign of order:	Mr. J. Prodinger / Mr. T. Egle
Receiving of test sample(s):	22643 / 2023-03-14
Test period:	CW 11/2023, CW 19/2023
TGM-number:	189/23

1 Test order

As ordered we carried out the tests for ball throwing safe luminaries (DIN 57710-13/VDE 0710-13:1981-05) according to DIN 18032-3:1997-04 for the luminaire type SLN2-... .

2 Test item

LED- Luminaires:

Series: SLN2-...
Type: SLN2-B 1600-840 L1250 PC/PCO/DD LDE
Nominal voltage: 220-240 V, 0/50/60 Hz
Nominal current: 0,085 A
Nominal wattage: 1x16,2W
Weight: 1,8kg
Class: I
IP- Degree of protection: IP20
Mounting: direct mounting on ceiling or suspended

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Weight: 1,8kg
Class: I
IP- Degree of protection: IP20
Mounting: recessed mounted in ceiling

Figure 1: SLN2-B 1600-840 L1250 PC/PCO/DD LDE + SLN2 C MSC L 1250 SR – mounting ceiling, direct

Figure 2: SLN2-B 1600-840 L1250 PC/PCO/DD LDE + SLN2 C MSC L 1250 SR – mounting ceiling, suspended

Figure 3: SLN2-B 1600-840 L1250 PC/PCO/DD LDE + SLN2 CMRC L 1250 WH – recessed in ceiling

Type code part " Batten ":

SLN2-B ****_**** L**** ********* *** ***

Emergency
None
E3D

Type of ballast
LDE… dimmable
LDO… Dali dimmable
EVG… not dimmable

Variant
PC/PCO/DD…Opal/Office/Dropdiffuser
PC/DD… Opal/Dropdiffuser
WW…WallWasher

Length of batten
500-2250

Luminous colour
830,840,930,940
927-65
RGBW

Lumen output
1600
2500
3500

Batten

Luminaire series

Figure 4: type code for SLN2-.. series

Type code part "Channel": Recessed

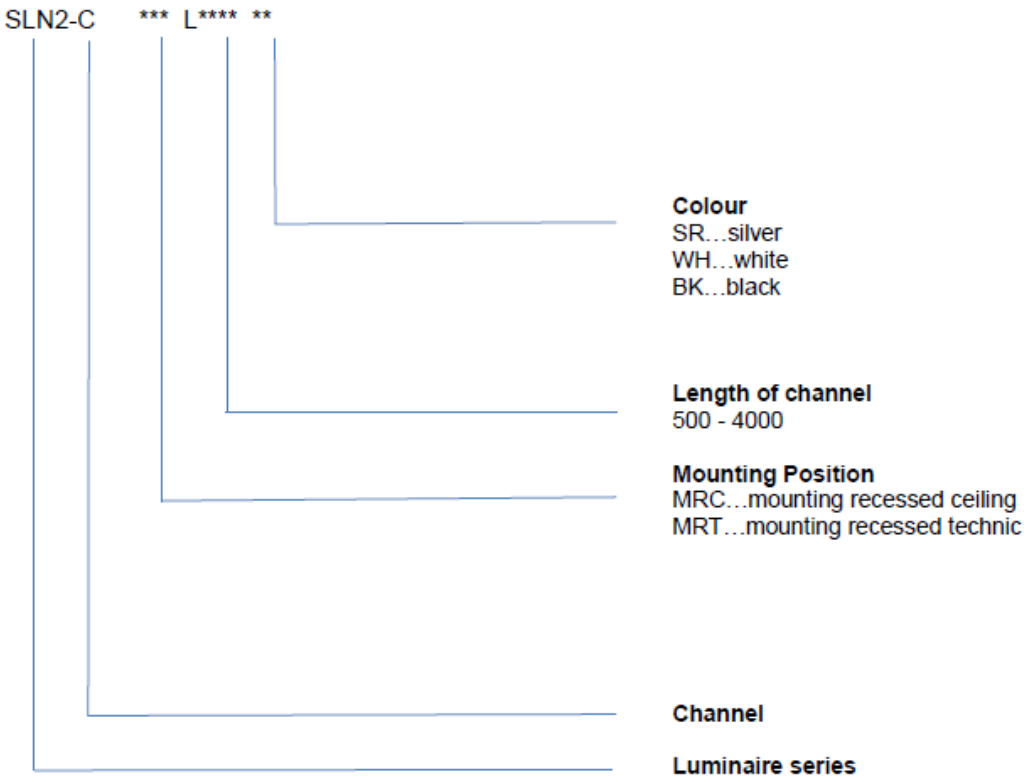

Figure 5: type code for SLN2-.. series – recessed mounted

Type code part "Channel": Surface/Suspended

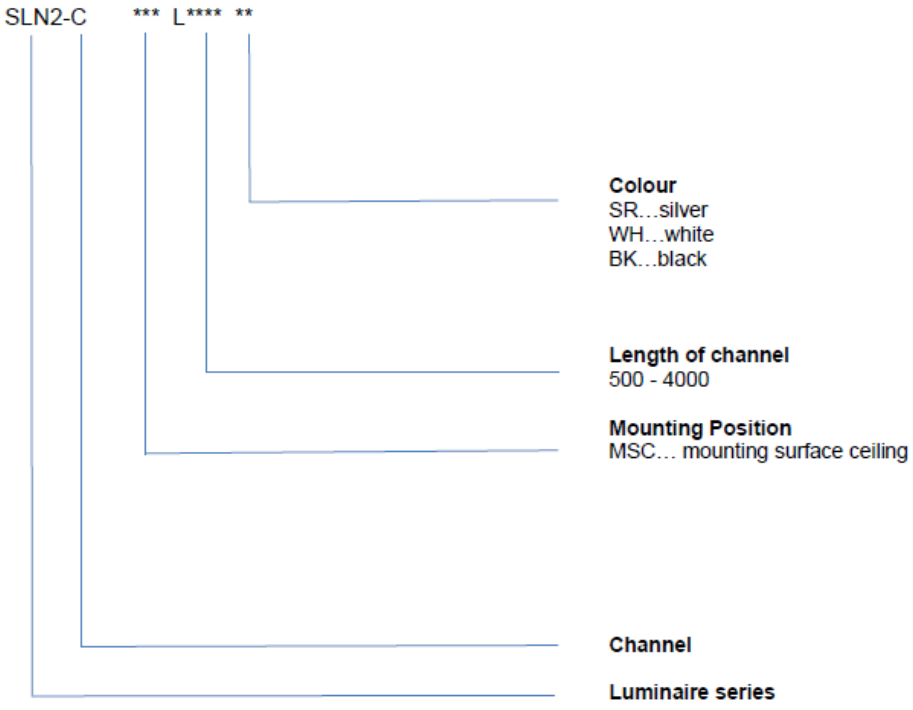

Figure 6: type code for SLN2-.. series – surface/suspended mounted

Type code part "Cover":

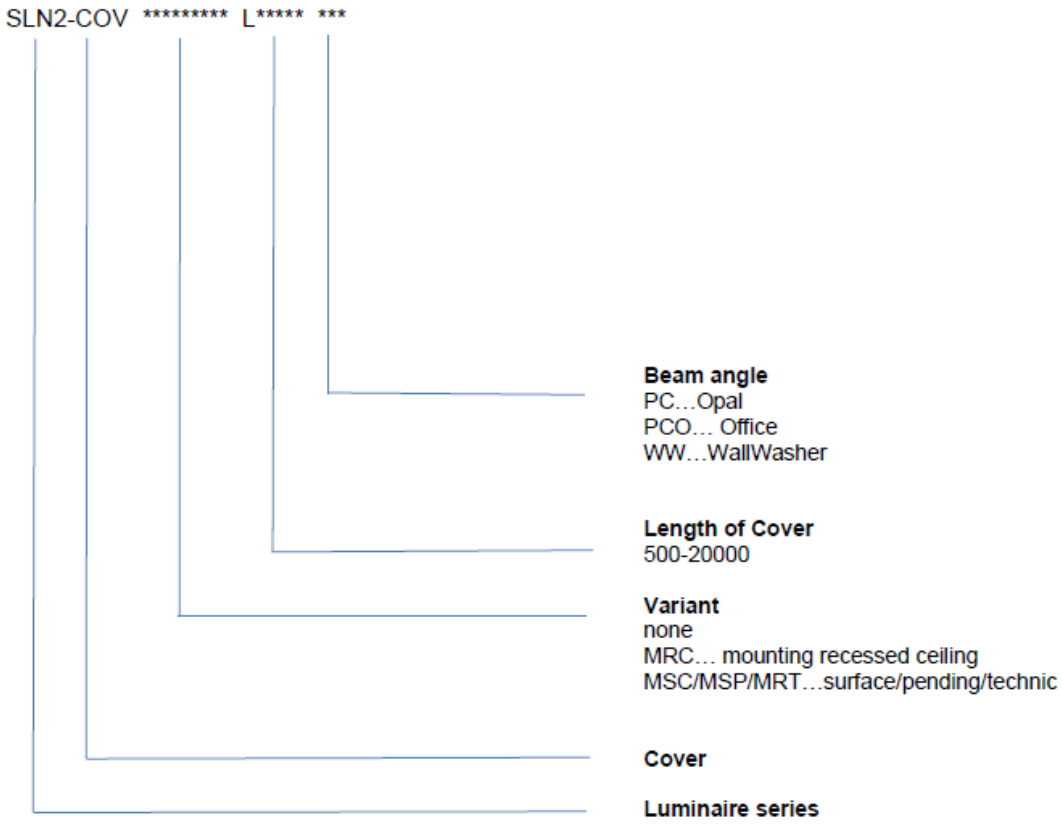

Figure 7: type code for SLN2-.. series – covers

accessories :

SLN2 CONCRETE EC SET BWS SR
SLN2 MSC EC SET BWS SR
SLN2 MSC EC SET BWS WH
SLN2 MSC EC SET BWS BK
SLN2 MRT EC SET BWS SR
SLN2 MRT EC SET BWS WH
SLN2 MRT EC SET BWS BK
SLN2/SLOIN/EQL MOUNT NIV PB SET
SLN2/SLOIN T IP54 PB NIV SET
SLN2 MRT IP54 NIV SET
SLN2 MRT IP54 PB NIV SET
SLN2 MRT NIV SET
SLN2 MRT PB NIV SET
SLN2/SLOIN ZAK BWS SET
SLN2/SLOIN PROF AL PB L2500
SLN2/SLOIN CON
SLN2/SLOIN E EC BWS SET
SLN2 MSC/MRT/MSP CON SET

Figure 8: type code for SLN2-.. series – available accessories

3 Marking

Figure 9: marking / label

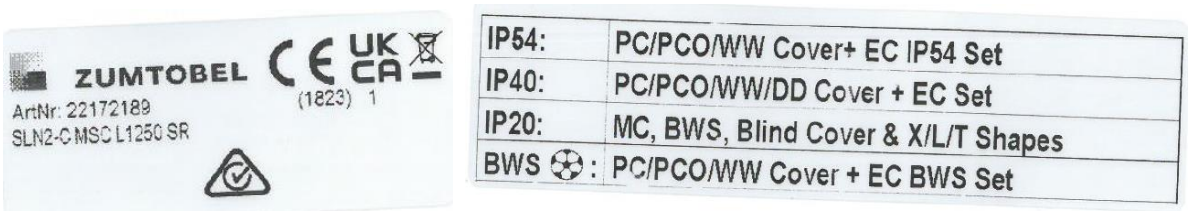

Figure 10: marking / label on luminaires for direct mounting or suspended

Figure 11: marking / label on luminaires for recessed mounting

4 Test specifications and Results

Specifications during the test:

The tests were performed according to DIN 57710-13/VDE 0710-13:1981-05 (Luminaires with operating voltage below 1000V; luminaires safety to ball throwing) in conjunction with DIN 18032-3:1997-04 (Sport halls – Halls for gymnastics, games and multi-purpose use – Part 3: Testing of safety against ball throwing)

The luminaire was mounted direct on the ceiling recessed in a wooden box on an 10cm thick wooden plate on the ceiling; fixed with a mounting frame.

Luminaires tested with all optics and light distributions according to type code on page 14.

Ball throwing test apparatus: similar picture 1 of DIN 18032-3:1997-04

Handball: mass: 430g
diameter: ∅ 187mm
overpressure: 1.2bar
impact speed: (16.5 ± 0.5) m/s

ball	shot - angle	shot quantity
Handball	90°	12
Handball	-60°	12
Handball	+60°	12

Table 1: luminaires safety to ball throwing – shot sequence

Results:

After the test: The test sample fulfils the requirements of EN IEC 60598-1:2021+A11:2022 for the protection against electric shock (section 8: no access to live parts with the test finger) and the electric strength (section 10: high voltage test).
There was no damage according to DIN 57710-13/VDE 0710-13:1981-05 detected, particularly:

- No access to live parts.
- Effectiveness of isolation barriers is not reduced.
- No reduction of the IP-degree of protection against the ingress of dust, solid objects and moisture.
- Covers could be removed or replaced without damaging the cover or isolation.

During the test no parts of the luminaire were falling down. The LED-modules shows no mechanical damage. The enclosure of the luminaire shows no damage which have an effect on the creepage distances and clearances.

Figure 12: SLN2-B 1600-840 L1250 PC/PCO/DD LDE + SLN2 C MSC L 1250 SR – direct mounting on ceiling

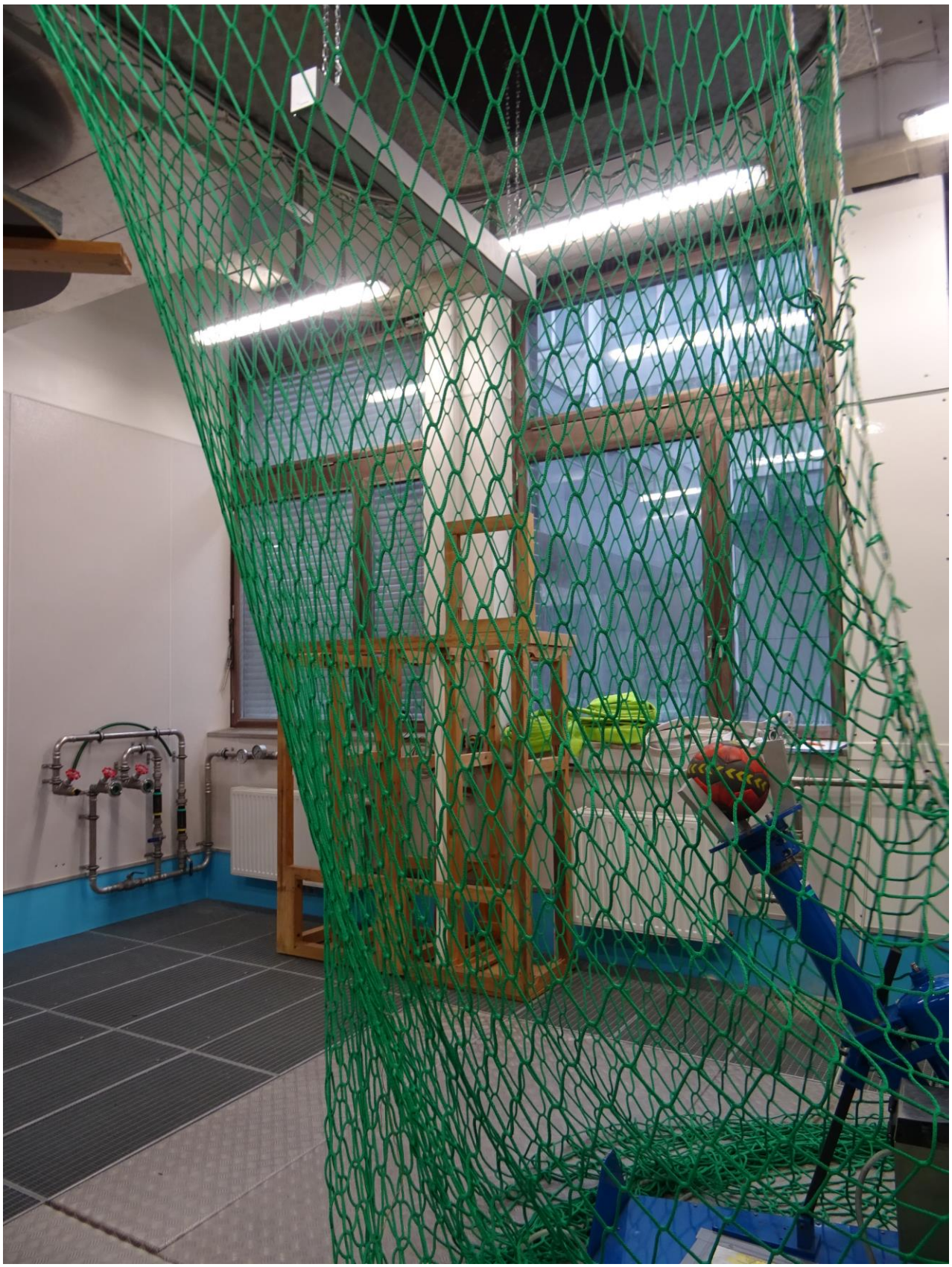

Figure 13: SLN2-B 1600-840 L1250 PC/PCO/DD LDE + SLN2 C MSC L 1250 SR – mounting ceiling, suspended

Figure 14: SLN2-B 1600-840 L1250 PC/PCO/DD LDE + SLN2 CMRC L 1250 WH – recessed in ceiling

5 Summary

The test item described and pictured under clause 2 fulfils the requirements for ball throwing safe luminaries (DIN 57710-13/VDE 0710-13:1981-05) according to DIN 18032-3:1997-04. The test result relates to all luminaire versions of the SLN2-.. series, provided these are structurally identical to the tested luminaires (see type code).

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The present report

is including 11 Pages
0 Appendix(es) (with 0 pages)

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